Hybrids in Hollywood: A study of genre spanning in the U.S. film industry

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Abstract:

Category blending enables producers to combine commonly understood and accepted features in incremental ways that still deviate from standard category offerings. While there is significant risk for producers who do not conform to category boundaries, we propose that certain contextual conditions may enhance the perceived attractiveness of category blending. Using data from the U.S. feature film industry (1912-1948), we find that the fuzziness of a genre’s boundaries and the diversity of external genres spanned by its existing set of films shapes the likelihood that new films within the genre will incorporate elements from external genres. We also find that similarity of features among a genre’s films decreases genre spanning, but at high levels this relationship reverses. We consider the implications of these findings for theories of stability and change in markets.
Producers introducing new offerings to a market face two fundamental hurdles: establishing the legitimacy of their offerings and differentiating them in a positive way to relevant audiences. Considerable research suggests a key way of navigating the first hurdle is by adopting the characteristic features of members of a well-established and collectively understood market category (e.g. Hannan and Freeman, 1989; Zuckerman 1999; Phillips and Zuckerman, 2001; Hannan, Pólos, and Carroll 2007). Offerings that conform to the social codes inherent in established categorization systems are easier for audience members to identify, enhancing legitimacy and prospects of success.

This strategy, however, places significant constraint upon a producer’s ability to find novel and appealing ways to distinguish its offerings from those of competitors who similarly seek to win audience members’ favor. The tension between these two goals has been well noted in organizational literature (e.g. Porac, Thomas, and Baden-Fuller 1989; Baum and Haveman, 1997; Zuckerman, 1999; Deephouse 1999; Phillips and Zuckerman, 2001; King, Clemens, and Fry, 2007). The strategies that producers adopt to handle these competing pressures, however, have received less attention.

In this paper, we focus on one such strategy: the mixing of features from multiple, established market categories (i.e. hybridization). Category mixing enables producers to combine commonly understood and accepted themes in ways that deviate from standard category offerings. By recombining category features from established categories, producers can innovate in a structured and incremental fashion (Hannan and Freeman, 1989; Haveman and Rao, 2006). Hybridization would thus seem an attractive method for meeting both goals of legitimacy and differentiation.

However, extant research suggests that producers who mix categories experience social and economic penalties for doing so (see Hsu, Hannan, and Koçak, forthcoming for a review). Their offerings are more difficult to make sense of than category “purists” and, as a result, often ignored or explicitly devalued by targeted audience members. Moreover, focus and efforts are dispersed across diverse activities, decreasing producers’ ability to effectively appeal to audiences within each targeted category.

Yet, certain contextual conditions likely influence the perceived attractiveness of category mixing, leading producers to increasingly present the market with hybrid offerings. In their study of
category mixing in French gastronomy, for example, Rao, Monin, and Durand (2005) find that increased mixing in the signature dishes of prominent role models led to emulation by other chefs. And, as the proportion of chefs pursuing a hybrid strategy increased, the symbolic potency of category boundaries weakened, resulting in decreased penalties for hybridization.

As Rao and colleagues’ work suggests, the positioning of existing offerings in the market landscape conveys vital information about the structure of the market that informs future positioning choices. This relates to a core idea proposed by White (1981), who understands the array of volume/revenue role combinations for producers as both a cause and a consequence of the pressure to conform to a socially constructed schedule of observable outcomes. Producers’ positioning choices are part of a dynamic, iterative process (Baum and Haveman, 1997). Producers choose positions based on the market’s composition at a given point in time. These choices, in turn, shape the way the market’s composition evolves. Producers, through their positioning choices, create an ever-evolving structure that differentially constrains and guides future choices.

In this paper, we explore this dynamic by studying the impact of various dimensions of a category’s composition—including the fuzziness of boundaries, diversity of associated categories, and similarity of features among extant offerings—on producers’ positioning choices. We propose that these forces influence producers’ tendencies towards category spanning in distinct and, to some extent, counterbalancing ways, resulting in continual evolution in the market’s structure.

