Close, But No Cigar: The Bimodal Rewards to Prize--Seeking

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This article examines the economic effects of prizes with implications for the diversity of market positions, especially in cultural fields. Many prizes have three notable features that together yield an emergent reward structure: (1) consumers treat prizes as judgment devices when making purchase decisions, (2) prizes introduce sharp discontinuities between winners and also-rans, and (3) appealing to prize juries requires costly sacrifices of mass audience appeal. When all three of these conditions obtain, winning a prize is valuable, but seeking it is costly, so trying and failing yields the worst outcome—a logic we characterize as a Tullock lottery. We test the model with analyses of Oscar nominations and Hollywood films from 1985-2009. We create an innovative measure of prize-seeking, or "Oscar appeal," on the basis of similarity to recent nominees in terms of such things as genre, plot keywords, and release date. We then show that Oscar appeal has no effect on profitability. However, this zero-order relationship conceals that returns to strong Oscar appeals are bimodal, with super-normal returns for nominees and large losses for snubs. We then argue that the effect of judgment devices on fields depends on how they structure and refract information.

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December of 2005 saw the release of two films that had striking similarities but fared very differently at the box office. Both films were dramas set in the rural American West that had production budgets of about $15 million, involved artists with prior Oscar nominations, and told stories about stigmatized minorities in ways that spoke to contemporary political contentions. Moreover, both films had Oscar marketing campaigns and were featured in a *Variety* cover story, "The 2006 Oscar Portfolio."[1] However, while *Brokeback Mountain* was nominated for eight Oscars and went on to make $83 million in domestic box office, *The Three Burials of Melquiades Estrada* received no Oscar nominations and made only a disappointing $9 million.

These two otherwise similar films illustrate the general theme of this paper, that prizes can significantly shape the reward structure of fields. We derive this emergent outcome from three features common to many prizes. First, prizes can serve as important consumer judgment devices for focusing consumer attention in fields where quality is complex. Second, prizes introduce sharp discontinuities between winners and those who were about as prize-worthy but failed to win. Third, appealing to prize juries is costly when their taste is decoupled from direct mass audience appeal. We build on the Tullock lottery model from economics to suggest that, when these three conditions hold, prizes create a bimodal reward structure in which winning a prize is valuable but pursuing it is costly. That is, prize-seeking can be a risky strategy, with great rewards for those who achieve prizes and substantial losses for those who try but fail. After developing our theoretical argument, we apply it to the empirical setting of the Oscars, which involves operationalizing a measure of prize-seeking in terms of a film's Oscar appeal.

This paper speaks to several literatures. First, it contributes to the emerging research stream concerned with the roles that information plays in structuring the interface between consumers and producers (e.g., Anand and Peterson 2000; Espeland and Sauder 2007; Hsu 2006; Karpik 2010). This literature has improved our understanding of how continuous measures (e.g., sales charts, quality rankings, critic ratings) serve as judgment devices but has thus far largely ignored prizes. Our study confirms this literature's general insight that judgment devices play a crucial role in shaping consumer demand, but contrasts with prior findings in two important ways. First, whereas previous research understands judgment devices as uniformly affecting the entire field, we observe a more selective impact benefitting some producers while leaving others with only the costs of their failed efforts to achieve a favorable evaluation. Second, in contrast to prior claims that judgment devices promote homogeneity, we suggest that they can also promote heterogeneity of fields by enabling the production of offerings that would not otherwise be economically sustainable while not changing the incentives for strategies that make more direct appeals to audience preferences. As we develop in this paper, these outcomes of bimodal returns at the individual level and diversity at the field level can be explained by how prizes can not only be valuable to attain and costly to pursue (much like many other forms of judgment devices) but also have the distinct feature of introducing discontinuities.

These insights also inform the literature on status. Earlier studies found high status to be associated with various desirable rewards (e.g., Podolny 1993). Our study provides empirical support for the position that the *structure* of status allocation significantly affects the distribution of outcomes (Frank and Cook 1995; Goode 1978; Sauder 2006). Specifically, we suggest that a status system that is minimally scaled and based only on a

few recognized categories may lead to different actor- and field-level outcomes than a status system with finer granularity.

Further, this paper contributes to understanding and modeling the social organization of cultural industries, where prizes are especially common (English 2005; Street 2005). We both provide a theoretical argument about prizes and prize-seeking and make a methodological contribution by developing a novel operationalization of recursively refracted prestige that measures the prize-worthiness of cultural products. Our theoretical argument begins from the sociology of culture's model that prizes are a mechanism through which cultural elites can consecrate those works that are consistent with their tastes while denying such consecration to others (Bourdieu 1993). Once consecrated, goods appeal to a much broader audience that would not have discovered the works in the absence of this intercession. Producers seeking to gain this cultural consecration (and the resulting prestige that in turn attracts audiences) can attempt to engage in costly reverse engineering of the logics favored by cultural elites. As a result, the existence of prizes can extend the breadth of cultural fields by creating demand for works with high prize appeal but comparatively little direct mass appeal. Overall, our argument suggests that pursuing consecration is a risky strategy, thereby providing a new twist on the literature on the effects of cultural prizes (e.g., Lee 2009; Lincoln 2007) by also reckoning the costs of their pursuit.

PRIZES

Since the mid-18th century, when the British Society of Arts started to bestow achievement awards, prizes have proliferated exponentially and are still on the rise today (Best 2008; Goode 1978; Street 2005). The International Congress of Distinguished Awards, for example, identified a total of 26,400 prizes that are currently being awarded (cf. English 2005). While prizes have always had a special place in cultural industries, they have now spread to virtually every institutional field (Frey 2006). For example, the corporate sector has witnessed a strong increase in the number of prizes, including awards for the most innovative designs and the most environmentally friendly solutions (Anand and Watson 2004).

We propose three common features of prizes that, when all three obtain, cause prizes to have emergent economic effects: (1) consumers treat prizes as judgment devices, (2) prizes create sharp discontinuities, and (3) appealing to prize juries sacrifices mass audience appeal.

Consumer Judgment Devices

To the consumer, prizes attached to products can serve as important judgment devices (Karpik 2010). A judgment device is a guidepost that helps reduce the consumer's cognitive deficit—that is, the gap between what the consumer knows and what she would need to know in order to make an optimal choice. Such cognitive deficits are usually caused by the seemingly infinite variety of available offerings along with considerable uncertainties about the true quality of these offerings (Best 2011; Caves 2000).

In these complex purchase situations, consumers often delegate judgment by relying on evaluations from a judgment device, to the extent that the device functions as a "surrogate consumer" that powerfully mediates the exchange relationship (Hirsch 1972; Karpik 2010; Sauder 2006). Judgment devices play an important role in structuring demand. By aiding consumers in making purchase decisions, judgment devices enable the exchange of products with high quality uncertainty and thus render markets possible that otherwise might not exist. Most important for the concerns of this study, judgment devices also affect the success of individual producers through acting as status markers and assigning prestige to their approved offerings (Goode 1978; Podolny 1993). As seen in experiments, a product's position in sales charts has a direct causal influence on future sales (Salganik, Dodds, and Watts 2006; Salganik and Watts 2008). Audience ratings are the very currency of broadcasting markets, and participants in the market attempt to shift the definitions and biases underlying these ratings in their favor (Napoli 2011). Moreover, critics are known to significantly determine the fate of producers in many industries (Hirsch 1972; Karpik 2010).

Similarly, prizes can serve as judgment devices that attract consumers to products (Best 2011; English 2005), and natural experiments suggest that their effect is substantially causal (e.g., Ginsburgh and van Ours 2003). Prizes constitute symbolic capital, but consumers treating them as judgment devices transmutes the producer's symbolic capital into economic capital. For this reason, prizes would be of pecuniary value even if producers were so unsentimental as to place no intrinsic value on accolades. Moreover, since profitable strategies are more likely to be imitated (e.g., Haveman 1993), knowing what sorts of products made money suggests what sorts of products will continue to be produced in the future.

It is thus not surprising when producers alter their behavior so as to increase their chances of being evaluated favorably by these judgment devices (Espeland and Sauder 2007; Sauder and Espeland 2009). The success or failure of producer control of judgment devices can shape entire fields; for example, in the 1950s, the incumbent "Tin Pan Alley" music industry lost control of promotional media and as a result ceded most of the recorded music market to independent record labels offering rock and roll, country, and blues (Peterson and Berger 1975). Note that we use the term "producer" broadly throughout this paper to refer not only to enduring organizations but also to single-project organizations (e.g., films) and individuals (e.g., artists). As such, producers in this sense encompasses the production side generally, and our usage does not distinguish whether the locus of agency lies with, for instance, cultural distribution firms or creative workers. We can afford a certain agnosticism in deciding who exactly among the producers responds to the incentives of judgment devices since cultural production almost always reflects collaboration between capital and artists (Caves 2000) and in cases where action is inherently collaborative "it may not matter whom we see as holding the heuristic" (Martin 2009, p. 19).

Discontinuity Between Winners and Also-Rans

Prizes are unique among judgment devices in sharply demarcating winners from the rest; they act as instruments of consecration that grant legitimacy to certain products while

denying it to others, thus producing "discontinuity out of continuity" (Bourdieu 1991:120). In contrast, other judgment devices, such as rankings, create relatively continuous distinctions, following a logic of ordinal valorization rather than discontinuous consecration (see Allen and Parsons (2006) for the difference between valorization and consecration). Whereas such ordinal valorization assigns incrementally differentiated prestige to the majority of products, prizes elevate a few products above the rest (Anand and Watson 2004; Frank and Cook 1995; Goode 1978; Lincoln 2007). Notably, this means that in distinguishing the truly excellent, prizes create a complement of losers that homogenizes the merely good with the mediocre and the atrocious. It is this overly sharp distinction between the excellent and the merely good that makes prizes unique.

Merton (1968) describes the analogous phenomenon of the "41st chair problem" in reference to the large number of scientists who narrowly missed being admitted to one of forty seats in the French Academy of Science. Similarly, award competitions are typically characterized by a fixed number of prizes, resulting in many "uncrowned" actors who are essentially equivalent to the winners in every respect except that they fail to win the prize (Zuckerman 1996).

