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Hsu, Greta

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# Evaluative schemas and the attention of critics in the US film industry

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Greta Hsu

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This article explores the constraints evaluative schemas place on critics' allocation of attention. Prior research suggests that a critic's ability to establish himself as an expert of the market is based on the appeal to a rationalized and defensible system of standards for evaluating products. In this article, I argue that this creates a fundamental bias in the allocation of critical attention such that critics will demonstrate a tendency to favor arenas in which they have developed clear and structured schemas for evaluation. As a result, producers within such categories will receive disproportionately greater critical attention. I test and find support for this hypothesis within the context of the US feature film industry. The implications of this bias in terms of producer legitimacy are discussed.

## 1. Introduction

Several prominent lines of research within organizational theory have called attention to legitimacy as an underlying driver of diverse organizational processes and dynamics. Neo-institutional theorists, for example, propose that organizational actors conform to institutionalized beliefs regarding how organizations should look and behave in order to gain legitimacy and, as a result, valuable resources (Meyer and Rowan, 1977; DiMaggio and Powell, 1983). Researchers interested in the social structuration of markets have demonstrated that perceptions of what is legitimate impact on the opportunities available to organizations (Podolny, 1993, 1994, 1996; Stuart *et al.*, 1999). Organizational ecologists, meanwhile, have focused on the impact of legitimacy at the category or population level. Ecological research finds that the legitimacy audiences' award to organizational populations affects the resources available to population members and, as a result, organizational vital rates (Hannan and Freeman, 1989).

While the importance of legitimacy in shaping organizational dynamics is clearly established, the cognitive processes by which certain types of organizational actors gain legitimacy relative to others remain largely unexplored. As Suchman (1995) observes, legitimacy is a generalized perception created by audiences toward organizations. Audiences, and the beliefs they hold, determine the degree of legitimacy conferred onto categories of organizations. And while researchers have identified a variety of different types of audiences who act as sources of legitimacy (see Ruef and Scott,

1998, for a review), little attention has been paid to the systems of meaning, which establish and maintain differential legitimacy among organizations.

In this article, I examine the role of audiences and their belief systems in conferring legitimacy to markets. I focus, in particular, on critics. In a broad class of markets, institutional gatekeepers such as critics, analysts, and editors significantly influence consumers' perceptions and consumption decisions. Zuckerman (1999: 1400) proposes that gatekeepers in such contexts come to "replace consumers as the primary audience that determines the fate of products." Gatekeepers screen the products offered by organizations, winnowing them into a much smaller number of select goods from which everyday consumers then choose.

In mediated markets, gatekeepers likely play a key role in the differential legitimation of market categories. Gatekeepers control the information available to audiences. Categories or types of organizations that receive greater coverage from gatekeepers will be more salient to audiences and more likely to achieve an established or taken-for-granted status. Conversely, organizations belonging to categories that gatekeepers tend to overlook or ignore are likely to be overlooked by the rest of the market. As a result, what gatekeepers direct attention to both reflects and contributes to what is regarded as legitimate by the broader audience. The differential allocation of critical attention and the factors that shape this are therefore important issues for understanding how certain categories come to be regarded as more legitimate than others.

Prior research has demonstrated that the specific ways in which gatekeepers make sense of and differentiate among producers will have significant effects on competitive dynamics. Zuckerman (1999, 2000), for example, finds that the classification schemas held by financial analysts shape costs of illegitimacy among organizational actors. Zuckerman's research documents a devaluation of firms whose profiles of participation over industries do not conform to the schemas held by financial analysts for sorting firms into reference groups. Non-conforming firms are less likely to receive coverage from the analysts who specialize in the industries included in a firm's profile. Such lack of coverage is due to the difficulty encountered by analysts in comprehending and evaluating such firms; lack of coverage by analysts reduces their attractiveness to investors and impairs their stock market returns accordingly.

Zuckerman's study explored the implications of non-conformity with categories already legitimated in gatekeepers' minds. A complementary issue, which is the focus of this paper, is the differential legitimation of categories itself—how do critics' belief systems shape which market categories gain greater recognition and legitimacy relative to others?

Previous research has proposed a number of factors constraining gatekeepers' coverage patterns. For example, Rao *et al.* (2001) suggest that environmental uncertainty may push securities analysts to rely on social proof (i.e., the coverage of their peers) as a heuristic for judging how to allocate attention. And, in their model of the rise and fall of social problems, Hilgartner and Bosk (1988) propose a number of cultural and political constraints affecting the selection of particular problems for coverage in the

media, including general cultural pre-occupations, political biases, the need for drama and novelty, and the danger of saturation.

Such work highlights the demands or constraints that shape gatekeepers' behavior in characteristic ways. In a similar vein, I propose that critics will be constrained by the structural properties of the belief systems they construct and rely upon to evaluate quality for different categories of goods. I argue that gatekeepers seek to justify their contribution as market intermediaries. Since they are best able to do so when they have developed well-structured and coherent schemas for discriminating quality, gatekeepers are expected to devote greater coverage to market categories for which they have developed more coherent schemas for evaluation.

I assess the underlying structural properties of the schemas critics develop for the evaluation of different categories of films through a formal, semantic-based methodology. This focus on analyzing and unpacking belief systems is congruent with recent work studying systems of meaning underlying organizational fields (see Hsu and Hannan, 2005, or Mohr, 1998, for a review). For example, Ruef (1999, 2000) uses semantic-based analysis of the discourse of healthcare professionals to identify the primary dimensions underlying form distinctions among healthcare organizations. This information is then used to explore how the distribution of organizations along such dimensions affects the emergence of new organizational forms. Mohr and Duquenne (1997) measure the degree of institutionalization within the social welfare sector, using Galois lattices to analyze levels of structural congruence between meanings and practices. Such methods aim to develop greater analytical specificity of how belief systems shape social organization and behavior among market and organizational actors.

To test the propositions in this study, I focus on the schemas and coverage patterns of critics in the US feature film industry. More specifically, I analyze discourse in reviews by film critics at the *Chicago Sun-Times* and *New York Times* (NYT) to infer the structural properties of the belief systems these critics rely on to evaluate quality for different genres of film. I then relate these properties to subsequent coverage choices by critics at these periodicals. The main proposition that I test is that films (and thus filmmakers) within categories that are highly structured in critics' minds are more likely to be awarded coverage. This effect is interpreted in light of the different organizational constraints that film critics at the different periodicals studied are subject to. In the discussion, I consider how the relationships found among these critics can be extended to understand an important process in the differential legitimization of categories in mediated markets.

## 2. The role of the critic

To help develop my argument, I first discuss the critical act itself. A fundamental goal of a critic is to establish the standards by which value judgments can be made (Becker,

1984; Greenfeld, 1989; White and White, 1992; Shrum, 1996; Hsu and Podolny, 2005). Through their evaluations, critics offer principles for the comparison and ranking of objects relative to one another in terms of value. Directly or indirectly, they promote particular criteria by which justifiable value distinctions can be made, while glossing over or downplaying potential others. The result is the establishment and promotion of a particular schema for value discrimination—a framework intended to guide the evaluations of others in the market.

Seen from this perspective, quality is not something that arises automatically from the inherent characteristics of objects, but rather something that is externally imposed. Standards for quality must be constructed and reified through the discussions and writings of actors such as producers, consumers, and critics (Becker, 1984; Shrum, 1996). Through discourse, actors establish and promote their own schemas for discriminating goods in terms of quality. And so it is largely through discourse that the exchange and interaction of notions of quality takes place. Locally created schemas for quality are proffered and interact with—clashing against, weaving together with, perhaps even consuming—other schemas for quality. In the midst of this, the critic struggles for broader acceptance of his own terms of evaluation. If successful in persuading others as to the validity and authority of his particular standards, he will have established and legitimated his position as an important mediator to the market at large.

A critic's ability to establish himself as an expert of the market is thus based on his ability to justify the merit of the criteria he offers for discriminating value. Moreover, work by Shrum (1996) on the role of critics in high and popular art suggests that justification of a critic's interpretations of quality is based on the appeal to principled and organized standards of evaluation. Reference to clear standards validates the transfer of knowledge embodied in critical judgments. Applying clear rule-based knowledge eliminates perceptions of subjectivity on the part of the critic. Rather than simply being the result of personal tastes, an evaluation that is principled appeals to logic and reason and can claim objectivity. Thus, with a coherent and well-structured schema of evaluation, a critic has a concrete basis for making and defending claims regarding the value of a particular good. This, in turn, establishes his presence and contribution to the market at large.

If the evaluative schemas critics set forth are accepted by other types of actors in the market, such schemas have the power to provide stability to the market by channeling perceptions and actions in predictable ways (Becker, 1984). In such situations, critical attention can have a marked impact on producer success. A number of studies have documented the impact of critical coverage in such mediated markets. In capital markets, Zuckerman (1999) finds that organizations that fail to attract the attention of securities analysts suffer in terms of valuation. Research within the field of marketing similarly suggests that critics play an important role in consumer decision-making in cultural industries such as book publishing, theater and performance arts, and recorded music (Litman, 1983; Eliashberg and Shugan, 1997; Greco, 1997; Holbrook, 1999; Caves, 2000; Basuroy *et al.*, 2003).