We test our hypotheses using data on genre spanning in the U.S. film industry. In film, as in cultural arenas more broadly, categorical boundaries are formed around genres, and industry participants – both producers and consumers - use their generic understandings to make sense of cultural offerings (DiMaggio, 1987; Basuroy, Desai, and Talukdar, 2006; Jensen, 2007). Neale (2000:31) notes that genres “provide spectators with means of recognition and understanding. They help render individual films, and the elements within them, intelligible and, therefore, explicable.” Audiences thus go to a film with clear genre-based expectations “and originality is to be welcomed only in the degree that it intensifies the expected experience without fundamentally altering it” (Warshow [1948]1974: 129-30).
At the same time, there are high demands placed on differentiation of offerings within the film industry (Schatz, 1981; Neale, 2000; De Vany, 2004). In film, changing the product is an economic necessity: “the promotion of the difference between products is a competitive method and encourages repeated consumption” (Bordwell, Staiger, and Thompson, 1985: 97). Audience tastes are fickle and “capricious, moving with little advance warning” (Faulkner and Anderson, 1987: 884). There is constant demand for new creative elements and offerings, although what will ultimately be accepted by the audience is highly uncertain. Film scholars suggest that a key way for producers to differentiate given this environment is through mixing elements from different genres in their offerings. Dancynger and Rush (2002: 139) argue that genre spanning can “provide new dimensions to old stories to entice the fickle film audience.”

Overall, Schatz (1981:5) summarizes the tension between the security of adhering to established genre-based conventions versus the necessity of differentiation:

Feature filmmaking, like most mass media production, is an expensive enterprise. Those who invest their capital, from the major studio to the struggling independent, are in a curious bind: on the one hand their product must be sufficiently inventive to attract attention and satisfy the audience’s demand for novelty, and on the other hand, they must protect their initial investment by relying to some extent upon established conventions that have proven through previous exposure and repetition.

In the next section, we develop hypotheses regarding different factors influencing the propensity of producers to conform to versus span category boundaries through their new offerings. We then test and find support for these hypotheses using data from the U.S. feature film industry, 1912-1948. We discuss our results and their implications in the concluding section of this paper.

**CATEGORY STRUCTURATION AND CATEGORY SPANNING**

Existing literature suggests that the composition of producers and/or their offerings in a market serves as a map that helps producers understand the opportunities and constraints of the market they are attempting to position themselves within (White 1981; Leifer and White, 1987; Porac et al., 1995; Baum and Haveman, 1997). In markets with multiple categories, this structure is often conceptualized as a set of distinct, interrelated roles. Each role is represented by a model or schema for category membership that producers
use to guide their own organizing and production efforts (e.g. DiMaggio and Powell, 1983; Meyer and Rowan, 1977). These schemas convey information about appropriate patterns in organizational arrangements (Greenwood and Hinings, 1993, 1996) or features of category offerings (Hannan, Pólos, and Carroll, 2007). They enable diverse market participants to assign roles to and form expectations for producers’ offerings, facilitating market interactions.

Given their origins in producers’ positioning choices, category schemas likely vary considerably in the clarity of information conveyed (Baron, 2004; Zuckerman, 2004; Hsu and Hannan, 2005). When the schema for category membership is well developed, the features which signal that an offering is (or is not) a member of the category are clear and readily apparent to market participants. Producers thus have a clear guide to follow in their own organizing efforts. Adherence to this guide facilitates resource mobilization, as well as communication and coordination among producing agents (Hannan and Freeman, 1989).

Research also suggests that audiences exert strong pressure on producers to conform to the predominant template in such cases. When a market role is clearly developed, audiences are able to form strong, well-developed expectations for category offerings (Hannan, Pólos, and Carroll, 2007). As a result, they quickly make sense of and evaluate offerings that fit clearly with a single role. In contrast, audiences often find offerings that span established categories more difficult to make sense of (Zuckerman, 1999, 2000; Zuckerman et al., 2003). And since hybrid offerings exhibit atypical features from the point of view of any one category, hybridization often results in worse fit with expectations and lower appeal among targeted audiences (Hsu, Hannan, and Koçak, forthcoming). Accordingly, when categorical models and expectations are clear, audience members impose strong penalties on producers who span categories. The overall result is a strong trend towards isomorphism (DiMaggio and Powell, 1983; Greenwood and Hinings, 1993) and respect of categorical boundaries.

In contrast, when the features that define membership in a given category are ambiguous, producers lack a clear guide for their organizing and production efforts. Instead of a single model, producers may confront numerous potential options, none of which provides direction regarding the most
appropriate or legitimate ways of organizing. Heterogeneity of templates provides an ambiguous institutional context in which producers are likely to conceive of and explore alternatives in features and/or activities to existing models (Greenwood and Hinings, 1996; Clemens and Cook, 1999). Producers are thus likely to borrow and mix elements from different categories in novel ways (Stark, 1996; Rao and Singh, 1999; Schneiberg, 2007; King, Clemens, and Fry, 2007).