As a consequence, prizes can trigger a winner-take-all allocation of resources to small numbers of winners who benefit disproportionally vis-à-vis also-rans (Frank and Cook 1995). They confer symbolic capital (and by extension, whatever economic success that this symbolic capital avails) to a few winners while denying these benefits to many also-rans, thus translating small differences in relevant product characteristics into potentially enormous differences in outcomes. Notably, on the margin between the worst prize recipient and the best also-ran, any differences in the relevant characteristics are likely to be negligible, so differences in outcomes are the result of the prize itself. The only major difference between winner and also-ran is that one attains a prize denied to the other. Hence the carnival game verbal consolation, "close, but no cigar."

Prize Appeal versus Mass Audience Appeal

So far, we have emphasized that prizes can attract consumer demand but in this section we raise the oft neglected point that producers' attempts at appealing to prizes can be costly. In particular, we suggest that these costs frequently stem from prizes being conferred based on expert opinion (English 2005). Through specialized training or acquired experience, experts have accumulated vast knowledge on the relevant subject matter, which raises their legitimacy as arbiters of taste and agents of consecration (Bourdieu 1993). Further, experts are often perceived as impartial (Caves 2000; Hirsch 1972), which increases consumer trust in the prize as a credible judgment device (Karpik 2010).

The resulting distinction between those performing the evaluation (the experts) and those eventually consuming the respective good (the consumers) raises the question as to what extent the preference structures of experts and consumers are congruent. Prior research in consumer behavior suggests that the criteria for excellence employed by experts in rendering their judgments and the standards of popular appeal governing the tastes of ordinary consumers tend to differ quite substantially (Holbrook 1999). For example, while experts in some fields may appreciate the demonstration of strong technical skills and high novelty, consumers tend not to cherish such attributes and may even resist

them (Caves 2000). On the contrary, experts in other fields may value orthodoxy in cultural production and adherence to canonical works or traditional standards with relatively low direct mass audience appeal (Kremp 2010). For the purpose of our argument, the important thing is not what sort of preferences are held by insider experts and mass audiences, but only that they may differ from one another.

The reason for such divergence is that ordinary consumers commonly do not share the same habitus and dispositions that guide experts' standards of evaluation. As suggested by Bourdieu (1984; 1993; 1996), the standards learned and employed by elites who possess significant cultural capital tend to deviate from the standards of those with comparatively less cultural capital. Accordingly, differences between expert judgments and popular appeal are common.

Such differences are often even desired by the prize organizers, since they help to distinguish prize-worthiness from straightforward mass appeal and thus give the prize a *raison d'être* (Street 2005). Almost by definition, prizes are intended to recognize excellence in a field, but they can also subtly redefine what excellence means. Prize founders commonly express a desire to provide a means for recognizing artistic achievement in order to correct a perceived overemphasis on mass appeal (Caves 2000; English 2005). That is, prizes often represent an attempt to promote the logic of "art for art's sake" (i.e., cultural capital) over that of commercial appeal (i.e., economic capital).

PRIZES AS TULLOCK LOTTERIES

In the above sections, we elaborated three important features of many prizes: they serve as judgment devices that attract consumer demand, they introduce discontinuities between winners and comparable also-rans, and they are allocated according to criteria that may differ non-trivially from direct audience appeal. Taken together, the combination of these conditions results in many prizes having effects that are quite different from those of other judgment devices studied in prior research. In developing our argument, we suggest that many prize competitions can be interpreted as Tullock lotteries, which in turn allows us to derive non-intuitive predictions about the effect of those prizes on producer returns.

The theory of Tullock lotteries was originally developed by public choice theorists to explore the issue of rent-seeking (Krueger 1974; Tullock 1967). In this technical usage, a "rent" is a surplus derived from a resource that nature or social structure holds fixed in supply (Sørensen 1996), for example the profits of a legally-enforceable monopoly or a domestic industry protected by tariffs. The pursuit of rent-producing resources is called rent-seeking, which can be extremely costly in time, money, and other efforts. A rich literature in economics has employed formal modeling and lab experiments to study Tullock lotteries (see Konrad 2009 for a recent survey), but so far relatively little research has systematically examined Tullock lotteries in real-world social settings.

In general, Tullock lotteries are a model for an unusual form of exchange in which a market actor is less a purchaser than a gambler. In most other forms of market exchange, only the actor who actually acquires a resource has to pay for it, while those who fail to attain it get to keep their money. In contrast, Tullock lotteries characterize situations where all aspirants bear costs but the resource is awarded only to the winner (Krueger 1974; Tullock 1967). That is, in a Tullock lottery, one pays a bid and then may or may not

receive the resource for which one is bidding, with the likelihood of winning being proportional to the magnitude of one's bid.[2] It is important to note that bidding expenses have no salvage value for the unsuccessful bidder; the efforts of those who do not attain the resource are simply lost. Consequently, even if the winner enjoys substantial rents, the costs incurred by the losers must be included in reckoning the expected value of rent-seeking.

Paralleling the structure of Tullock lotteries, we suggest that prize winners tend to be among those with the most impressive efforts. However, unsuccessful prize seekers do not regain either the direct outlays in time and effort they invested in lobbying for the prize nor the indirect costs they incurred through changing their strategy to appeal to the prize jury. That is, the prize can be viewed as a valuable resource allocated to the winner of a competition that is determined by a combination of luck and the irrecoverable expenditures of prize seekers. From this perspective, prize-seeking can be viewed as akin to buying a lottery ticket (Frank and Cook 1995, p. 103).

These observations have important implications for the pay-off structure of producers in markets with prizes characterized by the three scope conditions outlined earlier. When considered net of one another, winning should be valuable but prize-seeking should be costly. While the prize winners benefit substantially from the judgment device's credentials conferred upon them, the discontinuous nature of prizes means that also-rans will experience no prize benefits while at the same time facing the burden of wasted prize-seeking expenses. Thus, we propose the following:

Hypothesis 1: When considered net of winning, returns to prize-seeking will be negative.

A corollary is that because rent-seeking is expensive and uncertain, it can dissipate the expected value of the rents. That is, the long-run expected value of rent-seeking should generally be a normal rate of return (Krueger 1974; Tullock 1967). Although rent-seeking returns are bimodal (being higher than normal for those who achieve the rent and lower than normal for those who try and fail), the expected value should be zero. This suggests that a prize-seeking strategy should not have a gross effect on market success. Thus:

Hypothesis 1A: When pooling together prize winners and also-rans, returns to prize-seeking will be average.

PRIZE SEEKERS AND PRIZE WINNERS

As argued above, Tullock lotteries conceptualize rent-seeking as the placing of bids for a valuable resource. In mathematical proofs, these bids are conceived of either as money or as the conceptually clean but vague construct of "utility." In contrast, bids are difficult to observe in many real-world social settings, because they do not come in monetary forms and utility is as difficult to measure in empirical work as it is easy to model in formal theory. Appealing to prize juries while sacrificing mass audience appeal is a type of bid that is difficult to measure due to its nonmonetary form. Worse, by only revealing a small number of winners (rather than ranking all candidates) and providing relatively few specific details regarding the reasons for selecting these winners (rather than providing an

explicit scoring schema) (Karpik 2010), prize competitions exacerbate the difficulty of estimating the extent of rent-seeking by individual producers. In other words, an external observer only learns who wins and who doesn't, but not why or how close each of the losers came to winning. In this section, we use Bourdieu's theory of artistic consecration to motivate an approach to reconstructing the underlying distribution of prize-seeking.

Bourdieu (1993) emphasizes that the evaluation criteria applied by the instruments of consecration are often implicit, abstract, and esoteric. Whereas it is clear that the logic of consecration is typically distinct from the preferences of mass consumers, it is difficult to clearly specify what that logic is. Individual producers in fields structured by consecration must exert significant effort in searching for the "culturally pertinent features endowed with value in the field's own economy" (Bourdieu 1993:117) and in implementing those features in their own production to increase their chances of gaining prestige. An important mechanism for doing so is mimesis (Bielby and Bielby 1994; Bourdieu 1977; 1990), the process of imitation whereby producers adopt the principles that successful peers have used in the past.

In deciding how to seek the endorsement of a judgment device, producers can use the heuristic of how the judgment device has treated various types of products in the past. By doing so, producers can reverse engineer the tacit criteria applied even in esoteric adjudication. For instance, if a judgment device tends to favor products adhering to a particular set of artistic themes, then producers can pursue the device's endorsement by themselves adopting those themes.

Therefore, we argue that one can accomplish the otherwise intractable task of operationalizing prize-seeking by exploiting the tacit logic of prize seekers to imitate the observable traits associated with past prize-winners. One can then measure the prize potential of any given product in the present by mapping how strongly it embodies these observable traits. In the same way that larger bids make one more likely to win a Tullock lottery, greater prize appeal—as reflected in one's similarity to recent prize winners— makes one more likely to win a prize.

Hypothesis 2: Similarity to recent prize winners on observable traits will increase the chance of winning.

THE EMPIRICAL CASE: HOLLYWOOD AND THE OSCARS

We test our hypotheses within the context of the Hollywood film industry, home to one of the world's most prominent prizes: the Academy Awards or "Oscars" (Levy 2003). The Oscars constitute the model for cultural prizes in the field of entertainment (English 2005), with such widely imitated features as: public nominations, final awards announcement as spectacle, and an annual cycle recognizing achievements from the previous twelve months.[3] The Oscars represent a particularly compelling setting for our research, since they clearly reflect the three general features of prizes that we earlier proposed should trigger a Tullock lottery reward structure.

First, the Oscars function as an influential judgment device. A movie is a classic example of an experience good—people do not know for certain whether they will like a movie until they have seen it, and they will not get a refund if it did not meet their

expectations (Lee 2009).[4] Due to this high ex ante uncertainty, consumers' decisions of whether or not to view a particular movie must rely on judgment devices (Deuchert, Adjamah, and Pauly 2005). Among the most important judgment devices in the film industry are the Oscars (Deuchert et al. 2005; English 2005). Commonly conceived of as a prime indicator of cinematic qualities and achievement, the Oscars have long been the focus of audience attention. Similarly, producers follow the outcomes of the Oscars very closely and often incorporate information about Oscar wins and nominations when promoting a movie (Lee 2009).