In sum, a fundamental goal of a critic is to construct and promote schemas of evaluation that are regarded as justifiable by others in the market. And this justification can be attained through the creation of a principled, and thus defensible, ideology of standards. But here is where a fundamental bias in critics' coverage patterns is introduced. In their struggle to establish themselves as market experts, critics are likely to become constrained in their future coverage decisions by the degree to which they have already been successful in developing justifiable standards for particular categories of goods. Clearly, among different types of categories, the evaluative schemas critics construct can differ considerably in the degree to which the rules within them have been organized into a clear and principled set (Greenfeld, 1989). Variation among categories in the coherence of evaluative schemas is expected to affect the degree to which critics will attend to goods within those categories. Critics are likely to be attracted to arenas in which they have already been successful in establishing coherent schemas for evaluation. It is in such contexts that they are best able to justify the validity of their particular schemas and thus their claims regarding the value of goods.

Simmel (1907) alludes to a similar principle in his discussion of the bases of economic value. Simmel holds that objects need "a certain comprehensiveness, frequency and permanence" for actors to be able to establish a value for them. Of course, since value is also determined by relative scarcity, this suggests that actors value objects that are within reach (i.e., cognitively comprehensible and instrumentally attainable), but not too close or easily obtainable.

Powell (1985) also suggests a similar dynamic in his discussion of the processes by which book publishing editors winnow down the vast number of manuscripts encountered into a much smaller set, which will then be considered seriously for sponsorship. In his ethnographic study of editors in scholarly publishing houses, Powell observes that a manuscript's likelihood of being published is affected by the difficulty an editor encounters in evaluating the quality of that manuscript. Editors are reluctant to deal with manuscripts that they do not feel competent in evaluating. Dense, complex books are thus less likely to be published, not only because they are perceived as less commercially viable but also because editors do not feel capable of tackling the difficult material within them. In a similar vein, I suggest that critics are likely to avoid offerings from categories in which they have not developed coherent schemas for evaluation because they will feel less confident in their ability to make and defend claims regarding quality in these arenas.

In summary, critics are expected to have a greater preference for evaluating offerings from categories for which they hold more coherent schemas of evaluation. Therefore, producers belonging to such categories will be more likely to gain critical coverage.

*H1: Producers in categories that are highly structured in critics' minds are more likely to be awarded critical attention.*

While this general relationship is expected to apply to all critics, the extent to which it manifests among specific critics is likely to depend on the selectivity required by

organizational resource constraints. Hilgartner and Bosk (1988) propose that the carrying capacities of gatekeeping organizations influence coverage patterns. In the realm of social problems, they observe that different types of gatekeepers have different carrying capacities that dictate the number of social problems that can be covered at a given point in time. For example, daily newspapers may have greater capacity to cover social issues relative to weekly magazines or television news programs. A smaller carrying capacity suggests that the competition for attention among social problems will be more intense, enhancing the impact of particular selection criteria.

Within the realm of cultural critics, Shrum (1996) observes variance in newspapers' capacity for cultural gatekeeping activities along a number of dimensions, including the number of critics employed, whether critics are full- or part-time, and the extent to which critics specialize in a particular art field or generalize across multiple fields. Location along such dimensions can be expected to vary with newspaper characteristics such as organizational size, geographical orientation, and degree of generalism across news areas. A smaller carrying capacity for a critics' field is expected to increase the effect of schema coherence on coverage decisions.

The particular outlets that I examine in this article (the *NYT* and the *Chicago Sun-Times*) are both nationally circulated periodicals with prominent full-time film critics. However, the carrying capacity of these periodicals differ—the *NYT* critics cover almost all of the films released to domestic theaters, while the percentage the *Chicago Sun-Times* covers is significantly lower. This difference likely corresponds to differences in the primary metropolitan area of each periodical, focus placed on cultural news and reviews by their larger organizations, as well as the time and space constraints placed on film staff. Because *NYT* critics cover almost all of the films released to theaters, the degree to which evaluative schema coherence influences film selection is expected to be weaker for the *NYT* relative to the *Chicago Sun-Times*.

In addition to individual organization attributes, material influences such as the level of advertising for an offering and the size of its targeted audience may influence critics' coverage decisions, as might social factors such as a producer's status or network ties. Such factors are important to take into account in models predicting critical attention patterns. They also may play a more fundamental role in this story since such factors work to entice critics to review films from less coherent categories. Without this influence, critics would be expected to only review films that they can easily and comfortably review, leading to equality in schema coherence. The effect of key material and social factors on critics' coverage decisions likely contributes to the development of differential schema coherence over time.

### **3. Critics in the US film industry**

Within the US film industry, professional critics are often thought to exert significant influence over consumer decisions (Wyatt and Badger, 1984; Eliashberg and Shugan,

1997; Holbrook, 1999; Basuroy *et al.*, 2003). In support of this, researchers have documented a positive relationship between favorable critical reviews and theatrical revenues (Litman, 1983; Wallace *et al.*, 1993; Prag and Casavant, 1994; Sochay, 1994; Sawhney and Eliashberg, 1996; Litman and Ahn, 1998). To be sure, there is some debate over whether this relationship is associative rather causal (Eliashberg and Shugan, 1997). The crucial issue for this study, however, is not that favorable critical reviews lead to greater consumer demand, but that critical reviews are an important venue for the dissemination of information about films (Ravid, 1999). While consumers may not necessarily use the quality assessments made about films by critics to guide their decisions, they often rely on critical reviews to gain information about films to help them make their consumption decisions (Austin, 1983). Thus, controlling for other factors such as budget size and breadth of opening release, a film that gains greater critical coverage will be more available and familiar to film audiences relative to one that does not.

This industry would also appear to be a prime venue for studying how concerns with establishing expertise shape the amount of attention critics devote to different product categories. Despite acknowledgment of their importance by film industry insiders and scholars, film critics continue to be concerned with their own legitimacy. This concern is clearly evinced in the following quote by Roger Ebert, main film critic for the *Chicago Sun-Times*. In this quote, Ebert reacts to the appointment of A.O. Scott, a book critic for *Newsday*, to the position of lead film critic for the *NYT*. This choice upset Ebert, who viewed the appointment of a book critic to this prestigious position as evidence of the disrespect that many newspaper editors hold for film critics:

Would [the Times editors] hire a book critic to be their music critic? Architecture critic? No, but that goes without saying. They probably believe, like many other editors, that anyone can be the film critic. It is the only job on the newspaper that everyone, including the editors, believe they can do better than the person on the beat. (Elder, 1999)

Such concerns are expected to push critics to attend more to films from categories for which they hold more coherent schemas for evaluation. The market categories, in this context, are film genres. Genres are commonly used by actors within the film industry as well as by the film-going audience in classifying films. As Abrams *et al.* (2001: 174) observe, “[t]he use of genres within the film industry is so common that we usually do not question their function. We tend to use genre categorizations without being aware of them. Video stores physically divide up space through classifying videos by genre, and film promotional campaigns, whether trailers in cinemas, adverts on television or posters on billboards, often explicitly refer to a film’s genre and at least implicitly indicate what type of film it is.” In support of the notion that genre-based distinctions play an important role in the perceptions and consumption decisions of the film-going audience, a number of studies have found significant differences by genre in the financial success of films (Litman, 1983; Litman and Kohl, 1989; Prag and Casavant, 1994; Sochay, 1994; De Silva, 1998; Neelamegham and Chintagunta, 1999).



The argument advanced in this paper is that differences in attention patterns by genre can be explained to a significant degree by the coherence of the schemas that critics hold for particular genres. Critics are expected to award greater attention to those categories for which they have developed more coherent schemas of evaluation. Accordingly, the following analyses explore the extent to which member in a genre that is highly coherent in each critic's mind increases the likelihood that the film will be reviewed.

## 4. Measures and models

### 4.1 Data

I gathered data regarding all films produced in the United States from 1996 to 2001 from *The Internet Movie Database* (IMDB, <http://www.imdb.com>), an online database listing movie credits and other descriptive information. Critical evaluations of films were gathered from the *NYT* and the *Chicago Sun-Times* and classified according to genre using film genre information from IMDB.

Reviews from the *NYT* were gathered through *Lexis-Nexis Universe* (<http://www.lexis-nexis.com/universe/>), while reviews from the *Sun-Times* were gathered through its corporate website (<http://www.suntimes.com>). At the *Chicago Sun-Times*, one critic handled the great majority of reviews during the period under review—Roger Ebert. Not surprisingly, the allocation of film reviews was extremely hierarchical at this paper. As a respondent from the *Sun-Times* stated, “Roger reviews whatever movies he wants to. When he is not interested in reviewing a particular movie or doesn't feel like he has time to review it, he will assign it to one of the other critics to do.”<sup>1</sup> The nature of review assignment at this periodical suggests that it is more appropriate to focus on Roger Ebert's individual coverage patterns rather than the coverage patterns of the *Sun-Times* critics as a group when assessing the factors affecting critics' coverage choices.

The situation was quite different at the *NYT*. While Ebert reviewed 71% of US-produced films released to domestic theaters between 1996 and 2001, the most prolific *NYT* reviewer (Janet Maslin) reviewed less than 27%. A more informal decision-making process accompanied this more evenly distributed workload. As A.O. Scott, a lead critic for the *NYT*, describes, “Well, basically we pick the [films] that we want to review. When more than one critic wants to review a movie, we usually work it out pretty informally.... [We] talk about what we want to do with each other and decide for ourselves.”<sup>2</sup> While it seems that individual *NYT* critics have a considerable amount of

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<sup>1</sup>Quote from phone interview conducted by author with respondent from the office of the *Sun-Times* entertainment section, August 16, 2003.