And when categorical understandings are less clear, expectations for how offerings associated with each will be weaker. As a result, audience-imposed penalties for failure to fit clearly with any single role are likely to diminish. For example, within the realm of French cuisine, Rao, Monin, and Durand (2005) find that chefs identified as exponents of either classical or nouvelle cuisine faced lower critical ratings for borrowing techniques from the rival camp through their signature dishes; however, these penalties declined as borrowing became rife and the boundaries between these categories eroded. Similarly, Negro, Hannan, and Rao (2008) demonstrate that the penalty for spanning styles in production of Barolo and Barbaresco wines decreased as increasing category spanning among producers weakened the contrast of the two styles.

Overall, this suggests that the clearer categorical models for organizing are, the less likely alternatives will be envisioned and enacted, and the more negatively audience members will react to departures from clearly established roles. Conversely, as the clarity of roles decreases, alternatives will be increasingly explored, while the pressures imposed by audiences to conform to roles will naturally weaken.

In the next section, we highlight the iterative nature of these dynamics, as the positioning of existing category offerings influences the clarity of models for organizing. This clarity (or lack thereof), in turn, influences the positioning of future offerings.

**PRODUCER POSITIONING AND CATEGORY STRUCTURATION**

Existing literature points to two distinct ways through which the overall positioning of offerings within a category shapes the clarity of its schema. The first stems from the positioning of offerings vis-à-vis
established category boundaries and the extent to which producers mix elements from multiple categories. The second relates to the degree to which a category’s offerings cohere around a set of salient characteristics that define category membership. We propose that these different types of positioning distributions exert distinct effects on the overall tendency of a category’s producers to mix elements from external categories within their offerings.

Hannan and Freeman (1986) describe the first pressure—category spanning—as a key blending mechanism contributing to a weakening of boundaries between market categories. When a substantial number of offerings exhibit a mixture of features emblematic of different categories, perceived differences between categories are diluted (Hannan and Freeman, 1989; Haveman and Rao, 2006). As a result, understanding of what it means to be a member of each category weakens as well.

Studies suggest two ways that the category spanning of producers weakens the clarity of categorical beliefs. The first relates to the proportion of category members that clearly conform to categorical boundaries and are regarded as full (rather than partial or hybrid) members of a category. In their formal reformulation of density dependence theory, Hannan, Pólos, and Carroll (2007) propose that a category’s taken-for-granted status increases with the extent to which its members can be clearly distinguished from non-members. Categories where a high proportion of members have full membership are high in contrast; they stand out sharply against the market background. In support of this, Bogaert, Boone, and Carroll (2006) find that both contrast and density contributed to the taken-for-granted status of the Dutch audit industry.

In comparison, categories whose boundaries have been permeated more (i.e., where partial memberships are prevalent) cannot be distinguished as clearly or easily from other offerings in the market. Such categories form a fuzzier set, with weaker boundaries and a less cohesive membership (Hannan, Pólos, and Carroll, 2007; Pontikes, 2008). When category fuzziness is higher, the model for organizing is less clearly developed. As a result, producers are more likely to span category boundaries by incorporating elements from external categories that they believe will complement or enhance their offerings.
**Hypothesis 1.** The likelihood a producer’s new offering spans category boundaries increases with increasing category fuzziness.

Pontikes (2008) expands on this notion of categorical constraint by layering an additional distinction onto fuzziness: the variety of *alter* categories members of a focal category are affiliated with. Categories may differ in the number of distinct other categories from which partial members incorporate features. The greater the variety of associated categories, the greater the variety in salient features displayed by offerings associated with the focal category. As a result, the template for organizing in the focal category becomes even more fragmented. We thus predict the following:

**Hypothesis 2.** The likelihood a producer’s new offering spans category boundaries increases with increasing diversity of alter categories with which a category’s existing offerings are associated.

A category’s composition may also shape the clarity of its organizing schema through the distribution of features *within* the category. Research suggests market categories are typically defined around a limited number of dimensions. For example, in their study of Scottish knitwear producers, Porac et al. (1995) propose that agents simplify their complex market environment by focusing attention on a small set of dimensions they perceive to be particularly relevant to organizational activities. Consistent with research that suggests categories emerge around perceived similarities (e.g. DiMaggio, 1987; Romanelli, 1991; Zerubavel, 1996), Porac et al. find that producers perceived as similar along central dimensions are grouped within the same category.