Second, the Oscars create a sharp discontinuity between those that are nominated for an Oscar and those that are not.[5] The original objective of establishing the Oscars was to recognize excellence in film, making the "best" in the field salient and thereby increasing the esteem (and market demand) for this selected group of films disproportionately to those that are not considered "best" (Lincoln 2007; Rossman, Esparza, and Bonacich 2010). The empirical results by Nelson et al. (2001) illustrate how the Oscars transform small differences in quality into large differences in earnings. They estimate that being nominated for Best Picture creates an additional $4.8 million (in 1997 dollars) in box office.

Third, the Oscars are awarded by a jury of film experts. Academy members of each relevant branch are eligible to make nominations, with writers nominating writers, actors nominating actors, etc., and members of all branches nominating films for Best Picture (Levy 2003). In total, 5,783 Academy members were entitled to vote for the 2012 Oscars (Academy of Motion Picture Arts and Sciences 2011)—a relatively small and highly select group compared with all Hollywood workers, and even more so compared to audiences in general. Academy members are recruited from prior nominees and other artists sponsored by the members, giving the Academy the character of an elite jury of experts in the field (Deuchert et al. 2005). These experts differ from the average moviegoer not only in terms of training and status but also in terms of demographics; the average Academy member is decades older than the movie industry's median customer and they are disproportionately non-Hispanic white men (Caves 2000; Horn, Sperling, and Smith 2012). These differences suggest that Academy members tend to emphasize different evaluative criteria than ordinary movie audiences. Consequently, film producers catering to Academy members' preferences may incur a nontrivial cost by sacrificing direct audience appeal.

Given their close fit with our theory's scope conditions, their usage in prior sociological research (e.g., Faulkner and Anderson 1987; Lincoln 2007; Rossman et al. 2010), and the availability of systematic data over a prolonged period of time, we use the Oscars in Hollywood to test our hypotheses. The unit of analysis is the film. More specifically, we analyzed films released from 1985 to 2009 (i.e., those eligible for the 58th through 82nd Academy Awards).[6] Data on these films came from the Internet Movie Database (IMDb) and studiosystem.com. We restricted the sample to films appearing on Academy eligibility ballots, which in practice means films that had a Los Angeles county theatrical run during the release year. We further restricted the sample to exclude foreign-language, animated, and documentary films, since these films are on the edge of the field and not directly comparable. For our primary analyses, we used only films with observable budgets (n=2,919), but in Appendix B we show that all results are robust to also including films without observed budgets (n=3,732).

Our analyses proceed as follows: We first use a lagged regression model of Oscar nomination to define each film's Oscar appeal as a function of genre, plot keywords, and

various other traits. We then move on to exploring financial returns as a function of Oscar appeal and Oscar nominations. Between these two analyses, we are able to model the Oscars as a Tullock lottery by operationalizing the magnitude of a non-pecuniary bid and then testing its effect on ultimate financial outcomes, both in expectation and net of achieving the prize.

OSCAR APPEAL

One of the central concepts addressed in this paper is the extent to which a film's traits conform to those valued by Academy voters. The entertainment press and other close watchers of the film industry have a strong shared understanding that some films pursue an Oscar strategy, but this is less often articulated than assumed (or satirized, as in *Tropic Thunder* (2008)). Among the most common terms for such films is "Oscar bait," a term that implicitly mocks these films for their aggressive pursuit of prizes, in contrast to the coy detachment artists are expected to show toward them (English 2005). To avoid the pejorative connotations of that term, as well as to emphasize the fact that we treat the plausible potential for achieving Oscars as a continuous concept rather than a discrete category, we refer instead to films' varying degrees of "Oscar appeal."

There is a measurement challenge related to Oscar appeal, as it is not explicitly measured in any database. We thus must operationalize a metric that allows us to rate how closely the strategy of each film in our data frame approximated the Oscar appeal formula at the time of its release. Such an operationalization has several complications. First, we ideally want our measure of Oscar appeal to reflect an ex ante perspective of a film's intended strategy that is unbiased by whether the film actually was nominated or even by how well-executed the film was. Second, we want to allow for the possibility that the Oscar appeal formula has evolved over time rather than risk anachronistically applying current understandings of Oscar appeal to films that were released decades ago. Third, we want our operationalization to be scalable to a relatively large number of films to allow for quantitative analyses. All of these criteria point to the use of computerized coding of Oscar appeal rather than the use of human coders.

With this in mind, and following a logic similar to Tolnay, Deane, and Beck (1996, pp. 797f.), we conceive of Oscar appeal as an approximation of the "Oscar formula" as implicitly understood by filmmakers and Academy members at particular points in time and measure it as the degree to which a film's characteristics resemble recent nominees using a three-step process.[7] First, we collect information on various film characteristics from IMDb and recode the keyword and genre variables into summary indices. This recoding allows us to include string-variables that are too sparse to analyze otherwise. Second, we perform negative-binomial regressions (over a series of rolling five-year windows)[8] to determine the impact of these film characteristics on receiving major category Oscar nominations (acting, writing, director, Best Picture). Third, we construct each film's Oscar appeal as the linear prediction of the regression coefficients from the immediately preceding five years. The predicted values based on this (lagged) model serve to operationalize the extent to which filmmakers have crafted films with Oscar appeal, regardless of whether or not they actually receive nominations. The rolling windows in step two and the lag from step two to step three avoid endogeneity in defining Oscar appeal

(and have the added benefit of allowing for the possibility of changes in fashion). In the following sections, we describe each of these steps in more detail and validate the resulting Oscar appeal measure.

Genres and Keywords

IMDb has two files describing the thematic content of films. These files deserve special attention both because their categorical nature makes them technically demanding to integrate into the analysis and because they are where we would expect to find indications of the aesthetic dimension of Oscar appeal. The IMDb "genres" file describes a close-coded system distinguishing 19 broad genre categories of films.[9] In contrast, the IMDb "keywords" file is an open-coded system with thousands of much more specific thematic elements.[10] Both files have a field-tagged data structure, meaning that codes are non-mutually exclusive descriptions rather than a mutually exclusive dummy set. For instance, *When Harry Met Sally…* (1989) has the genres "comedy," "drama," and "romance" as well as 39 keywords including "sex," "friendship," "university-of-chicago," and "fake-orgasm." All thematic tags attached to a film are implicitly equal, with no distinction of primary/secondary, plot/subplot, or the like.

Both genres and keywords present considerable analytical difficulties in any type of statistical estimation strategy. First, both variables run into perfect prediction problems when a particular theme only appears in films that do not receive any Oscar nominations in a given period. Moreover, keywords are open-coded, so there are a very large number of unique strings and a very sparse matrix for the combinations of film and keyword string. As such, it is impossible to derive weights for individual keyword strings through any sort of regression or factor framework. Rather, we define our theme indices by formula, although the coefficients for the effects of these indices upon achieving Oscars are of course estimated by regression. Although we define the genre and keyword values separately, we will describe them together with the generic term "themes," because the algorithms used are the same for both.

Conceptually, we use the Oscar nominations of earlier films to define the Oscarness of themes associated with these films, which in turn informs the Oscarness of later films that use these themes. This logic of recursively refracted prestige is common in cultural sociology, as for instance in Bourdieu's (1993) model of artists/authors deriving prestige from critics and gallerists/publishers, who in turn derive prestige from artists/authors. Our approach also parallels work in economics and political science to measure the political tone of press coverage by means of catchphrases or NGOs appearing in press coverage, with weights for these references being derived from the voting records of members of Congress who also use them (Gentzkow and Shapiro 2006; Groseclose and Milyo 2005).

Let i be a theme and j a film with ζ_{ij} being a dummy for theme i being attached to film j. Then $n_{i()}$ would be the number of films using a particular theme and $n_{j()}$ would be the number of keywords that describe a particular film. We can take κ_j, or the number of major category Oscar nominations earned by film j, as our datum for Oscarness. We would like to log this variable but cannot as it has many zeroes; thus, we substitute the closely related inverse hyperbolic sine function (Burbidge, Magee, and Robb 1988). This

diminishing function of major category Oscar nominations constitutes our measure of the film's Oscarness, which we can use to inform our understanding of the Oscarness of the themes associated with it. We first scale this expression by the root number of themes attached to the film to reflect that in some sense the film's Oscarness is shared by its thematic elements. We then sum together all the scaled Oscarness for those films that are associated with a particular theme and divide this sum by the frequency of the theme so as to give an indication of the Oscarness for the theme's average film. The result is λ_{it}, which can be understood conceptually as how tightly associated with the Oscars a particular theme is at a particular time.

$$\lambda_{it} := \frac{\sum_{j=1}^{J} \zeta_{ij} \frac{ln\left(\kappa_j + \sqrt{\kappa_j^2 + 1}\right)}{\sqrt{n_{j(i)}}}}{n_{i(j)}} \tag{1}$$

Although there is some change from year to year, on a fairly consistent basis the highest λ_{it} genres are drama, war, history, and biography, whereas the lowest are usually horror, science-fiction, action, and family. The λ_{it} of keywords oscillates more than that of genre; for convenience we draw examples with reference to the year 2009, when among the high λ_{it} keywords were "bribery," "effeminacy," and "ambiguous-ending," whereas low λ_{it} included "animal-attack," "sword-fight," and "eaten-alive." To assess intertemporal correlations of both genre and keyword λ_{it} across years, we calculated Cronbach alphas and obtained values of 0.92 and 0.87, respectively, suggesting that both scores are relatively stable. Further analysis of how and why λ_{it} shifts over time is beyond the scope of this paper; for present purposes allowing temporal variation can be understood as a conservative assumption.