<sup>2</sup>Quote from phone interview conducted by author with A.O. Scott, September 3, 2003.

control over which movies they will review, some coverage decisions must be negotiated among critics. This suggests that it would be appropriate to analyze attention patterns for the *NYT* critics as a collective group. Accordingly, my analyses concern whether or not a film receives attention from any one of the *NYT* film critics.

The likelihood that a film was reviewed by each set of critics is estimated through a series of logit regression models. In these models, each observation consists of an individual film, and the dependent variable is assigned a value of one if the film was reviewed.

#### 4.2 *Measuring schema coherence*

The main covariate of interest (“coherence score”) is the coherence of the evaluative schema each set of critics holds for a film’s genre. I measure schema coherence for different genres through semantic analysis of critical discourse regarding the films most recently released prior to 1996 from those genres. As Shrum (1996) observes, the schemas that critics create for the evaluation of quality are established and reinforced through the discourse of their reviews.

To measure systematic differences in the structure of different evaluative schemas, I use a methodology developed by and described in greater detail in Hsu and Podolny (2005). The basic premise of this method is that the language an individual uses to interpret and evaluate an object reflects his cognitive representation of the category within which the object resides (Berger and Luckman, 1966; Edelman, 1977; Carley, 1986a, b; Swidler, 1986; Franzosi, 1990). I therefore analyze the words used in evaluations of individual films to assess the schemas actors hold for the genres to which the films belong. I focus, in particular, on the adjectives used by critics in their film reviews.

Adjectives are key instruments for evaluating beliefs regarding a category. The main purpose of an adjective is to “denote a quality of the thing named, to indicate its quantity or extent, or to specify a thing as distinct from something else” (Merriam-Webster’s Collegiate® Dictionary, 2001). It is, in essence, used for the modification or elaboration of meaning. Because of their descriptive purpose, adjectives play an important role in interpreting and evaluating objects. The structure of this word class also provides a clear and intuitive way to understand relationships among the words used by an individual for a particular category. Relationships among adjectives can be characterized by the degree to which they share synonyms—to the extent that two adjectives share the same synonyms, they can be regarded as closely related, or similar, to one another.<sup>3</sup>

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<sup>3</sup>This semantic-based approach to assessing relationships among attributes rests on the notion that relationships between attributes may exist by virtue of purely semantic considerations (D’Andrade, 1965). Smith *et al.* (1974) suggest, for example, that judges do not necessarily infer an honest person to be trustworthy because they witness a frequent co-occurrence of honesty and trustworthiness in people, but rather because these two words have similar semantic features.

The basic goal of this method is to represent the overall organization of meaning among the adjectives used by critics to interpret films within each genre. To collect adjectives, I focused on the most recently reviewed films from each of the genres. For the *NYT*, I analyzed the last eight films reviewed prior to 1996 within each genre.<sup>4</sup> For Ebert, I only used information regarding the last four films reviewed prior to 1996 because a smaller sample of films was available.<sup>5</sup> Genre coherence scores were generated for the following 12 genres: action, adventure, comedy, crime, documentary, drama, horror, musical, mystery, romance, thriller, and western. For other genres, there were an insufficient number of films reviewed in those categories for reliable estimation of the structural properties of their evaluative schemas. The genres of musical and mystery are included in the analyses for the *NYT* but not for Ebert since there were an insufficient number of films reviewed by Ebert for these genres.

I extracted the adjectives from the texts of each set of reviews using a rule-based part-of-speech tagger (Brill, 1993).<sup>6</sup> For each film review, I placed each of the words identified as an adjective by the part-of-speech tagger in the list of adjectives for that film's genre. In this way, adjectives within films reviews were aggregated at the genre level.<sup>7</sup>

Once these lists were constructed, I collected the synonyms of each of the adjectives in the lists using an online version of Webster's thesaurus. This information was then used to assess relationships between adjectives by measuring the amount of synonym overlap between every possible pair of adjectives in this list. By measuring similarity between each pair of adjectives in a category's schema, I could then assess the overall organization of adjectives within the schema.

To do this, I created an adjective-by-adjective matrix with synonym-overlap scores for each genre. If there are  $N$  adjectives in a genre list, synonym overlap would be represented through an  $N \times N$  matrix, where cell  $i, j$  denotes the synonym overlap of adjectives  $i$  and  $j$ . Adjectives  $i$  and  $j$  are regarded as similar in meaning to the extent that row  $i$  and row  $j$  in this matrix have a similar pattern of synonym overlap with all the other adjectives in the matrix.

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<sup>4</sup>When there were more than eight films released in a year, I randomly sampled eight films from that year.

<sup>5</sup>Reviews written by Ebert dating back to 1985 were available from the *Sun-Times* website. For one of the genres (romance), Ebert only reviewed four films between 1985 and 1995. I therefore analyzed the last four films reviewed in each genre to assess Ebert's schema coherence scores.

<sup>6</sup>The basic purpose of part of speech taggers is to assign tags to words that reflect their syntactic category. The particular tagger used in these analyses performs this task through two stages. Initially, every word is assigned its most likely tag in isolation. To do so, the program refers to a tagged training corpus, which has a lexical entry consisting of a partially ordered list of tags that indicate the most likely tag for each word in the corpus. Next, contextual transformations are performed in order to improve the accuracy of this assignment.

<sup>7</sup>Only adjectives from reviews of "pure" genre films—those classified as belonging to a single genre—were used in the construction of these genre-level lists.

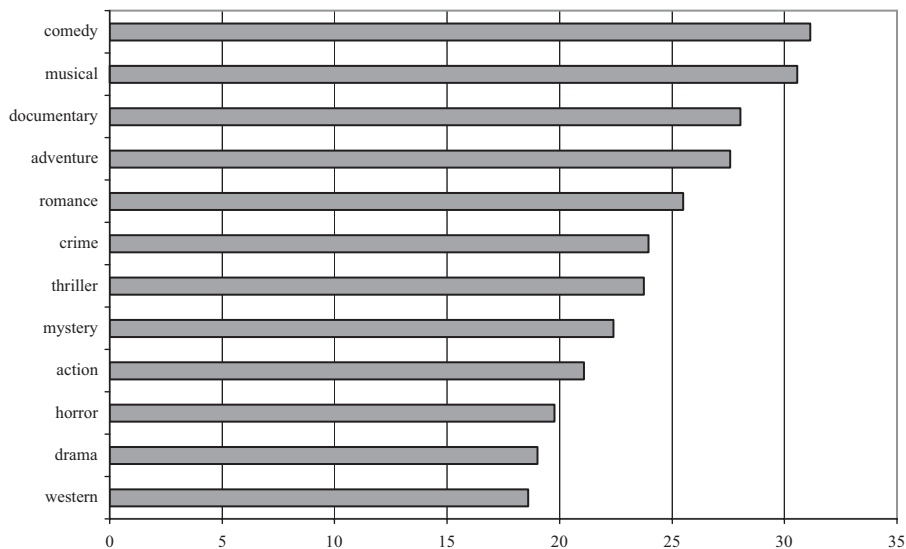
Cluster analytic techniques were then used to identify and group together adjectives with similar patterns of synonym overlap. In order to compare across different sets of adjectives in a concise manner, I assess the degree to which the clustering method effectively captures the natural distribution of each set of adjectives at a pre-specified number of clusters and compare this across the different categories.<sup>8</sup> Determining how many clusters to use for the pre-specified cluster number is an important issue. One reasonable approach to determining this value is to identify the optimal cluster number for each distribution within a set and then to specify the cluster level at the lowest of these numbers. This is a concise method for capturing variation among the different categories in the degree to which the different schemas are organized in a clear and coherent manner.<sup>9</sup>

The variances explained reflect the overall structure and coherence of meaning among the different adjectives in the category's list. The greater the variance explained by this pre-specified number of clusters, the more clear and well developed the structure of the category's descriptors. Put differently, if this relatively low number of clusters can explain a high percentage of the total variance among the category's descriptors, these descriptors are related to one another in a relatively clear and straightforward manner. Genres that have a greater amount of variance captured by the cluster solution are thus presumed to have a more coherent set of standards against which the quality of films is evaluated. On the opposite extreme, if there is relatively little variance explained by the cluster solution, there is little organization to the overall structure of adjectives within a schema. In this case, there are no clear rubrics for evaluation and, thus, a large amount of ambiguity as to the merits of that particular schema for evaluation.

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<sup>8</sup>For the cluster analyses, I used clustering algorithms available through SAS (SAS Institute Inc., 1989). In the initial step of the cluster analysis, I drew on Ward's clustering algorithm to determine cluster centers. To determine what the most similar pair of clusters are, Ward uses the criterion of minimization of the sum of squared Euclidean distances between every point in a cluster and their group mean for partitioning. This criterion offers a particularly direct means for assessing cluster profiles since the variance explained by each partition is simply the ratio of between-cluster sum of squares to total sum of squared distances. Results from clustering through Ward's (1963) hierarchical clustering method were then used to provide initial starting seeds for PROC FASTCLUS, SAS's version of MacQueen's (1967) k-means clustering algorithm, which implements the sum of squares criterion when constructing clusters. This technique of using the results from a hierarchical clustering to inform the initial starting positions for k-means has been shown to result in superior recovery of data structures when compared to the performance of other partitioning and hierarchical methods (Milligan, 1980).