Hannan et al. (2007) propose that the degree of similarity among a category’s offerings affects the clarity of categorical understandings. Categories are more likely to be regarded as taken-for-granted ways of organizing when audience members perceive members as having a high degree of similarity along relevant (or salient) dimensions. Compared to cases where low similarity is perceived, the template defining category membership is likely to be well-developed, reflecting a clear, common set of characteristics. Conversely, lack of similarity in salient features among category offerings impedes the
development of a template for organizing. Offerings display a myriad of different, non-convergent features. As a result, beliefs about what features a category members should (and should not) have are weaker or less developed. Hence, we hypothesize:

**Hypothesis 3a.** The likelihood a producer’s new offering spans category boundaries decreases with increasing similarity of features among a category’s offerings.

While convergence of salient features among category members likely facilitates organizing efforts, ecological treatments of the niche also suggest such convergence increases competitive pressures within a category (Carroll, 1985; Hannan and Freeman, 1989; Haveman, 1993; Baum and Singh, 1994; Baum and Haveman, 1997; Dobrev, Kim, and Hannan, 2001; Sørensen, 2004). Offerings with similar features tend to cater to similar tastes in the market. When there is high similarity among features salient to audience members, degree of overlap in producer niches is expected to be higher. Thus, competition for the consumers who correspond to those niches intensifies (Hannan, Pólos, and Carroll, 2003). And, as more and more producers compete for the same pool of resources, chances of success and survival decrease (for a review, see Carroll and Hannan, 2000).

Under such conditions, producers within the category are expected to increasingly adopt positions away from this intense competition. For example, Baum and colleagues find that entrepreneurs looking to establish a foothold in the category are often deterred from founding organizations within crowded market locations (Baum and Singh, 1994; Baum and Oliver, 1996). Research on resource partitioning processes similarly holds that in markets with increasing generalist concentration in resource-rich areas of the market, specialist producers targeting peripheral regions of the market often proliferate (Carroll, 1985; Carroll, Dobrev, and Swaminathan, 2002).

In markets with multiple categories, one method for producers to avoid deleterious overlap is to incorporate features from external categories in their offerings. Recombining features from established categories provides a structured, incremental path by which producers can position themselves away from the central, characteristic tendencies of a category (Hannan and Freeman, 1989; Haveman and Rao,
We thus expect that very high levels of similarity among a category’s members should increase pressure on producers to differentiate themselves from the category standard through category spanning.

**Hypothesis 3b:** At higher levels of similarity of features among a category’s offerings, the likelihood a producer’s new offering spans category boundaries increases with increasing similarity.

In sum, we highlight three endogenous forces shaping producers’ positioning choices. We expect increases in category fuzziness and diversity of associated categories will lead to less developed organizing templates, encouraging consideration of alternative models and category spanning. We also propose that, within a market category, similarity of relevant features strengthens categorical understandings and restricts producers from crossing boundaries. However, this relationship reverses at very high similarity of category features, as intense competitive pressures encourage producers to differentiate through category spanning.

**THE EMPIRICAL SETTING**

We test our hypotheses by studying evolution in genres within the U.S. film industry, from 1912, the year the first U.S.-produced feature film was released, to 1948. This window runs from the very early period of feature-length film, to the rise of the studio-era in the 1920s and 1930s, to the break-up of the ‘studio system’ in the late 1940s. During this period, studios generally resembled factory systems designed around the mass production and distribution of films (Bordwell, Staiger, and Thompson, 1985). Studio executives at company headquarters planned the production and distribution of feature-length films on an annual seasonal basis. Balio (1993: 98) notes a typical way executives planned annual production was “by dividing output into A and B groups and then by allocating a specified amount of the total production budget to each group.”

Categorizations executives used in their routinized planning process often revolved around genre (Neale 2000). In 1918, for example, Jesse Lasky of Paramount Pictures stated that genre preferences were used in exhibitor reports all over the country as a method of researching audiences (Lasky, 1918).
Genres were used as tools in the distribution strategy, providing information that reduces distributors’ dependence on filmmakers’ input (Donahue, 1987). Studios also tailored many aspects of the production process to genre-based filmmaking, including “‘stables’ of writers and technical crews whose work was limited to certain types of films; the studio sets and sound stages designed for specific genres; even the ‘star system,’ which capitalized upon the familiar, easily categorized qualities of individual performers” (Schatz, 1981: 10). Adherence to established genre conventions thus allowed production companies both economies of scale in production and some degree of assurance in the planning, production, and marketing of films (Kapsis, 1991; Neale, 2000).