We then use these λ_{it} scores to define τ_j, which conceptually measures how extensively a film uses themes associated with the Oscars. For this purpose, we calculate the sum of λ_{it} of all the themes associated with a film. Also note that to avoid a semi-tautological usage, as well as to allow for a possible causal process of imitation, we define a film's τ_j based on λ_{it} scores calculated from a lagged rolling window covering films from the previous five years. For instance, films about boxing were nominated in both 1980 (*Raging Bull*) and 2004 (*Million Dollar Baby*). This means that having the keyword "boxing" would make a positive contribution to a film's τ_j from 1981–1985 and 2005–2009.

$$\tau_j := \sum_{i=1}^{I} \lambda_{it} \zeta_{ij} \tag{2}$$

Estimation of Oscar Appeal

Since films are not explicitly rated by their Oscar appeal, we must measure Oscar appeal operationally as how closely the film conforms to the model of recent films that have garnered Oscar nominations. Specifically, in Table 1 we model the number of major category Oscar nominations each film has garnered using negative binomial regression as a function of observable traits. We use negative binomial regression because the dependent variable (number of above-the-line nominations per film) is almost perfectly described by a negative binomial distribution (with a mean of 0.3, over-dispersion of 13.2, and no zero-

inflation).[11] To allow for nonlinear effects, we break our most important continuous variables into linear splines at the time-specific median.

---Place Table 1 about here---

As mentioned earlier, subsequent analyses base Oscar appeal on coefficients calculated with the previous five year's films. For space reasons, we present results based on data pooled across years, but the actual Oscar appeal metric is based on twenty-five rolling windows. Please see Appendix C for details.

For convenience of presentation, we introduce the independent variables as we discuss their effects. Conceptually, we consider Oscar appeal to be strategy rather than quality or outcome, so we base our measure only on information that was knowable prior to a film's release and that can be expected to affect a film's likelihood of being nominated for an Oscar: genres, keywords, MPAA rating, prior nominations of contributors, distributor, and release date.

First, we consider the film's themes. Genres and keywords are, respectively, the broad conventions and the specific elements of a film's artistic content (Waguespack and Sorenson 2011). As discussed above, we do not enter these thematic elements directly into the model but rather use τ_i to summarize how closely a film's themes resemble those of recent nominees. Both genre and keyword τ_i have very strong effects, dwarfing most of the other effects in the model. Interestingly, both of these thematic effects are concentrated on the lower end of the scale, such that there are huge increases as a film moves from low to moderate values of τ_i and smaller (but still large) effects as a film moves from moderate to high values of τ_i.

As an additional measure of the film's content, we include a dummy for an MPAA rating of "R" as this rating gives more artistic flexibility, which tends to be favored by prize voters (Simonton 2005). Indeed, we find that R-rated films attract more nominations.

We include specifications for prior nominations. This variable follows from extant literature on Hollywood's Matthew effect dynamics in status, which showed that actors were more likely to be nominated if they themselves were prior nominees and/or were working with prior nominated writers or directors (Rossman et al. 2010). In our analysis, prior nominations are statistically significant for directors but not for writers or actors.

The distributor is the company that advertises films and disseminates prints to theaters (Zuckerman and Kim 2003). It is the distributor that selects film projects to match a market strategy and is responsible for the Oscar marketing campaign, if any. We find that the most advantageous type of distributor for attaining Oscar nominations is the "independent films" subsidiary of a major studio (e.g., Sony Pictures Classics or Focus Features), with these specialty divisions outperforming both the mainstream divisions of major studios and true independent distributors (the reference category).

Finally, we include the day of the year as films are most able to commercially leverage Oscars if they are still in theaters when nominations are made (Lee 2009; Nelson et al. 2001). Consistent with exploiting this dynamic, the later in the year a film is released, the more nominations it attracts. As revealed by the spline specification, the effect is gradual for the first half of the year and the early fall, then accelerates dramatically in late November with the start of "Oscar season." The linear prediction effect of being released on Christmas versus New Year's Day is 2.9, a respectable effect that is comparable to having

advantageous keywords. This finding is consistent with the practice of Oscar-contending films having a "qualifying run" (i.e., a token theatrical release) around Christmas.

Validation of the Oscar Appeal Measure

The result of this algorithm is our Oscar appeal variable. The variable follows a normal distribution with a mean of -3.1 and a standard deviation of 2.1. Although the coefficients that define the metric are estimated with count models, the variable is normal because we use the linear prediction (i.e., before exponentiation). Some examples of films from various parts of the distribution will serve to illustrate the metric's face validity. Examples of films from the left tail (i.e., with extremely low Oscar appeal) include *The Hottie & the Nottie* (2008) and *The Foot Fist Way* (2006). Examples from near the mean/median include *Guinevere* (1999) and *How Stella Got Her Groove Back* (1998). In the extreme right tail we find many films that achieved multiple nominations, like *Out of Africa* (1985) and *The Aviator* (2004)*. However, many films with high Oscar appeal did not actually receive any nominations. For instance, the film with the very highest estimated Oscar appeal in our analysis, *Come See the Paradise* (1990) (which had a qualifying run and is about Japanese-American internment during World War II), achieved no nominations (and had a paltry box office).

In addition to the face validity of these examples, we can test the validity of Oscar appeal by relating it to information from other sources (Homburg et al. 2012), specifically three metrics reflecting the estimations of Oscar appeal made by various expert audiences: Academy voters, entertainment journalists, and (in Appendix F) the studios themselves.

We first validate the Oscar appeal metric by using it to predict the number of Oscar nominations. As seen in Table 2, the effect is highly significant, with a slope of almost one. This reflects the fact that the Oscar formula evolves slowly; thus, a film released today has a reasonable likelihood of Oscar nomination if it is similar in various ways (especially genres and keywords) to Oscar-nominated films released over the previous five years. Figure 1 shows a similar pattern through plotting kernel density of Oscar appeal broken out by how many nominations films actually achieved.

---Place Table 2 about here---

---Place Figure 1 about here---

As shown in Figure 1, films with no nominations have a dramatically lower distribution of Oscar appeal. Among films with one or more nominations, the mean Oscar appeal increases along with the actual number of nominations, but at a diminishing rate. The difference in Oscar appeal between films with no nominations and those with at least one nomination is extremely significant, with a *t* value of -22.7 (n=2,919).

We can compare Oscar appeal not only to actual Oscar nominations but also to the prospective views of experts. For this purpose, we compare Oscar appeal to the predictions published in *Entertainment Weekly* (*EW*). This popular magazine annually publishes a list of nomination predictions before the actual nominations are made. *EW* has published these predictions since the 67th Academy Awards (i.e., films released in 1994). During this period we observe 2,278 films. *EW*'s list is broken out by category, but, as with actual nominations, we sum *EW*'s predictions by film and compare the films by Oscar appeal. We find a large

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and statistically significant (t=-24.7) difference in our Oscar appeal measure between films with zero *EW*-predicted nominations and those with at least one *EW*-predicted nomination.

We can also use *EW*'s predictions to compare actual nominations, also-rans, and films that were not even in the running. *EW* typically gives about twice as many predictions as there are actual nominations. The *EW* list usually identifies all the actual nominations, plus a roughly equal number of false positives; we consider the latter to be also-rans. Figure 2 shows a kernel density plot of Oscar appeal for films that were neither predicted by *EW* nor nominated by the Academy, films that *EW* predicted but which failed to be nominated, and films that *EW* accurately predicted would be nominated. Films that were neither nominated nor predicted show a noticeably lower distribution for Oscar appeal. In contrast, the also-ran and nominee curves overlap substantially; nonetheless, the *EW* predictions that did receive nominations have higher average Oscar appeal than the also-ran failed predictions, and the difference is statistically significant, with a t value of -5.6.

---Place Figure 2 about here---

Summary of Oscar Appeal as a Metric

Overall, we see that Oscar appeal can be effectively measured as a continuous variable based on predicted values of previous nominations. The variable primarily measures genres, keywords, and release dates, with additional non-trivial contributions from type of distributor, Oscar track record of the director, and MPAA rating. Using these observables allows us to construct a continuous variable ranking each film along what is otherwise a tacit aesthetic distinction, which (to borrow a line from Justice Stewart) could previously only be described as "I know when I see it."

We validated this Oscar appeal metric by showing that it is associated with actual nominations. Moreover and more tellingly, it is also associated with two measures of expert anticipation. Films flagged by *Entertainment Weekly* as likely nominees have very high levels of Oscar appeal. Likewise, as seen in Appendix F, films with Oscar marketing campaigns in *The Hollywood Reporter* have very high levels of Oscar appeal. In both cases the level of Oscar appeal is especially strong for (but not limited to) those films that were anticipated by experts and then went on to actually receive nominations. Hence, we find support for Hypothesis 2, which suggested that products with traits that are similar to recent prize winners will be more likely to win prizes themselves.

Our Oscar appeal metric accomplishes the difficult task of operationalizing the extent to which artworks conform to the esoteric criteria of artistic gatekeepers, as expressed in their prior consecrations. In constructing this metric, information from string-based thematic content codes was incorporated using an algorithmic solution and the resulting indices, genre and keyword τ_j, proved to have particularly high predictive power. Given the increasing prevalence of string-based datasets thanks to web scraping and digitization, our methodological approach should have manifold potential uses in future sociological inquiry. First, the present study allows for, but does not substantively or theoretically explore, the possibility of temporal shifts in λ_{it} and the regression coefficients used to calculate predicted values. Future research could apply our metric to explore such temporal shifts in order to understand how prize reactivity affects the frequency and prestige of different elements. Second, going beyond film, the algorithm we developed for

calculating λ_{it} could also be used to interpret field-tagged thematic databases from other culture industries, such as All Music Guide and the Music Genome Project. Third, our methodological approach could also be applied to various types of nonmonetary rent-seeking in fields beyond culture.[12]

In the following section, we will treat Oscar appeal as an operational measure of prize-seeking and use it to explore how such a strategy affects financial returns.

ANALYSIS OF FINANCIAL RETURNS

We use financial returns as our key empirical measure of a film's commercial success. Financial returns are significant not just for the income statements of individual producers but also for the long-term composition of fields because rational (or even boundedly rational) financiers will avoid backing strategies that consistently lose money. Thus, in the long run, strategies that have a lower than average expected value will occur less frequently. Note that this reductive *homo oeconomicus* model could hold even if the *artists* either place a nonpecuniary value on prizes or use them as investments to build reputations with pecuniary returns over the long-run (Lincoln 2007). Indeed, it is common for movie stars to work for well below their usual quote fee in order to make films for which they might win prizes. From the financier's perspective, such a film might be inexpensive to make, even if this is only the case because of the implicit subsidy (in the form of an enormous opportunity cost) borne by artistic labor.