<sup>9</sup>There exist a variety of methods for identifying the number of clusters that most appropriately represent the underlying data. These so-called "stopping rules" typically evaluate some measure of the goodness of a cluster solution and identify the number for which this measure is optimized (Gordon, 1999). In a review of more than 30 stopping rules, Milligan and Cooper (1985) found Calinski and Harabasz's (1974) pseudo  $F$  statistic and Sarle's (1983) cubic clustering criterion to be two of the more effective for assessing the number of clusters present in a set of simulated data.

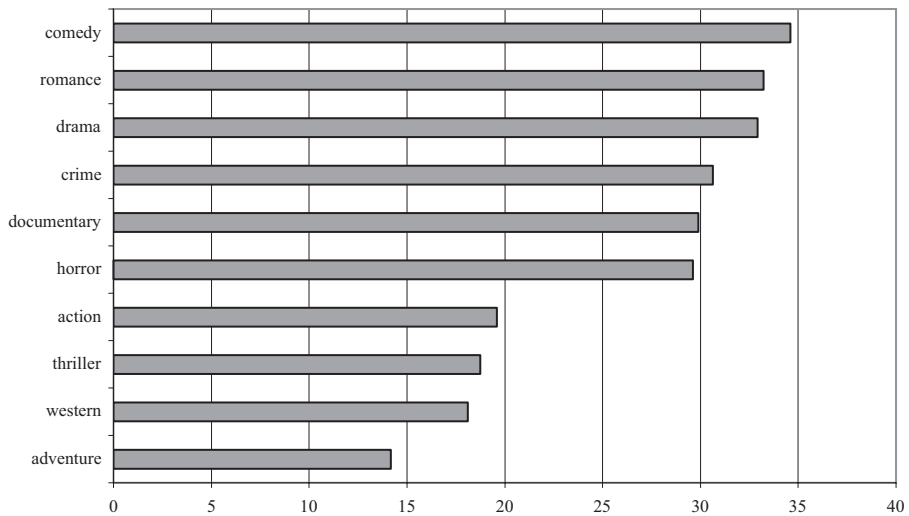


**Figure 1** Genre coherence scores for *NYT* critics.

Figure 1 shows the distribution of genres for the *NYT* critics along an axis representing the percent variance explained at the specified cluster number. For this set of data, the lowest optimal cluster number was eight.

Figure 1 shows that the comedy and musical genres have the highest amount of variance explained by the eight-cluster solution. This is perhaps not surprising, given that these are generally regarded as “lighter” or “fluffier” genres, and can be expected to have relatively simple and clear sets of standards against which quality is evaluated. Somewhat unexpectedly, documentaries are also located high in this figure. One explanation for this is that film documentaries are typically portrayed as journalistic records of some event, person, or place. Therefore, the quality of a documentary is mainly judged by the extent to which it appears to be a truthful and original depiction of a socially relevant subject. Quality for a documentary film, therefore, may be relatively simple and coherent compared to quality for genres with more elaborately developed styles and narrative structures. At the very least, there is no reason to expect films within the documentary genre to be judged by criteria that are any more complex than, for example, a fictional narrative genre such as adventure or thriller.

At the opposite extreme, I find that western films have the lowest amount of variance explained. Within the genre of westerns, there has been a recent influx of films challenging the idealism and heroism, which has traditionally embodied the classic Western film (Dancyger and Rush, 2002). The incorporation of subversive elements into what may have traditionally been a relatively simple genre has undoubtedly resulted in less coherence in the genre as a whole.



**Figure 2** Genre coherence scores for Roger Ebert.

Figure 2 shows the distribution of genre variance scores for Roger Ebert. For this set of data, the lowest optimal cluster number was six. Some clear similarities can be found between the *NYT* and Ebert's coherence rankings. For example, I find that for both *NYT* and Ebert, the genre of comedy has the highest amount of variance explained, while the western genre has one of the least. I also find that genres such as crime, thriller, and action are located somewhat in the middle of the pack in both sets of coherence rankings.

Some differences between the two can be noted, however. For example, drama for Ebert is one of the more coherent genres, while for the *NYT* critics it is one of the least. And while adventure for the *NYT* critics is relatively high in coherence, it is the least coherent genre for Ebert. One implication of proposition that critics will allocate greater attention to genres they hold more coherent schemas for is that such differences should correspond roughly to differences in schema coherence. For example, it is likely that Ebert will allocate more attention to dramas relative to the *NYT*, while *NYT* critics will be more inclined to review adventure films relative to Ebert. Of course, given that *NYT* critics review almost all the films in the sample, these distinctions are likely to be muted.

For Ebert, however, some examples suggest that the predicted relationship between schema coherence and probability of review will hold. Genres that were low in terms of coherence for Ebert include adventure, thriller, and horror. From each of these genres, there are examples of films whose material characteristics suggest that they should have been reviewed but were instead overlooked. For example, the adventure film *Wild America* (1997) was distributed by Warner Bros., opened on over 1800 screens, and was reviewed by a number of other major periodicals, including *USA*

*Today*, *Detroit News*, *Globe and Mail*, *Los Angeles Times*, *San Francisco Chronicle*, *New York Times*, *Washington Post*, and *Houston Chronicle*. Similarly, *The Fan* (1996), which had a budget of \$55 million, opened on over 2000 sites, was distributed by Columbia Tri-Star, and starred well-known actors Robert DeNiro and Wesley Snipes, was overlooked. Ebert also refrained from reviewing the horror films *Jeepers Creepers* (2001), which opened on over 2900 screens, had a budget of \$10 million and was distributed by MGM/UA. Each of these films was deemed worthy of coverage by a number of other major periodicals.

Conversely, there were also a number of films that Ebert chose to review whose material characteristics made critical coverage to be unlikely. In these cases, it is also likely that schema coherence came into play. For example, Ebert reviewed a number of films within his most coherent genres that opened on three or fewer screens, had small budgets, and were not distributed by a major studio. Examples include the films *I'm Not Rappaport* (1996, comedy), *Wet Hot American Summer* (2001, comedy), *Telling Lies in America* (1997, drama), *Windhorse* (1998, drama), *Slam* (1998, drama), *Broken Vessels* (1998, drama), *Pups* (1999, drama), and *Swimming* (2000, drama). Such cases are suggestive of the general relationship predicted between schema coherence and likelihood of review.

### 4.3 Additional covariates

As described earlier, the lists of adjectives used in the cluster analyses were collected from a sample of reviews from each of the genres. While the number of reviews used in each sample was the same for each set of critics, the length of the adjective lists generated from these reviews varied across the different genres. Given such differences, it may be misleading to simply compare the explanatory power of a specific number of clusters across the different genres. To control for the possibility that differences in the length of the adjective lists for each genre may create a spurious effect of schema coherence on coverage patterns, I include a variable measuring the number of adjectives in each genre list as a covariate in the regression models.

In addition, for the *NYT* critics, I included a variable measuring the number of critics who reviewed the films that were used to generate schema coherence scores for each of the genres. For each genre, there were at least two different *NYT* critics whose reviews were among the eight collected for each genre (which represented the most recently reviewed films prior to 1996). It is possible the number of critics who reviewed a genre's films may be related to its coherence score. For example, it may be the case that a greater number of critics results in a lower coherence score. Although I do not find a significant correlation between the number of critics and coherence score ( $P > 0.10$ ), I include a variable measuring the number of critics per genre in the *NYT* regressions in order to control for any influence this may have over critical attention patterns.

I also include a number of covariates to control for material or social factors, which may influence critics' coverage decisions. For example, one influence may emanate

from buyers' preferences. Certain categories of offerings may simply be more popular among buyers and generate greater consumer demand. Critics are likely to try to engage their audiences by giving greater attention to categories that they have a higher demand for. To test for the effects of consumer demand on critics' attention patterns, I include measures of the log of average financial performance of films in the same genre over the previous year.<sup>10</sup>

I also control for whether a film's directors and/or producers hold significant status in the film industry. Work by Joel Podolny (1993, 1994, 2001) suggests that a producer's position in the market's status ordering is perceived by others to be a signal of the quality of his offering in relation to the offering of others. Higher-status producers are generally believed to produce higher-quality offerings. As a result, they generally receive greater recognition and rewards for a given task relative to their lower-status counterparts. Given that both financial success and artistic recognition through industry awards are highly valued by members of the film industry, both can be regarded as indicators of filmmakers' status among their peers (Faulkner, 1983; Faulkner and Anderson, 1987). Prior success is treated as an indicator variable, with a value of 1 if a film's directors and producers have previously participated in films that either (i) ranked among the top 20 highest grossing films in their year of release or (ii) were nominated for either an Academy Award or Golden Globe (two of the industry's most prestigious awards).