To measure financial returns, a film's revenues must be considered in relation to its expenditures, which is why we divide box office by production budget.[13] Our box office data come from studiosystem.com and focus on each film's initial theatrical run, while our production budget data come from IMDb. Both box office and budget follow over-dispersed count distributions. In millions of constant 1983 dollars, box office has a mean of 24.5 and a standard deviation of 32.1, whereas budget has a mean of 18.6 and a standard deviation of 17.4. Moreover, as would be expected in an even approximately efficient market, budget and box office have a reasonably high correlation of .60. The box-office-to-budget ratio has a lower bound of zero (i.e., bombs) and an upper bound asymptotically approaching infinity (i.e., films with tiny budgets but high box office). The box-office-to-budget ratio is highly skewed, with numerous films that made almost no money and a handful of commercially successful but cheap films in the right tail, with the highest value being that of *The Blair Witch Project* (1999), whose box office was 2,314 times greater than its $60,000 budget (in nominal dollars). As is typical for ratios of counts, this variable has an extremely right-skewed distribution. Thus, we take the natural logarithm, for exactly the same reasons as one commonly transforms odds into log-odds. Our dependent variable of log(box office/budget) has a normal distribution (mean of -0.1, standard deviation of 1.3) with no floor or ceiling truncation, which allows us to employ Ordinary Least Squares regression. Finally, note that there are non-trivial levels of missing data for budget. We handle this through casewise deletion in this paper but show in Appendix B that results are robust to multiple imputation.

Using this measure of financial returns as a dependent variable, we investigate Hypotheses 1 and 1A in Table 3. The Oscar appeal variable not only has a substantive interpretation as prize-seeking strategy, but is also intended to capture the selectivity of

Oscar nominations. At this point, the model can be understood to have a quasi-experimental design, such that experiencing the treatment (i.e., Oscar nominations) is random net of the predicted values (i.e., Oscar appeal) (Brand and Xie 2010; Morgan and Winship 2007).[14] Two things follow from this. First, the effect of Oscar nominations net of Oscar appeal can be interpreted as a treatment effect, not a selection effect. Second, the ignorability assumption holds that under such circumstances control variables are superfluous for getting an unbiased estimate of the treatment effect.[15] As such, we have somewhat minimalist models and interpret Oscar appeal as controlling for selectivity to Oscar nominations. It is worth repeating that our measure of Oscar appeal is deliberately based only on information that was knowable before the film's release; thus, the effects of earlier prizes (e.g., the Golden Globes) and other forms of "buzz" are already priced-in to the Oscar appeal effect (to the extent that they were predictable based on the film's strategy) or the Oscar nomination effect (to the extent that they are part of the stochastic component of Oscar buzz). Our regressions include a dummy set for release year, however the results are robust to leaving them out.

---Place Table 3 about here---

In Model 1, we model financial returns as a function of Oscar appeal and Oscar nominations. We apply an inverse hyperbolic sine transformation to nominations, which is comparable to a natural logarithm but is more appropriate for variables with a large number of zeroes (Burbidge et al. 1988). Oscar nominations have a strong positive relationship with financial success, which is consistent with our claim that consumer use of prizes as a judgment device allows the symbolic capital of prizes to be transmuted into economic capital. More interesting is the effect of Oscar appeal. Net of the effect of nominations, Oscar appeal has an appreciable negative effect on financial returns. This finding affirms Hypothesis 1, which posited that returns to prize-seeking are super-normal for winners and subpar for losers.[16]

Model 2 explains financial success only as a function of Oscar appeal. The results show that the effect is now close to zero and drops out of significance. The coefficient has a *t* of .75, so we cannot reject the null at the standard alpha threshold of .05, or even the more lenient .10 cutoff. Since mixed-strategy equilibrium models (like rent dissipation) make a substantive prediction for the null hypothesis (e.g., Chiappori, Levitt, and Groseclose 2002; Walker and Wooders 2001), this substantively tiny and not even marginally significant coefficient can be treated as consistent with the rent dissipation model of prizes proposed in Hypothesis 1A. That is, in equilibrium, the costs of prize-seeking and the risk-adjusted value of a prize balance one another such that the expected value of a prize-seeking strategy is zero. Note that a mixed-strategy equilibrium of rent dissipation assumes reallocation of strategies at the field level whenever a temporary disequilibrium occurs. How this occurs at the micro level is an empirical question we leave to future research, but it should occur even if we assume a certain rigidity in the level of Oscar appeal that a particular artist can plausibly target if we instead imagine reallocations of capital. That is, even if we find it hard to imagine James Ivory directing Anthony Hopkins in a slapstick comedy or Michael Bay directing Megan Fox in an inspiring biopic, we might still find that when the expected value of Oscar appeal is high, Ivory will get more of his films greenlit and when it is low this financing will flow to Bay instead. The rise (in the early 1990s) and

decline (over the last decade) of specialty divisions within the studios resembles such a dynamic at an institutional level.

In this section, we demonstrated that net of achieving Oscar nominations, Oscar appeal has a negative effect on financial returns. In essence, there are two types of high Oscar appeal movies—those that do not receive nominations (and tend to lose money) and those that do receive nominations (and tend to make money)—but taken together these two types of movies are no more nor less profitable than movies with low Oscar appeal. This section has thus affirmed Hypothesis 1 and shown results consistent with Hypothesis 1A. As such, we can conclude that the Oscars follow the structure of a Tullock lottery and they seem to exhibit rent dissipation.

CONCLUSION

In this paper, we have demonstrated how the Oscars shape the reward structure of Hollywood films. We find that appealing to the Oscars is costly in of itself but that actually getting nominations is valuable. Consistent with the dissipation of rents that theory predicts will often occur for Tullock lotteries, the negative net effects of Oscar appeal and the positive effects of Oscar nominations counterbalance on average so that there is no statistically significant zero-order effect of Oscar appeal on financial returns. In order to analyze this dynamic, we operationalized Oscar appeal on the basis of similarity to recent nominees and validated our metric against multiple independent assessments of Oscar-worthiness.

The major theoretical contribution of this paper is to show how prizes can significantly shape the reward structure of markets: it is often the case that a prize provides substantial benefits to those who win it, even as trying to achieve the prize is costly. This means that returns to prize-seeking are bimodal, with prize winners getting the highest economic returns and also-rans experiencing substantial losses. Although similar risky reward structures are well understood in economics, the Tullock lottery literature primarily applies the model to tangible things like monopoly licenses and does not consider how the model also applies to social cognition processes like status shocks from consecration by elite cultural institutions. Conversely, Tullock lotteries are almost unheard of in sociology, although we have a very active literature on judgment devices, market information regimes, and other forms of social cognition. The theoretical synthesis developed here adds to economics that rent-producing resources consist not just of state subsidies or barriers to entry, but also of systematic social processes through which information and prestige are refracted. Sociology, for its part, can be enlightened as to how pursuing legitimacy can involve considerable risk for the actors involved when symbolic capital is mediated through judgment devices.

While our empirical analyses focused on Hollywood and the Oscars, we expect our finding of judgment devices creating Tullock lotteries to generalize whenever three conditions occur. First, the judgment device affects consumer demand. Second, the judgment device involves a categorical distinction between winners and also-rans. Third, the pursuit of the judgment device is costly (where "costs" can consist not only of the direct costs of prize campaigning but also of indirect costs like forfeiting direct mass audience appeal in order to appeal to the taste of elite prize juries).

While we suggested these conditions apply to the Oscars in the film industry, they can also be found in many other cultural fields and beyond. For example, the Tony Awards are a close parallel to the Oscars for theatre, with significant economic benefits for those that get short-listed by the vote of 700 expert judges (Boyle and Chiou 2009). Throughout most of the Anglophone world, the Man Booker Prize is as important to the field of book publishing as the Oscars are to Hollywood (Anand and Jones 2008; English 2005), providing disproportionate benefits to its two to ten finalists selected by a jury of literary critics, writers, academics, and leading public figures (Sutherland 2008). In the field of journalism, prizes such as the World Press Photo Prize and the Pulitzer Prizes provide various benefits to their winners that are selected based on elite criteria by panels of leading experts (Below 2010; Topping 1999). Several arts prizes, such as the Prix de Rome, not only promise publicity but also access to exclusive distribution channels for those chosen as winners by selected members of the respective Academy (White and White 1993). In academic publishing, prestigious prizes and grants may motivate researchers to adopt more risky scientific strategies (Foster, Rzhetsky, and Evans 2013). But our three scope conditions are not only met by prizes in cultural fields; they also apply to many other institutional fields. Corporations compete for design prizes, such as the red dot award, and advertising agencies hope to win creativity prizes, such as the CLIO Award, all of which give increased exposure to a limited set of expert-selected winners while denying such exposure to also-rans (Anand and Watson 2004; Frey 2006).

In addition to prizes, our theory is also generalizable to other types of judgment devices, such as industry certifications. Industry certifications come in various forms, such as certifications for sustainability, reliability, top quality, and so on, which consumers (and intermediaries, like retailers) in many industries take seriously (Rao 1994). It is expensive to pursue such certifications, but the firm can charge a premium if they are achieved. Likewise, tame film content sacrifices audience appeal, but it draws with it categorical certifications that open the film to younger audiences; thus, filmmakers ideally want the most salacious content possible while still getting a "G" or "PG" rating from the MPAA (Waguespack and Sorenson 2011).

Further, it is also instructive to consider our theory's implications for settings where only *some* of the three scope conditions are present. For example, a prize for "most sustainable supply chain in the semiconductor industry" might distinguish winners and losers and diverge from the usual means of appealing to consumers, but it is doubtful that many consumers consider such a prize a salient information source in choosing which brand of RAM to use in a computer upgrade. As such, pursuing such a prize may hurt financial performance for both winners and losers. Similarly, students are clearly sensitive to rankings when choosing a law school, and there are expensive ways for schools to game the rankings (Espeland and Sauder 2007), but the ordinal style of information in a ranking will obviate the sharp risk present in prize-seeking. For example, a law school that narrowly fails to be ranked #28 will still be ranked #29 or #30, a far less detrimental outcome than the lack of any recognition that befalls the also-rans in a prize regime (Sauder 2006). Finally, consider the Billboard Music Awards, which honor chart-topping records. The Billboard Music Awards show makes winners more salient to its primetime network television audience and (unlike the Billboard charts) creates a discontinuity between winners and those who failed to win by a narrow margin. However, it is not costly for a musician to pursue Billboard Awards because they are mechanically allocated on the

basis of market success, meaning that their effect is to reinforce cumulative advantage rather than create a Tullock lottery.

Likewise, we can consider situations where a condition applies to a lesser or greater *extent*. Most obviously, judgment devices can vary in how effectively they structure demand, with some being highly salient to consumers and others less so. For instance, it seems likely that Oscars have a greater effect on attracting film audiences than Emmys do for television audiences. Conversely, goods that are regularly given as gifts can see prizes working as even more salient consumer judgment devices than the Oscars are for film, as with the Newbery Prize for children's books (English 2005, pp. 360-361) or the German "Spiel des Jahres" prize for board games (Woods 2012, p. 50). Similarly, the strength of the costly to pursue criterion may be found in attenuated form, especially when a judgment device is intended to measure popular appeal (or other forms of technical efficacy) but where it is still possible to "game" the criteria. For example, while many of the criteria for selecting the most valuable player (MVP) of the National Basketball Association (NBA) are consistent with technical efficacy considerations, Nutting (2010) finds evidence that feasible contenders show reactivity by adjusting their play to exhibit more aggressive offence in order to increase their chances of winning the award, although doing so may reduce scoring efficiency (Berri, Schmidt, and Brook 2006). Conversely, the aesthetic favored by elite literary prizes is probably more distinct from that of the average fiction reader (and thus more costly to pursue) than the Oscars aesthetic is distinct from that of the average filmgoer.

Ironically, the most interesting condition to treat as a gradational concept is that of sharp discontinuities. One can think of a continuum of how sharply judgment devices draw distinctions, with the extreme case being a prize with a single winner and no runners-up. The Oscars are typical of many entertainment prizes in that they somewhat relax the sharp discontinuity criterion by virtue of recognizing multiple categories as well as both winners and nominees. Even more subtly, rankings and ratings often have prize-like natures. Although we have contrasted prizes to rankings, many rankings involve discontinuities due to finite length or internal demarcations of salience; on these margins, rankings may behave like prizes (Sauder 2006; Sauder and Lancaster 2006). For instance, *The New York Times* Best Seller list is a ranking, but the 35th bestselling novel in the country can describe itself as a "*New York Times* Best Seller," whereas this boast is denied to the country's 36th most popular fiction title. We see evidence of publishers and authors using consultants to game this distinction through such tactics as giving perks to consumers who buy through pre-sales or making temporally-concentrated straw purchases (Trachtenberg 2013). Similarly, Michelin stars are often conceived as a rating, but receiving even a single star is commonly understood as a significant signal of prestige, introducing a sharp demarcation between chefs with and without a star and making chefs very attentive to Michelin inspections (Rao, Monin, and Durand 2003). Our findings thus speak even to rankings and ratings at those discontinuities where they take on a prize-like character. Hence, we may see Tullock-lottery-style effects not only from prizes but also from other judgment devices such as tiered rankings – although presumably in attenuated form if the scope conditions apply only weakly.

Overall, our study opens the door for a new agenda of research aimed at clarifying how various characteristics of judgment devices influence the structure of reward allocation. Ultimately, comparative inquiry into various fields with different types of prizes

could show how the distributions of behaviors and outcomes are structured under different combinations of absent, moderate, or strong forms of each of the three conditions.

So far, we have mainly emphasized the role of prizes for their impact on individual producers. In closing, we consider how prizes may shape entire fields. Information regimes can generally have powerful effects in structuring fields, as seen by the effects of sales charts as compared to those of information regimes institutionalizing social network analysis (Anand and Peterson 2000; Healy 2009; Rossman 2012). We suggest that when our three conditions hold, prizes can shape fields through their effect on the reward structure of different market positions. By creating more favorable conditions for certain market positions, it is reasonable to assume that those prizes that consumers treat as judgment devices lead to more products occupying those market positions. In fact, one of the purposes of many prize-givers is to provide incentives for producers to emulate the prize-winning achievements, lending prestige to those that conform especially strongly with the criteria applied by the prize (English 2005; Goode 1978). Since this paper showed that, net of actual nominations, prize appeal can reduce financial returns, this implies that the possibility of getting prize nominations drives the existence of products with high prize appeal that might otherwise be economically unsustainable to produce. As such, in the counterfactual without the prize we might imagine that fewer products with high prize appeal would exist. Conversely, note that the existence of the prize does not change the reward structure for low prize appeal products. The Tullock lottery structure is compatible with a mixed strategy equilibrium in which some actors play the game and others sit it out.

By creating rewards for prize-seeking while not harming other strategies, prizes can increase the breadth of the field. The role of the Oscars in Hollywood implies that biopics in which the historical protagonist overcomes oppression can coexist with popcorn movies about robots fighting aliens. This contrasts with such continuous judgment devices as rankings and critic ratings, which affect the vast majority of producers *regardless of their current position* (Sauder 2006; Sauder and Espeland 2009). A winery can always ship more cases by getting another point in the Parker guide, and a law school can always attract more numerous and qualified students by moving up a few slots in *US News*. Hence, the field-level effects of continuous and discontinuous judgment devices will differ markedly, with rankings and ratings encouraging isomorphism and prizes promoting diversity—with diversity of cultural products of course being an outcome at the heart of the production of culture tradition (e.g., Lopes 1992; Peterson and Berger 1975). However, this diversity-promoting effect will occur only to the extent that the prizes also meet the costly to pursue criterion, elsewise they will not be characterized by Tullock lotteries but rather by cumulative advantage, promoting isomorphism at the field level by increasing the success of projects that exemplify logics that are already directly rewarded by the mass audience.

In the last generation, sociology has gone beyond a general notion that perceptions are socially constructed to an agenda oriented around studying how specific social institutions refract messy reality into comprehensible judgment devices (e.g., Anand and Peterson 2000; Hsu 2006; Karpik 2010; Zuckerman 1999). This research agenda has shown how the structure of information rewards some actors over others and how such rewards in turn give market information regimes disciplining power or isomorphism (Rossman 2012; Sauder and Espeland 2009; Zuckerman 2000). Our study advances this stream of research by suggesting how the benefits of favorable assessment depend not only on the criteria applied in synthesizing information, but also on the form in which this

information is presented, with categorical information such as prizes having effects that are different in nature from continuous information such as rankings or ratings.

ENDNOTES

[1] "The 2006 Oscar Portfolio" *Variety* Jan 9, 2006, pp. 45-67.

[2] Tullock lotteries are closely related to "all-pay auctions," in which the highest bid always wins. These two forms of exchange differ in that all-pay auctions are deterministic whereas Tullock lotteries are probabilistic.

[3] Although many prizes focus on recent achievements, not all do. Notably, the Nobel Prize is effectively a lifetime achievement award that often honors accomplishments that are a generation past (Zuckerman 1996). Such slow tempo prizes differ non-trivially from the "previous year" prizes assumed by our model, and generalization may or may not apply.

[4] Please see Appendix A for thoughts on alternative models of the film-going experience besides experience goods.

[5] As seen in Appendix D, we discuss the nature of wins and nominations and show that using wins yields similar coefficients.

[6] We chose 1985 as our starting year as this is the point at which box office and budget information began to have decent coverage in our datasets. Moreover, by the mid-1980s, the transition from the post-studio system to the current "blockbuster" era was mostly complete (Baker and Faulkner 1991).

[7] Our Stata code for creating Oscar appeal is available at http://codeandculture.wordpress.com/2013/07/29/oscar-appeal/.

[8] The five-year measure of Oscar appeal that we use throughout the paper is highly robust to alternate time window specifications (and its components, τ_i for genres and keywords). It has a correlation of .91 with a measure based on a three-year window and .97 with a ten-year window.

[9] An additional nine genres are excluded from our analysis because they are not relevant to the paper's universe of relatively recent live-action, theatrical, narrative films. These nine excluded genres are: Animation, Adult (i.e., pornography), Documentary, Film-Noir, Game-Show, News, Reality-TV, Short, and Talk-Show.

[10] Many keywords are assigned by the user community well after a film's release date, which suggests the possibility of endogeneity. However, in an analysis of late 2003 releases, we found no systematic difference between contemporaneous versus ex post keywords, either in general or specifically for nominees.

[11] The distribution is 0 (n=2615), 1 (n=123), 2 (n=71), 3 (n=29), 4 (n=37), 5 (n=31), 6 (n=12), and 7 (n=1). We also experimented with zero-inflated negative binomial regression (with release date as the inflation model), and all results were robust.

[12] For instance, sociologists are intensely interested in different forms of labor tournaments, but the content of "the positional arms race" in these tournaments is often multifaceted, involving such things as time and money spent on training or equipment, various forms of ethical/safety corner-cutting, and the opportunity cost of foregone employment (Frank and Cook 1995). Employing our methods to operationalize "promotion seeking" would allow for interpreting its consequences net of actually rising in the labor tournament. In a similar vein, research in neo-institutionalism aimed at deciphering abstract legitimacy guidelines (Deephouse and Suchman 2008) could create an index of legitimacy-seeking by regressing symbolic performance outcomes on a large corpus of practices.

[13] Ideally we would compare the net present value of all revenue streams (including home video) to total expenditures (including prints and promotion), but such figures are not publicly available. However, domestic box office and production budget are reasonable proxies, of which other forms of expenditures and revenues are usually multiples; thus, it has become conventional to use them in quantitative analysis (e.g., Baker and Faulkner 1991; Hsu 2006; Zuckerman and Kim 2003).

[14] Oscar appeal is analogous to a propensity score but has several differences. Propensity scores are traditionally predicted values of a binary treatment and the propensities are calculated from the same sample that experiences the treatment (Morgan and Winship 2007). In contrast, Oscar appeal is the linear prediction of a count outcome and the coefficients are lagged. Moreover, propensity scores are usually used only to isolate the treatment effect whereas we give a theoretical interpretation to both Oscar appeal (analogous to a propensity) and Oscar nominations (analogous to a treatment).