In the reported analyses, I also include measures controlling for the effects that greater project resources will have on the likelihood of critical attention. The first measure is film budget—a larger budget is expected to increase a film's chances of being reviewed by critics since greater budgets are often associated with bigger promotional campaigns. A larger budget is also likely to be a signal of a studio's increased faith in the quality of a film and the likelihood that it will engage in tactics such as personal requests to co-opt critical attention. I included variables indicating whether a budget was reported for a film in IMDB and, in cases where one was reported, the size of the budget (labeled "any budget information" and "budget," respectively). For approximately 30% of the films in this sample, no budget information was available in IMDB. These films are expected to have relatively low budgets relative to films with reported budget information and thus to have a lower likelihood of critical coverage.

In a similar spirit, I include a measure reflecting the broadness of a film's theatrical exhibition during its opening weekend: the natural log of its number of opening screens. The number of screens a film opens on has been found to be a significant predictor of film revenue (Eliashberg and Shugan, 1997; De Vany, 2004), and thus can be expected to influence critical attention.

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<sup>10</sup>Information regarding financial performance of the top 100 box office grossing films for each year was complete. However, box office grosses for some films, particularly those that have earned relatively small revenues, were not reported. A conservative method for dealing with this incomplete information is to set box office gross for films in which no revenue information was reported to be equal to the 100th box office grossing film in its year of release.



I also control for whether each film was backed by a major distributor. Films supported by major distributors typically enjoy better ties and access to exhibitors as well as larger capacity for promotional campaigns; they are thus expected to attract greater critical attention. According to the Motion Picture Association of America, the seven major distributors of film in the United States are Buena Vista Pictures Distribution, Sony Pictures Entertainment Inc., Metro-Goldwyn-Mayer Studios Inc., Paramount Pictures Corp., Twentieth Century Fox Film Corp., Universal City Studios LLLP, and Warner Brothers Entertainment Inc. (*Motion Picture Association of America*, 2004). To capture their impact, I created a variable indicating whether or not a film was backed by one of these seven companies. Information regarding both the distributors who backed each film and the number of opening screens was gathered from the paid subscription section of <http://www.imdb.com>.

I have also included a control for films that I was not able to assess a schema coherence score for. Films did not receive a coherence score if they (i) belonged to a single genre for which an insufficient number of films was reviewed to reliably apply the cluster analysis technique or (ii) were multiple genre films. These films are included in analyses to ensure that estimates of the effects of key control variables such as budget or filmmaker status on critical coverage reflect the full population of films. The variable (assigned coherence score) has a value of one for films with assigned coherence scores; for all other films, this variable is assigned a value of zero.

I also included a measure (number of genres) controlling for the total number of genres each film was classified under in IMDB. Films that appeal to a greater number of genres are expected to draw in a broader audience since they feature characteristics that appeal to a wider range of audiences. As a result, they may be expected to attract greater attention from critics (Hsu, 2006). However, such films are also likely to be less coherent since they do not fit a clear category; the overall expectation for multiple genre films is therefore unclear. Lastly, I included a set of year dummies (not reported) to control for any trends over time in terms of critics' attention patterns.

## 5. Results

An important issue for the proposed analyses is the appropriate delineation of films to include in the sample. Both the *NYT* and the *Chicago Sun-Times* are nationally circulated periodicals; this suggests that they are likely to choose films that will be exhibited across the country in a number of cities. One might reasonably limit the range of films to those that are released in at least 10–15 screens during their opening weekend. However, both critics are based in large metropolitan cities that are often the first to see films that are in limited release. Accordingly, in the sample there exist a number of films exhibited on fewer than 10 screens that were reviewed by either periodical during their opening weekends. Table 1 displays the proportion of films reviewed by Ebert and the *NYT* critics in samples defined by a minimum of 5, 10, and 15 opening

**Table 1** Descriptive statistics

	Observations	Mean	SD	Minimum, maximum
Dependent variables				
<i>NYT review</i>				
≥5 screens	1053	0.966		0, 1
≥10 screens	902	0.969		0, 1
≥15 screens	866	0.97		0, 1
<i>Ebert review</i>				
≥5 screens	1053	0.777		0, 1
≥10 screens	902	0.785		0, 1
≥15 screens	866	0.786		0, 1
Genre-specific independent variables <sup>a</sup>				
Number of genres	1053	2.100	0.99	1, 7
Lagged average revenue	1053	2.729	1.1	0, 5.9
<i>NYT</i>				
Coherence score	325	25.12	5.65	19.0, 31.2
Average review length	325	197.8	49.5	129, 252
Number of critics per genre	325	3.554	1.23	2, 5
<i>Ebert</i>				
Coherence score	325	32.18	4.43	14.2, 34.6
Average review length	325	63.97	9.94	53, 79
Film-specific independent variables <sup>a</sup>				
Number of opening screens (ln)	1053	6.065	2.31	1.6, 8.2
Budget (ln)	738	16.88	1.27	8.9, 19.1
Major distributor	1053	0.251		0, 1
Any prior filmmaker success	1053	0.724		0, 1

<sup>a</sup>Calculated from set of films opening on five or more screens,  $N = 1053$ .

screens. As Table 1 illustrates, the percentage of films reviewed by Ebert ranged from 77.7% to 78.6% (depending on how the appropriate sample was defined), while the percentage for *NYT* ranged from 96.6% to 97.0%.

### 5.1 Roger Ebert

This first section reports the results of the logit regressions estimating the likelihood that Ebert will review any particular film. Results are presented for three samples of films: films that opened on a minimum of 5, 10, and 15 screens, respectively.

As Table 2 illustrates, I find that coherence score has a significant positive effect on the likelihood of review by Ebert. This supports the main hypothesis of the study: Ebert is more likely to review a film whose generic schema is more coherent.

**Table 2** Likelihood of Ebert review, logit regressions<sup>a</sup>

	≥5 sites (N = 1053)	≥10 sites (N = 902)	≥15 sites (N = 866)
Genre-specific information			
Coherence score	0.072*** (0.03)	0.074*** (0.3)	0.081*** (0.03)
Average review length	0.039*** (0.01)	0.041*** (0.02)	0.049*** (0.02)
Lagged average revenue (ln)	0.177* (0.09)	0.132* (0.19)	0.120 (0.10)
Number of genres	0.177 (0.18)	0.171 (0.19)	0.139 (0.19)
Assigned coherence score	-4.723*** (1.5)	-4.858*** (1.7)	-5.614*** (1.7)
Film-specific information			
Major distributor	0.783*** (0.18)	0.713*** (0.21)	0.675*** (0.22)
Number of opening sites (ln)	-0.060 (0.04)	-0.031 (0.06)	0.034 (0.07)
Any budget information	-4.828*** (1.5)	-7.194*** (2.0)	-6.081*** (2.2)
Budget (ln)	0.338*** (0.09)	0.470*** (0.12)	0.404*** (0.13)
Prior filmmaker success	0.569*** (0.19)	0.648*** (0.21)	0.784*** (0.21)
Constant	-0.883 (0.69)	-0.838 (0.79)	-1.237 (0.83)

<sup>a</sup>Release year dummy variables are included but not reported.

\* $P < 0.10$ , \*\*\* $P < 0.025$ .

In terms of the other covariates in the reported regressions, Ebert is consistently more likely to review films that are backed by a major distributor, have larger budgets, and are produced by highly successful filmmakers. Ebert also exhibits a higher likelihood of reviewing films from genres for which he tends to write lengthier reviews.

There appears to be a relatively large negative effect of belonging to a genre that was assigned a coherence score. However, when the positive contribution of coherence score and review length are taken into account in calculations of relative likelihood of review, films from genres with coherence scores have a higher general likelihood of review relative to films without coherence scores. Consider, for example, a set of films which are similar on all dimensions except for the genre that they belong to. The baseline comparison is a single genre film belonging to a genre without an assigned coherence score (such as mystery); this has a 71% chance of being reviewed by Ebert. By contrast, a documentary, which is in the middle of the genres in terms of coherence, has a 76% chance of being reviewed. And a film from drama, which is relatively high in coherence, has an 81% chance. However, not all genres with assigned coherence scores have a greater likelihood of being reviewed. An adventure film, for example, has only a 57% chance of being covered by Ebert. However, belonging to a genre with an assigned coherence score on average increases the likelihood of review by Ebert.

## 5.2 NYT critics

I next investigate whether the *NYT* critics exhibit the same tendency as Ebert to allocate greater attention to genres for which they hold more coherent schemas. Table 3 reports the results of the logit regressions estimating the likelihood for a film of receiving coverage by the *NYT* for films opening on a minimum of 5, 10, and 15 screens, respectively.

I again find support for the main hypothesis—*NYT* critics are more likely to award attention to films for which they have developed more coherent generic schemas. However, this effect is weaker relative to the effect for Ebert and becomes non-significant at the most restrictive specification of films opening on 15 or more screens.

Table 3 also shows that belonging to a genre in which a larger number of *NYT* critics have reviewed films increases a film's likelihood of being reviewed. This may be reflective of either greater general interest in that genre among *NYT* reviewers or a larger capacity to review. The effect of prior filmmaker success is positive and significant, suggesting that *NYT* critics are more likely to cover films, which have been produced by high-status filmmakers. I also find that backing by a major distributor increases the likelihood of review.