[15] If a covariate can be understood as a predictor of Oscar nominations, then we included it in calculating Oscar appeal. Conversely, if a covariate is not a good candidate for explaining Oscar nominations, then its inclusion as a predictor of financial returns is superfluous for the purposes of deriving unbiased estimates of Oscar appeal and nominations.

In supplementary analyses included in Appendix E, we show that the results are robust to controlling for a measure of film quality.

[16] The R-squared for these models are low, but this is to be expected given our analytical strategy. As noted earlier, there is a .60 correlation between budget and box office. Our analytical strategy puts this association on the left-hand side and regresses its noise. In a reasonably efficient market one would expect there to be few systematic covariates (i.e., arbitrage opportunities) in a regression of the ratio of revenues to expenses. Moreover, the low R-squared does not imply a lack of power for the finding when one considers that above-the-line Oscar nominations are fairly rare, characterizing only 10% of eligible films.

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TABLE 1: NEGATIVE BINOMIAL REGRESSION OF TOTAL NOMINATIONS

Genres τ_j

    Spline: Minimum to Median   15.576 ***
                                        (2.954)

    Spline: Median to Maximum   1.640 *
                                        (0.640)

Keywords τ_j

    Spline: Minimum to Median   2.636 ***
                                        (0.489)

    Spline: Median to Maximum   0.699 ***
                                        (0.093)

MPAA Rating: R   0.385 **
                                        (0.141)

Prior Nominated Contributors

    Actors   0.259
                                        (0.157)

    Writers   0.070
                                        (0.177)

    Director   0.849 ***
                                        (0.181)

Distributor[a]

    Major   0.107
                                        (0.171)

    "Independent" Division of Major   0.611 **
                                        (0.198)

Release Date

    Spline: 1-180   0.006 *
                                        (0.002)

    Spline: 180-320   0.007 ***
                                        (0.002)

    Spline: 320-366   0.020 **
                                        (0.007)

Constant	-8.557 ***
	(0.634)
Log(Alpha)	
Constant	1.332 ***
	(0.105)
Log-Likelihood	-1230.845

Standard errors in parentheses

N=2919; * p<0.05, ** p<0.01, *** p<0.001

Cases with missing values for budget are dropped

a. The reference category is true independent distributors (e.g., Lionsgate).

TABLE 2: NEGATIVE BINOMIAL REGRESSION OF TOTAL NOMINATIONS

Oscar Appeal	0.878 ***
	(0.047)
Constant	0.034
	(0.097)
Log(Alpha)	
Constant	1.420 ***
	(0.104)
Log-Likelihood	-1255.175

Standard errors in parentheses
N=2919; * p<0.05, ** p<0.01, *** p<0.001
Cases with missing values for budget are dropped

TABLE 3: OLS OF LOGGED RATIO OF BOX OFFICE TO BUDGET

	1	2
Oscar Appeal	-0.045 ***	0.009
	(0.013)	(0.012)
Nominations (Inverse hyperbolic sine)	0.584 ***	
	(0.054)	
Constant	-0.592	-0.340
	(0.915)	(0.933)
R^2	.052	.013

Dummy set for year not shown
Standard errors in parentheses
N=2919; * $p<0.05$, ** $p<0.01$, *** $p<0.001$
Cases with missing values of the dependent variable are dropped

FIGURE 1

Distribution of Oscar Appeal
by Actual Number of Nominations

FIGURE 2

Distribution of Oscar Appeal
by Entertainment Weekly Predictions and Actual Nominations

EW 0, Noms 0 (n=1862)   EW +, Noms 0 (n=191)
EW +, Noms + (n=222)

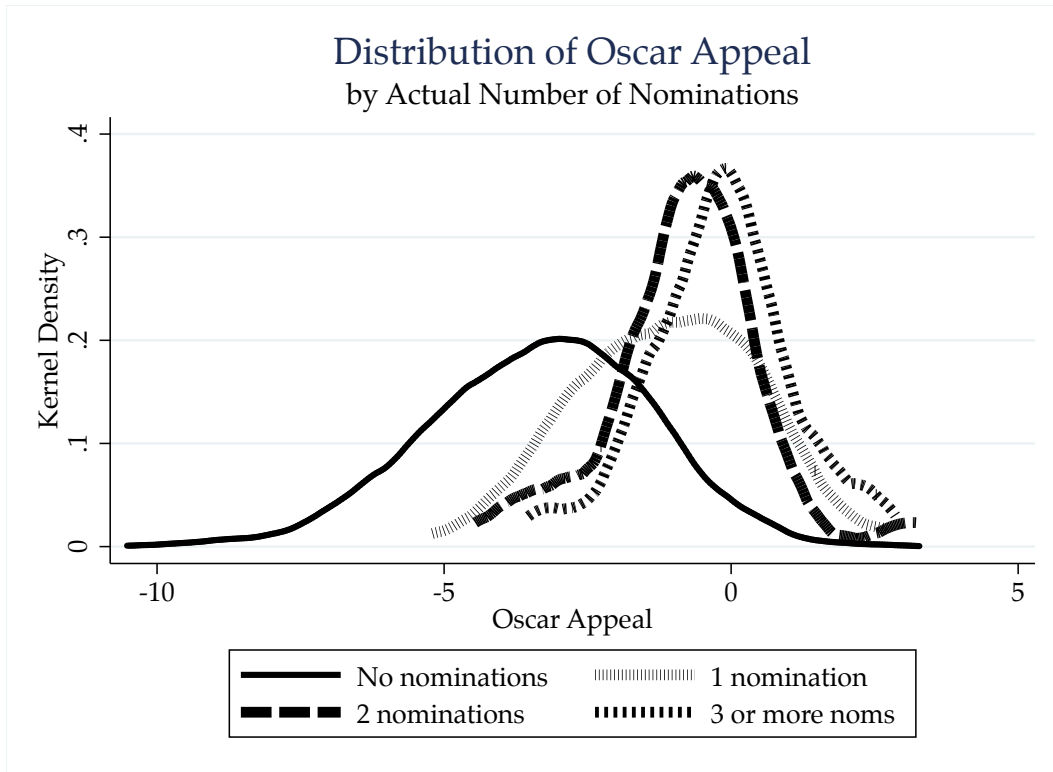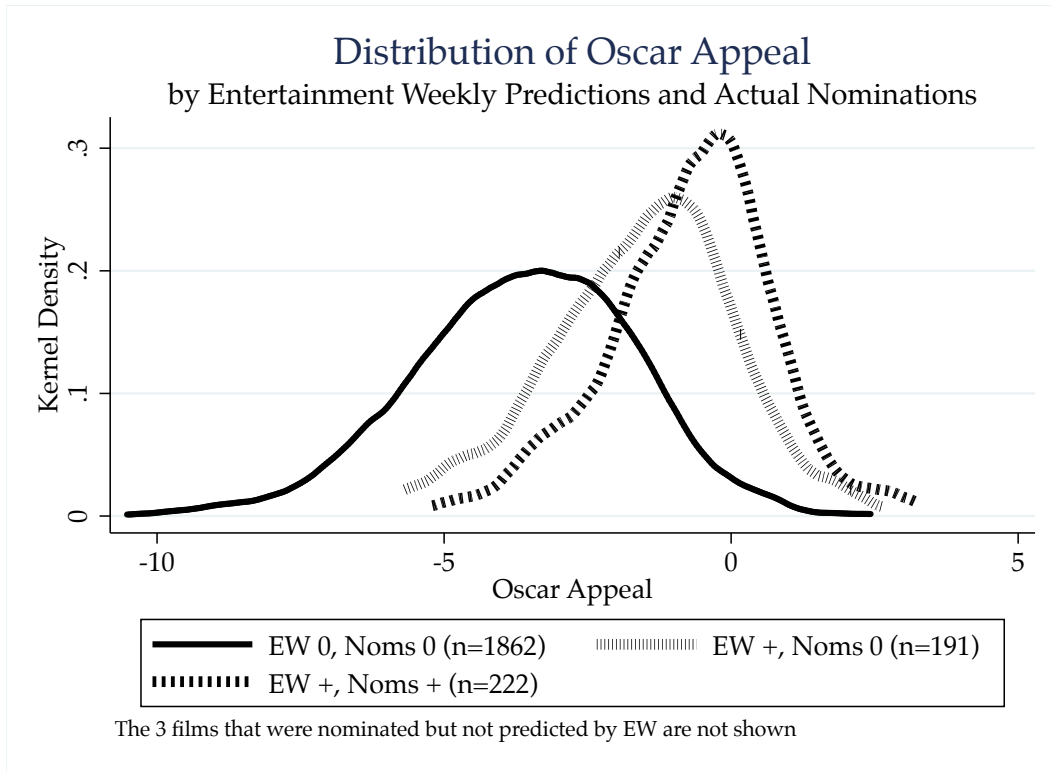The 3 films that were nominated but not predicted by EW are not shown

APPENDICES

Appendix A. Films as Experience Goods versus Credence Goods or Network Externality Goods

In the paper, we discuss films as experience goods, in which a consumer does not observe quality until after purchase. Our argument is also compatible with, but does not require, a more radical interpretation, in which art films (i.e., those with high levels of Oscar appeal) are credence goods (i.e., the consumer does not observe quality even after purchase, but must rely on the judgments of experts to assess quality) (Darby and Karni 1973). This radical interpretation is consistent with conceptions of highbrow art in which the goal of art is not to entertain us (which we are capable of judging for ourselves, at least ex post) but to enlighten or improve us (which may require expert certification). Similarly, art might be most appealing if it is the object of discourse (Adler 1985; Frank and Cook 1995; Lizardo 2006). In this model, prizes could serve as a Schelling point to allow consumers of highbrow art to coordinate on appropriate topics for conversation. That is, art films might be most pleasurable if one can discuss them with others and the prize can be a widely understood signal to see the movie in anticipation of pending conversations. For instance, the pleasure in seeing Oscar-nominated films might be less in the viewing itself than in this being a prerequisite to knowledgably follow, cheer on, and discuss the Oscar race. Regardless of whether we take an experience good, credence good, or network externality interpretation, the judgment device should create demand by obviating uncertainty about the intrinsic (entertainment or enlightenment) quality of the film or by solving the coordination game of artistic discourse. These explanations of the nature of artistic consumption go a good way towards explaining the irony that audiences take cues from judgment devices that are premised on criteria the audience does not find intrinsically appealing or finds to be an excessively risky region of product space in the absence of a judgment device to help navigate it.

Appendix B. Treatment of Missing Data on Budget

Unfortunately, data on budget, and by extension its logged ratio to box office, is missing for 22% of the films in our dataset. In the body of the paper, we use casewise deletion of films with unobserved budgets. Here, we provide an alternate specification in which we use Stata 12's multiple imputation command with an OLS estimator to impute log(box office/budget) as a function of: genre dummies; Oscar track records for the cast, writer, and director; type of distributor; MPAA rating; release date treated as a spline; and (the inverse hyperbolic sine of) major category nominations. As seen in Table A1, the results are similar to those presented in Table 3 in the main body of the paper.

<center>---Place Table A1 about here---</center>

Appendix C. Temporal Variations in the Coefficient Vector Underlying Oscar Appeal

The results shown in Table 1 in the paper are for data pooled across all periods, but we actually define Oscar appeal by performing similar analyses on rolling windows of the preceding five years. Here, we briefly summarize the full set of 25 regressions (from 1980-

1984 through 2004-2008). Most effects are stable over time, with two exceptions. First, genre has powerful effects in all periods but especially dominates the model in later periods. The coefficient for the lower half of the genre spline rises over time, from about 15 in earlier periods to about 21 in later periods. A simple interpretation of this phenomenon is that closure against low status genres grows stronger over time. Second, the major studios did not develop or acquire "independent film" divisions until the early 1990s. Prior to the existence of these divisions, their effect on Oscar nominations cannot be estimated. (Some of these divisions had a prior or subsequent presence as true independent studios, but they are only coded as independent film divisions of major studios during periods when they are actually owned by major studios). These divisions are common enough in order for their effects to be estimated for all the periods beginning with the 1988-1992 window. For these periods, the effect is typically about 0.5 and is almost always higher than the effect of being released by a major studio's core division (an effect that is usually about zero) or being released by a true independent (the reference category). The full set of coefficients for every time window is available from the authors upon request.

Appendix D. Wins versus Nominations

In the paper, we focus on nominations, consistent with how the literature has affirmed the Hollywood cliché that "it is an honor just to be nominated" (Nelson et al. 2001; Rossman, Esparza, and Bonacich 2010). Of course, the Oscars include a further distinction of wins versus nominations. Both nominations and wins are important, but we use nominations because their greater number provides more variance. Broadening the focus beyond the winners is also consistent with Frank and Cook (1995), who note that not only eventual winners, but also those very near to the top tend to achieve disproportionate market shares. The relative scarcity of wins also means that they have less impact on financial return in the aggregate, even though in any given case a win is more valuable than a nomination (Nelson et al. 2001). Likewise, wins come considerably later in the year than nominations, which makes them hard to leverage for box office.

Nonetheless, in this appendix, we consider wins rather than nominations as in the paper. Table A2 parallels Table 1 in the paper and Table A3 parallels Table 3 in the paper. These alternative specifications produce similar coefficient vectors.

---Place Table A2 about here---

---Place Table A3 about here---

Also note that in the conclusion, we discuss the multi-tiered nomination/win nature of the Oscars and similar prizes as a way of relaxing the "sharp distinction" criterion, but one to which the theoretical model of prizes as a Tullock lottery proves robust.

Appendix E. Quality

In the paper, we focused on film strategy (as measured in terms of Oscar appeal). That is, we have taken the perspective of what is knowable about a film at the time it is greenlit rather than of how well it turned out. Obviously, filmmakers and studios would prefer for any given film strategy that the film be well-executed, but this is difficult to know in

advance, and once shooting begins and execution quality information begins to come in, it is too late to cancel the project (Caves 2000, ch. 8).

In this appendix, we relax that assumption and control for a measure of quality: a list of movies given four stars (the top rating) by the film critic Roger Ebert (Ebert 2007), which is available for the films in our dataset that were released between 1985 and 2006. We replicated our Oscar nomination analysis and financial returns analysis while introducing this quality measure, as seen in tables A4 and A5. First, both Oscar appeal and quality strongly predict Oscar nominations, and the effect of the former is only slightly attenuated by including the latter. Second, when controlling for quality, Oscar appeal continues to have a negative effect on financial returns and nominations a positive one. Thus, our hypotheses are robust to controlling for quality.

---Place Table A4 about here---

---Place Table A5 about here---

Appendix F. Oscar Marketing as Validation of the Oscar Appeal Metric

In the paper, we use *Entertainment Weekly* predictions to identify also-rans for Oscars and thereby validate our Oscar appeal metric. Another type of expert prediction comes from studio executives and other Hollywood professionals, as evidenced by their Oscar marketing campaigns. During awards season, studios commonly take out Oscar marketing advertisements in the trade magazines *The Hollywood Reporter* and *Variety*. These ads are primarily intended for Academy members and often feature the phrase "For Your Consideration." It is reasonable to assume that the studios only invest in such ads for films that they feel have plausible chances of achieving Oscar nominations. We use a dataset coded from a sample of awards season ads in *The Hollywood Reporter* and restricted to ads appearing before Oscar nominations were announced (Jaughn 2012). The dataset was sampled from awards seasons corresponding to even-numbered release years from 1986 through 2006. For details see Jaughn (2012). During these years we have a sample size of 1,297 films.

In Figure A1 and the following *t*-tests, we dichotomize the measure and interpret it as we did the *EW* predictions. There is a large and very statistically significant difference ($t = -16.5$) in Oscar appeal between films with and without (sampled) Oscar marketing ads. As with the *EW* picks, we can use this measure to identify also-rans—here defined as films that had Oscar marketing ads but did not actually receive nominations. We find that also-rans are lower in Oscar appeal than advertised films that were actually nominated ($t = -6.4$), but both groups are much higher in Oscar appeal than films that were neither advertised nor nominated. Likewise, as with the *EW* picks, the advertising measure shows more also-rans than surprise nominations, and this ratio is no doubt suppressed by relying on a sample of issues in one trade publication rather than all awards season issues of both trades.

---Place Figure A1 about here---

Besides mere measure validation, the strong association between Oscar appeal and Oscar marketing suggests that the degree of Oscar appeal is subject to producers' agentic choice rather than randomly assigned. The fact that films high in Oscar appeal are also those that receive significant lobbying resources indicates that some producers deliberately pursue an Oscar strategy and thus are reactive to the incentive structure created by the prize.

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TABLE A1: OLS OF LOGGED RATIO OF BOX OFFICE TO BUDGET
(WITH MULTIPLE IMPUTATION)

	1	2
Oscar Appeal	-.0502 ***	-0.001
	(0.012)	(0.012)
Nominations (Inverse hyperbolic sine)	0.606 ***	
	(0.052)	
Constant	-0.498	-0.312
	(0.846)	(0.859)
R^2	.047	.010

Dummy set for year not shown
Standard errors in parentheses
N=3732; * p<0.05, ** p<0.01, *** p<0.001
Multiple imputation for missing values of dependent variable

TABLE A2: NEGATIVE BINOMIAL REGRESSION OF TOTAL WINS

Genres τ_j

Spline: Minimum to Median	14.201 *
	(5.633)
Spline: Median to Maximum	0.744
	(1.087)

Keywords τ_j

Spline: Minimum to Median	3.504 **
	(1.290)
Spline: Median to Maximum	1.017 ***
	(0.159)

MPAA Rating: R	0.536 *
	(0.265)

Prior Nominated Contributors

Actors	0.636 *
	(0.294)
Writers	-0.271
	(0.323)
Director	0.538
	(0.322)

Distributor[a]

Major	0.260
	(0.307)
"Independent" Division of Major	0.788 *
	(0.354)

Release Date

Spline: 1-180	-0.003
	(0.004)
Spline: 180-320	0.009 **
	(0.004)
Spline: 320-366	0.018
	(0.011)

Constant	-10.037	***
	(1.360)	
Log(Alpha)		
Constant	1.861	***
	(0.194)	
Log-Likelihood	-440.103	

Standard errors in parentheses

N=2919; * p<0.05, ** p<0.01, *** p<0.001

Cases with missing values for budget are dropped

a. The reference category is true independent distributors (e.g., Lionsgate).

TABLE A3: OLS OF LOGGED RATIO OF BOX OFFICE TO BUDGET

Oscar Appeal	-0.043 ***
	(0.013)
Nominations (Inverse hyperbolic sine)	0.406 ***
	(0.070)
Wins (Inverse hyperbolic sine)	0.555 ***
	(0.141)
Constant	-0.583
	(0.913)
R^2	.057

Dummy set for year not shown
Standard errors in parentheses
N=2919; * $p<0.05$, ** $p<0.01$, *** $p<0.001$
Cases with missing values of the dependent variable are dropped

TABLE A4: NEGATIVE BINOMIAL REGRESSION OF TOTAL NOMINATIONS, 1985-2006

Oscar Appeal	0.742 ***
	(0.048)
Ebert Four-Star Review	1.665 ***
	(0.172)
Constant	-0.606 ***
	(0.106)
Log(Alpha)	
Constant	1.135 ***
	(0.122)
Log-Likelihood	-1027.914

Standard errors in parentheses
N=2492; * p<0.05, ** p<0.01, *** p<0.001
Cases with missing values for budget are dropped

TABLE A5: OLS OF LOGGED RATIO OF BOX OFFICE TO BUDGET, 1985-2006

Oscar Appeal	-0.055 ***
	(0.014)
Ebert Four-Star Review	0.220 *
	(0.109)
Nominations (Hyperbolic sine)	0.563 ***
	(0.063)
Constant	-0.642
	(0.920)
R^2	.056

Dummy set for year not shown
Standard errors in parentheses
N=2492; * $p<0.05$, ** $p<0.01$, *** $p<0.001$
Cases with missing values of the dependent variable are dropped

FIGURE A1

Distribution of Oscar Appeal
by Oscar Marketing Advertisements and Actual Nominations

Ads 0, Noms 0 (n=969)   Ads +, Noms 0 (n=198)
Ads 0, Noms + (n=27)   Ads +, Noms + (n=103)