Again, we see a large negative effect of “assigned coherence score.” This effect is counterbalanced to some extent by the positive effects of coherence score, average review length, and number of *NYT* critics for each genre in which a coherence score

**Table 3** Likelihood of *NYT* review, logit regressions<sup>a</sup>

	≥5 sites ( <i>N</i> = 1053)	≥10 sites ( <i>N</i> = 902)	≥15 sites ( <i>N</i> = 866)
Genre-specific information			
Coherence score	0.251** (0.11)	0.255** (0.13)	0.227 (0.14)
Average review length	0.009 (0.01)	0.003 (0.01)	−0.002 (0.01)
Number of <i>NYT</i> critics	1.249*** (0.39)	1.434*** (0.44)	1.559*** (0.50)
Lagged average revenue (ln)	0.118 (0.21)	0.133 (0.24)	0.024 (0.24)
Number of genres	−0.118 (0.37)	−0.302 (0.39)	−0.419 (0.39)
Assigned coherence score	−12.26*** (5.0)	−11.84** (5.6)	−10.66* (6.0)
Film-specific information			
Major distributor	1.250*** (0.42)	1.120*** (0.48)	1.082** (0.50)
Number of opening sites (ln)	0.125 (0.10)	0.317** (0.14)	0.455*** (0.16)
Any budget information	−3.087 (2.9)	−0.921 (3.5)	0.604 (3.7)
Budget (ln)	0.271 (0.19)	0.128 (0.22)	0.037 (0.23)
Prior filmmaker success	1.054*** (0.45)	1.439*** (0.54)	1.568*** (0.56)
Constant	−0.478 (1.4)	−1.335 (1.6)	−1.704 (1.6)

<sup>a</sup>Release year dummy variables are included but not reported.

\* $P < 0.10$ , \*\* $P < 0.05$ , \*\*\* $P < 0.025$ .

was assigned. However, it appears that having a genre coherence score assigned does not impart an advantage as it does in Ebert's case. An average genre in terms of coherence score (documentary) has a 93% likelihood of being reviewed, while a film with no assigned score with the same resource characteristics has a 96% likelihood. Overall, however, the minimal variance among *NYT* critics makes any clear inferences difficult to draw.

For both Ebert and the *NYT* critics, the interpretive nature of cluster analysis may be a source for concern. In particular, the assessment of the appropriate number of clusters to compare genres against one another (six for Ebert, eight for *NYT* critics) may cast some doubt on the results presented. To address this, I use an alternative specification of schema coherence: the number of clusters required to reach a certain level of explanatory power (25% and 50% of total variance among each genre's adjectives). This number again reflects the degree to which the overall adjective structure is developed in a concise and well-organized manner. The greater the number of clusters required to capture a certain percentage of variance, the less coherent the overall structure of adjectives for that genre. A greater number of clusters is thus expected to lead to a lower likelihood of critical review. The results of this alternative measure are presented in Table A1 in Appendix. As Table A1 shows, the number of clusters needed to reach 25% and 50% of total variance explained has a negative effect on the likelihood a film will be reviewed by Ebert. Among the *NYT* critics, I again find a limited effect: the effect of schema coherence is highly significant when coherence is specified as the number of clusters required to explain 50% of total variance, but is non-significant when coherence is defined in terms of 25% of total variance.

## 6. Genre effects—a more in-depth view

To provide greater understanding of the effects uncovered thus far, it may be helpful to estimate a set of genre dummies to see how the likelihood of being reviewed varies by genre. In Table 4, I estimate the extent to which belonging to a particular genre affects a film's likelihood of being reviewed relative to the baseline genre of horror.

There is little variance in the estimated genre effects for the *NYT* critics. The critics appear significantly more likely to review drama relative to horror. The coefficients for adventure, crime, and romance are positive, but it is not possible to estimate their standard errors since the *NYT* critics reviewed all films classified in these categories.

Ebert shows more variance in genre effects. Relative to horror, Ebert is significantly more likely to review romance, drama, and thriller, and to a weaker degree, action, comedy, and documentary. He also appears highly unlikely to review adventure and crime films—indeed, it is impossible to estimate the standard errors for this since Ebert does not review any of the films classified as purely adventure or purely crime (although the extremity of this effect is driven by small numbers, which I address in the next section).

**Table 4** Likelihood of review, individual genre dummies<sup>a</sup>

	Ebert (≥5 sites)	NYT (≥5 sites)
Genre-specific information		
Action	2.789* (1.5)	0.374 (1.8)
Adventure	-16.885 (—)	18.425 (—)
Comedy	2.186* (1.2)	1.405 (1.3)
Crime	-15.590 (—)	16.249 (—)
Documentary	2.186* (1.2)	1.423 (1.5)
Drama	3.925*** (1.1)	2.885** (1.4)
Romance	4.203*** (1.6)	18.857 (—)
Thriller	2.912*** (1.2)	-0.772 (1.4)
Lagged average revenue (ln)	0.165* (0.09)	0.165 (0.22)
Number of genres	0.158 (0.15)	-0.123 (0.37)
Assigned coherence score	-2.981*** (1.1)	-1.762 (1.3)
Film-specific information		
Major distributor	0.766*** (0.19)	1.291*** (0.43)
Number of opening sites (ln)	-0.027 (0.04)	0.130 (0.10)
Any budget information	-4.288 (1.4)	-3.215 (2.9)
Budget (ln)	0.306*** (0.09)	0.276 (0.19)
Prior filmmaker success	0.523*** (0.19)	1.045*** (0.46)
Constant	-0.948 (0.62)	-0.368 (1.4)

<sup>a</sup>Release year dummy variables are included but not reported.

\* $P < 0.10$ , \*\* $P < 0.05$ , \*\*\* $P < 0.025$ .

To a limited degree, these effects reflect the differences in schema coherence score. For example, the genres with the highest coherence scores for Ebert (comedy, romance, and drama) have significant positive contrasts relative to horror. On the opposite end, Ebert's least coherence genre, adventure, has a negative effect. However, there are some inconsistencies. For example, thriller has a lower coherence score relative to horror but is significantly more likely to be reviewed.

## 7. Supplementary analyses: broadening the sample

Part of what the previous section suggests is that there may be a small numbers problem here—there are so few “single” genre films that these effects may be exaggerated. To address this, I expand the sample of films that were assigned cluster scores in two ways. In the first, I use each genre's coherence score to predict the likelihood that films classified under that genre as their main genre are reviewed. A film listed under the main genre of drama and a secondary genre of comedy, for example, would be

assigned the coherence score for drama. The significance of coherence score may decrease to some degree as a result of this more tenuous connection. Table 5 displayed the effects for both Ebert and *NYT*, using the sample of films that opened on five or more screens.

As Table 5 shows, the effect of coherence score remains positive and significant for Ebert. However, the effect has become non-significant for the *NYT* critics. The effects of most of the control variables remain similar to the main analyses. One notable exception is that the number of genres assigned to a film appears to have a positive effect on likelihood of review by Ebert when multiple genre films are classified according to their main genre's coherence score.

A second way in which I increase the sample of films with coherence score is by assigning scores to combinations of two genres instead of just single genres. It is reasonable to assume that a number of such combinations (such as romantic comedy, action/adventure, horror/thriller) have become so familiar that critics regard them as categories in and of themselves. I analyzed schema coherence for combinations that had a sufficient number of films to conduct the cluster analytic technique described earlier. This added coherence scores for 22 genre combinations. I then re-estimated the logit regression models with this larger set of schema coherence scores. As Table 6 illustrates, the effect of coherence score is again positive and significant for both Ebert and the *NYT* critics.

**Table 5** Likelihood of review, films by main genre<sup>a</sup>

	Ebert ( $\geq 5$ sites)	<i>NYT</i> ( $\geq 5$ sites)
Genre-specific information		
Coherence score	0.082*** (0.02)	0.095 (0.07)
Average review length	0.030*** (0.01)	0.008 (0.01)
Number of <i>NYT</i> critics		0.341 (0.30)
Lagged average revenue (ln)	0.166* (0.09)	0.232 (0.20)
Number of genres	0.259*** (0.11)	0.092 (0.25)
Assigned coherence score	-4.302*** (1.0)	-4.758 (3.0)
Film-specific information		
Major distributor	0.770*** (0.19)	1.235*** (0.42)
Number of opening sites (ln)	-0.030 (0.05)	0.128 (0.11)
Any budget information	-5.373*** (1.5)	-2.807 (2.9)
Budget (ln)	0.371*** (0.09)	0.239 (0.19)
Prior filmmaker success	0.533*** (0.19)	1.078*** (0.45)
Constant	-1.227** (0.61)	-1.008 (1.4)

<sup>a</sup>Release year dummy variables are included but not reported.

\* $P < 0.10$ , \*\* $P < 0.05$ , \*\*\* $P < 0.025$ .

**Table 6** Likelihood of review, multiple genre coherence scores<sup>a</sup>

	Ebert (≥5 sites)	NYT (≥5 sites)
Genre-specific information		
Coherence score	0.067*** (0.02)	0.142* (0.09)
Average review length	0.009 (0.01)	0.014* (0.01)
Number of <i>NYT</i> critics		0.639** (0.31)
Lagged average revenue (ln)	0.162* (0.09)	0.235 (0.21)
Number of genres	0.121 (0.18)	0.038 (0.31)
Assigned coherence score	-2.799** (1.1)	-8.235** (3.7)
Film-specific information		
Major distributor	0.798*** (0.18)	1.299*** (0.42)
Number of opening sites (ln)	-0.080* (0.04)	0.136 (0.10)
Any budget information	-5.155*** (1.4)	-2.817 (2.9)
Budget (ln)	0.357*** (0.09)	0.245 (0.19)
Prior filmmaker success	0.541*** (0.19)	1.029*** (0.45)
Constant	-0.567 (0.60)	-0.971 (1.2)

<sup>a</sup>Release year dummy variables are included but not reported.

\* $P < 0.10$ , \*\* $P < 0.05$ , \*\*\* $P < 0.025$ .

## 8. Discussion

The principal aims of this study were to (i) analyze how systems of meaning shape the way in which critics enact their roles as mediators of the market and (ii) consider the implications of this for the differential legitimation of market categories. In the analyses presented, I have uncovered support for the proposition that the structural properties of the schemas critics hold for product categories exert systematic constraints on their coverage decisions. The establishment of coherent standards for evaluation increases the likelihood that critics will direct attention to members of a category. Products belonging to categories for which critics hold more coherent schemas thus receive greater critical coverage. More broadly, this finding suggests that categories for which critics hold more structured schemas will be more likely to be awarded attention and legitimacy by consuming audiences in mediated markets.

The contrast in significance of these effects for Ebert versus the *NYT* critics appears to reflect organizational constraints. Ebert reviewed significantly fewer films relative to the *NYT*, suggesting that he was able to apply stronger selection criteria in his coverage decisions. This resulted in a stronger, more robust effect of schema coherence on film coverage for Ebert. Of course, this comparison is only exploratory. *NYT* critics as a group were used to generate measures of schema coherence, which might have also contributed to this weakened effect. However, this contrast points to an



interesting avenue for future research. It is reasonable to predict that reviewers for papers with even lower carrying capacity relative to Ebert will show stronger, more consistent findings for the effect predicted here. Moreover, aspects of critics' larger organizations such as prestige, organizational structure, and niche width may all influence this dynamic. A study comparing variance in the relationship between schema and coverage for critics in different organizational contexts would continue to develop understanding of the factors affecting selectivity among critics.

The findings also pave the way for an investigation of the extent to which beliefs regarding quality are collectively shared and how this impacts on processes of legitimation at the field level. For example, if there was little consensus in actors' schemas, the proposed relationship between attention and legitimation would be relatively weak. However, greater consensus of actors regarding beliefs is expected to strengthen this predicted relationship. Greater consensus is likely to increase gatekeepers' general standing and influence among audiences, heightening the impact of their attention and beliefs on audience perceptions. Moreover, by channeling gatekeepers' attention in similar directions, schema consensus would increase the homogeneity of category types presented and available to general audiences. More broadly, the extent to which there exists belief consensus among different market actors will impact on the stability of social and institutional structures. The establishment of this initial link between cognition and attention patterns provides a clear foundation for studying the cognitive underpinnings of legitimation processes more broadly. Further analysis of the field-level concept of legitimation, however, must work upward from the individual level to address variation in consensus in the beliefs of actors throughout an organizational field.

A separate avenue for future research concerns the impact of prior exposure to a category on the coherence of schemas. Among the films in this sample, there was evidence of a positive relationship between the amount of exposure to a genre and the coherence of the schemas for both the *NYT* critics and Ebert. While this correlation was not significant, it suggests the possibility of an evolutionary model for schema formation. This follows research suggesting that, as schemas develop, actors increasingly focus on abstract principles rather than on concrete features or specific contexts (Fiske and Cox, 1979; Park, 1986). Research also suggests that, in very developed schemas, abstract principles are richly interconnected into tightly organized structures (see Fiske and Taylor, 1991, for a review). As a result, well-developed schemas enable people to evaluate schema-consistent information quickly, consistently, and confidently (Lurigio and Carroll, 1985).

This type of model may be linked to the processes of legitimation underlying organizational ecological research (Hannan and Freeman, 1977). Ecological research proposes a link between the density of organizations within a category and its constitutive legitimacy—the extent to which the category has become a taken-for-granted aspect of the social world in the eyes of relevant audiences. While considerable empirical research has documented this density-dependent relationship, the cognitive

processes driving constitutive legitimacy have been largely glossed over. Recently, Hannan *et al.* (2006) have engaged in an ambitious effort to develop a formal theory linking the perceptions and beliefs of audiences directly to processes driving density-dependent legitimation. In a similar spirit, the current study suggests one possible process: greater exposure to an organizational type leads to greater coherence of beliefs among audiences regarding the category. This increases the ease with which audience members can make sense of and evaluate category members and results in greater allocation of social attention and resources relative to other categories. Moreover, this study provides a clear guide for an empirical investigation of this and related issues. Future research investigating the evolution of the systems of meaning underlying population dynamics will help in pushing theoretical development forward.

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## Address for correspondence

Greta Hsu, Graduate School of Management, University of California-Davis, Davis, CA 94305-5015, USA. e-mail: grhsu@ucdavis.edu

## References

- Abrams, N., I. Bell and J. Urdis (2001), *Studying Film*. Oxford University Press: New York.
- Austin, B. (1983), 'A longitudinal test of the taste culture and elitist hypotheses,' *Journal of Popular Film and Television*, 11, 157–167.
- Basuroy, S., S. Chatterjee and S. A. Ravid (2003), 'How critical are critical reviews? The box office effects of film critics, star-power, and budgets,' *Journal of Marketing*, 67, 103–117.
- Becker, H. S. (1984), *Art Worlds*. University of California Press: Berkeley, CA.
- Berger, P. L. and T. Luckman (1966), *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Doubleday & Co.: Garden City, New York.
- Brill, E. (1993), *A Corpus-Based Approach to Language Learning*, PhD Thesis. University of Pennsylvania, Philadelphia, PA.
- Calinski, T. and J. Harabasz (1974), 'A dendrite method for cluster analysis,' *Communications in Statistics*, 3, 1–27.
- Carley, K. (1986a), 'An approach for relating social structure to cognitive structure,' *Journal of Mathematical Sociology*, 12, 137–189.

- Carley, K. (1986b), 'Knowledge acquisition as a social phenomenon,' *Instructional Science*, **14**, 381–438.
- Caves, R. E. (2000), *Creative Industries*. Harvard University Press: Cambridge, MA.
- D'Andrade, R. G. (1965), 'Trait psychology and componential analysis,' *American Anthropologist*, **67**, 215–228.
- Dancyger, K. and J. Rush (2002), *Alternative Scriptwriting: Successfully Breaking the Rules*, 3rd edn. Focal Press: Boston, MA.
- De Silva, I. (1998), 'Consumer selection of motion pictures,' in Barry R. Litman (ed.), *The Motion Picture Mega Industry*. Allyn Bacon: Needham Heights, MA, pp. 144–171.
- De Vany, A (2004) *Hollywood Economics: How Extreme Uncertainty Shapes the Film Industry*. Routledge: New York.
- DiMaggio, P. M. and W. W. Powell (1983) 'The Iron Cage Revisited: Institutional isomorphism and collective rationality in organizational fields,' *American Sociological Review*, **47**, 147–160.
- Edelman, M. J. (1977), *Political Language: Words That Succeed and Policies That Fail*. Academic Press: New York.
- Elder, S. (1999 December 9), 'New Kids in the Balcony,' *Salon.com*. Retrieved from [http://www.salon.com/media/col/elde/1999/12/09/new\\_film\\_crits/](http://www.salon.com/media/col/elde/1999/12/09/new_film_crits/).
- Eliashberg, J. and S. M. Shugan (1997), 'Film critics: influencers or predictors?' *Journal of Marketing*, **61**, 68–78.
- Faulkner, R. R. (1983), *Music on Demand: Composers and Careers in the Hollywood Film Industry*. Transaction Books: New Brunswick, NJ.
- Faulkner, R. R. and A. B. Anderson (1987), 'Short-term projects and emergent careers: evidence from hollywood,' *American Journal of Sociology*, **92**, 879–909.
- Fiske, S. T. and M. G. Cox (1979), 'Person concepts: the effects of target familiarity and descriptive purpose on the process of describing others,' *Journal of Personality*, **47**, 136–161.
- Fiske, S. T. and S. E. Taylor (1991), *Social Cognition*, 2nd edn. McGraw-Hill: New York.
- Franzosi, R. (1990), 'Computer-assisted coding of textual data using semantic text grammars,' *Sociological Methods and Research*, **18**, 442–471.
- Gordon, A. C. (1999), *Classification*, 2nd edn. Monographs on Statistics and Applied Probability 82. Chapman and Hall: London.
- Greco, A. N. (1997), *The Book Publishing Industry*. Allyn Bacon: Needham Heights, MA.
- Greenfeld, L. (1989), *Different Worlds: A Sociological Study of Taste, Choice, and Success in Art*. Cambridge University Press: Cambridge.
- Hannan, M. T. and J. Freeman (1977), 'The population ecology of organizations,' *American Journal of Sociology*, **82**, 929–964.
- Hannan, M. T. and J. Freeman (1989), *Organizational Ecology*. Harvard University Press: Cambridge, MA.
- Hannan, M. T., L. Pólos and G. R. Carroll (2006), *Social Codes and Ecologies: A Treatise on Organizations*. Stanford Graduate School of Business: Stanford, CA.

- Hilgartner, S. and C. L. Bosk (1988), 'The rise and fall of social problems: a public arenas model,' *American Journal of Sociology*, **94**, 53–78.
- Holbrook, M. B. (1999), 'Popular appeal versus expert judgments of motion pictures,' *Journal of Consumer Research*, **26**, 144–155.
- Hsu, G. (2006), *Jacks of All Trades and Masters of None: Testing the Principle of Allocation*. Graduate School of Management, University of California: Davis, CA.
- Hsu, G. and M. T. Hannan (2005), 'Identities, genres, and organizational forms,' *Organization Science*, **16**, 474–490.
- Hsu, G. and J. M. Podolny (2005), 'Critiquing the critics: a methodological approach for the comparative evaluation of critical schemas,' *Social Science Research*, **34**, 189–214.
- Litman, B. R. (1983), 'Predicting success of theatrical movies: an empirical study,' *Journal of Popular Culture*, **16**, 159–175.
- Litman, B. R. and H. Ahn (1998), 'Predicting financial success of motion pictures,' in Barry Litman (ed.), *The Motion Picture Mega Industry*. Allyn Bacon: Needham Heights, MA, pp. 172–197.
- Litman, B. R. and L. S. Kohl (1989), 'Predicting financial success of motion pictures: the '80s experience,' *Journal of Media Economics*, **2**, 35–50.
- Lurigio, A. J. and J. S. Carroll (1985), 'Probation officers' schemata of offenders: content, development, and impact on treatment decisions,' *Journal of Personality and Social Psychology*, **48**, 1112–1126.
- MacQueen, J. (1967), 'Some methods for classification and analysis of multivariate observations,' *Proceedings of the 5th Berkeley Symposium on Mathematical Statistics and Probability*, **1**, 281–297.
- Merriam-Webster's Collegiate® Dictionary, Tenth Edition (2001), Merriam-Webster, Inc.: Springfield, MA.
- Meyer, J. W. and B. Rowan (1977) 'Institutionalized Organizations: Formal Structure as Myth and Ceremony,' *American Journal of Sociology*, **83**, 340–863
- Milligan, G. W. (1980), 'An examination of the effect of six types of error perturbation on fifteen clustering algorithms,' *Psychometrika*, **45**, 325–342.
- Milligan, G. W. and M. C. Cooper (1985), 'An examination of procedures for determining the number of clusters in a data set,' *Psychometrika*, **50**, 159–179.
- Mohr, J. W. (1998), 'Measuring meaning structures,' *Annual Review of Sociology*, **24**, 345–370.
- Mohr, J. W. and V. Duquenne (1997), 'The duality of culture and practice: poverty relief in New York City, 1888–1917,' *Theory and Society*, **26**, 305–356.
- Motion Picture Association of America (2004) Retrieved December 1, 2004 from <http://www.mpa.org/about/>
- Neelamegham, R. and P. Chintagunta (1999), 'A Bayesian model to forecast new product performance in domestic and international markets,' *Marketing Science*, **18**, 115–136.
- Park, B. (1986), 'A method for studying the development of impressions of real people,' *Journal of Personality and Social Psychology*, **51**, 907–917.

- Podolny, J. M. (1993), 'A status-based model of market competition,' *American Journal of Sociology*, **98**, 829–872.
- Podolny, J. M. (1994), 'Market uncertainty and the social character of economic exchange,' *Administrative Science Quarterly*, **39**, 458–483.
- Podolny, J. M., T. E. Stuart and M. T. Hannan (1996), 'Networks, knowledge, and niches: competition in the worldwide semiconductor industry, 1984–1991,' *American Journal of Sociology*, **102**, 659–689.
- Podolny, J. M. (2001) 'Networks as the Pipes and Prisms of the Market,' *American Journal of Sociology*, **107**, 33–60.
- Powell, W. W. (1985), *Getting into Print: The Decision-Making Process in Scholarly Publishing*. The University of Chicago Press: Chicago, IL.
- Prag, J. and J. Casavant (1994), 'An empirical study of the determinants of revenues and marketing expenditures in the motion picture industry,' *Journal of Cultural Economics*, **18**, 217–235.
- Rao, H., H. R. Greve and G. F. Davis (2001), 'Fool's gold: social proof in the initiation and discontinuation of coverage by Wall Street analysts,' *Administrative Science Quarterly*, **46**, 502–526.
- Ravid, S. A. (1999), 'Information, blockbusters, and stars: a study of the film industry,' *Journal of Business*, **72**, 463–492.
- Ruef, M. (1999), 'Social ontology and the dynamics of organizational forms: creating market actors in the healthcare field, 1966–1994,' *Social Forces*, **77**(4), 1403–1432.
- Ruef, M. (2000), 'The emergence of organizational forms: a community ecology approach,' *American Journal of Sociology*, **106**, 658–714.
- Ruef, M. and W. R. Scott (1998), 'A multidimensional model of organizational legitimacy: hospital survival in changing institutional environments,' *Administrative Science Quarterly*, **43**, 877–904.
- Sarle, W. S. (1983), *Cubic Clustering Criterion*, SAS Technical Report A-108. SAS Institute Inc.: Cary, NC.
- SAS Institute Inc (1989), *SAS/STAT User's Guide, Version 6, Fourth Edition*. SAS Institute Inc: Cary, NC.
- Sawhney, M. S. and J. Eliashberg (1996), 'A parsimonious model for forecasting gross box office revenues of motion pictures,' *Marketing Science*, **15**, 113–131.
- Shrum, W. M. (1996), *Fringe and Fortune: The Role of Critics in High and Popular Art*. Princeton University Press: Princeton, NJ.
- Simmel, G. (1907), *The Philosophy of Money*, trans. Tom Bottomore and David Frisby. Routledge & Kegan Paul Ltd.: Boston, MA.
- Smith, E. E., E. J. Shoben, and L. J. Rips (1974) 'Structure and Process in Semantic Memory: A featural model for semantic decisions,' *Psychological Review*, **81**, 214–241.
- Sochay, S. G. (1994), 'Predicting the performance of motion pictures,' *Journal of Media Economics*, **7**, 1–20.
- Stuart, T. E., H. Hoang, and R. Hybels (1999) 'Interorganizational endorsements and the performance of entrepreneurial ventures,' *Administrative Science Quarterly*, **44**, 315–349.

- Suchman, M. (1995), 'Managing legitimacy: strategic and institutional approaches,' *Academy of Management Review*, **20**, 571–610.
- Swidler, A. (1986), 'Culture in action: symbols and strategies,' *American Sociological Review*, **51**, 273–286.
- Wallace, W. T., A. Seigerman and M. B. Holbrook (1993), 'The role of actors and actresses in the success of films,' *Journal of Cultural Economics*, **17**, 1–27.
- Ward, J. H. (1963), 'Hierarchical grouping to optimize an objective function,' *Journal of the American Statistical Association*, **58**, 236–244.
- White, H. C. and C. A. White (1992), *Canvases and Careers: Institutional Change in the French Painting World: With a New Foreword and a New Afterword*. University of Chicago Press: Chicago, IL.
- Wyatt, R. O. and D. P. Badger (1984), 'How reviews affect interest in and evaluation of films,' *Journalism Quarterly*, **61**, 874–878.
- Zuckerman, E. W. (1999), 'The categorical imperative: securities analysts and the legitimacy discount,' *American Journal of Sociology*, **104**, 1398–1438.
- Zuckerman, E. W. (2000), 'Focusing the corporate product: securities analysts and de-diversification,' *Administrative Science Quarterly*, **45**, 591–619.

## Appendix

**Table A1** Likelihood of review, schema coherence as number of clusters needed to reach threshold level of variance explained ( $\geq 5$  sites)<sup>a</sup>

Independent variables	Ebert		NYT critics	
	25% variance	50% variance	25% variance	50% variance
Genre-specific information				
Coherence score	-0.177* (0.09)	-0.120*** (0.04)	-0.429 (0.27)	-0.296*** (0.11)
Average review length	0.039*** (0.02)	0.046*** (0.02)	0.007 (0.01)	0.034** (0.02)
Number of NYT critics			1.291*** (0.49)	1.433*** (0.38)
Lagged average revenue (ln)	0.180** (0.09)	0.175* (0.09)	0.193 (0.21)	0.170 (0.22)
Number of genres	0.182 (0.15)	0.175 (0.15)	-0.123 (0.37)	-0.131 (0.37)
Film-specific information				
Major distributor	0.785*** (0.18)	0.783*** (0.18)	1.259*** (0.42)	1.268*** (0.42)
Number of opening sites (ln)	-0.063 (0.04)	-0.157 (0.04)	0.125 (0.10)	0.139 (0.10)
Any budget information	-4.813*** (1.4)	-4.809*** (1.4)	-3.010 (2.9)	-3.130 (2.9)
Budget (ln)	0.336*** (0.09)	0.337*** (0.09)	0.264 (0.19)	0.274 (0.19)
Prior filmmaker success	0.569*** (0.19)	0.568*** (0.19)	1.099*** (0.45)	1.027*** (0.45)
Constant	-0.888 (0.62)	-0.893 (0.62)	-0.496 (1.4)	-0.418 (1.4)

<sup>a</sup>Release year dummy variables are included but not reported.

\*  $P < 0.10$ , \*\*  $P < 0.05$ , \*\*\*  $P < 0.025$ .