At the same time, studios were aware of the need for continual innovation in their offerings. Director George Stevens stressed that one fundamental method of differentiation occurs through recovering and recombination within genres. Filmmakers “break films down ‘into their component elements, study those carefully, and then use them again in different arrangement, as parts of a new story, depending on them to exert the same appeal they did the first time” (Weaver, 1947). As a result, during the studio era, studios regularly produced hybrids as a way to offer audiences a variety of different aesthetic features (Neale, 2000).

MEASURES AND ESTIMATION
Our primary source for information is the American Film Institute Catalog of Motion Pictures (AFI) Produced in the United States: Feature Films, 1911-1948 (1989-1999, Berkeley: University of California Press), an encyclopedic publication that has provided product-level information on all motion pictures released in the U.S. since 1893. The AFI directory provides detailed information on each film released during our study period, including the production company, distributor, release date, length, cast, genre, subject matters and plot. We restricted the set of films and the population of producer organizations in two ways. Films produced and released for non-commercial purposes, such as those commissioned by government agencies, do not enter the data. We also excluded imported films as these come from non-U.S. based production companies.
The AFI has been used as a source for previous research on genre innovation during the silent period (Mezias and Mezias, 2000) and the Studio System period (Peretti and Negro, 2007), as well as in analyses of the evolution of the industry (Jones, 2001). In the introduction to the 1921-1930 catalog volume, the AFI editors explain that data collected by AFI come from the films themselves when prints were available or, when it was impossible to see a film, from a variety of contemporary sources, including contemporaneous trade publications, copyright records, and in a small percentage of cases, scripts that were part of corporate records.\(^1\) The editors maintain that “the indication of genre is expressed in the vernacular of the 1920’s” (xv). Researchers in every respect “made an effort to retain contemporaneous interpretations and language even if terminology was streamlined to make information more accessible to modern readers” (xvi). They used modern sources, autobiographies, photographs, documentaries, and personal reminiscences only for notes or note credit information. Their approach thus limits the risk of retrospective bias in genre classification.

Our analyses focus on the set of genres designated in an internal guide to genre classification by provided by the AFI as “Stand alone”—those which AFI regards as traditional, broad categorizations.\(^2\) Our dataset is comprised of 20 genres: adventure, allegory, anthology, biography, children’s works, comedy, documentary, drama, epic, fantasy, film noir, horror, melodrama, musical, mystery, performance, romance, science fiction, war, western.

A glance at the most common subjects among different genres suggests significant differences, as well as some overlap, among genres. For example, for the genre of romance, the most frequently cited subjects were “romance,” “marriage,” “courtship,” “romantic rivalry,” “infidelity,” and “royalty”. This is

\(^1\) Secondary sources used by AFI include trade publications such as The Moving Picture World, Variety, The Motion Picture News, Wid’s Film Daily Yearbook, Exhibitors Trade Review, Film Daily, Motion Picture Almanac, Motion Picture Studio Directory and Trade Annual, Moving Picture World, National Board of Review Magazine, Photoplay Magazine, selected issues of the American Cinematographer, clipping files compiled by the Community Motion Picture Bureau, a service which provided films for the American Armed Forces and civic groups during the World Wars, newspaper reviews and news from the New York Times and the New York Morning Telegraph.

\(^2\) In addition to Stand alone genres, AFI further assigned what it terms “Descriptive” genres to films, which indicate “descriptive limitations to the Stand alone genres”. Examples of the latter are legal, homefront, medical, and sea. Descriptive genres can only be used in association with Stand alone genres. We did not include these additional genre categorizations in our sample. We also exclude several hybrid genres regarded by AFI as Stand alone (such as comedy drama and musical comedy) from the analyses presented here. Inclusion of these hybrid genres in supplementary analyses do not alter the effects of the main independent variables.
quite different from the list for horror films, whose most common subjects were “murder”, “physicians”, “revenge,” “vampires”, “scientists”, “monsters”, and “insanity”. However, horror appears to share some common subject matter with science fiction, whose most frequent topics were “scientists”, “spaceships”, “murder”, “the future”, “space exploration”, “experiments”, “aliens, extraterrestrial”, and “monsters”. And all of these seem very different from war films, for which “World War II”, “World War I”, “spies”, “Nazis”, and “Americans in foreign countries” were the most frequently reported subjects. Such genre and subject specialization provide support for the existence of meaningful differences among the various genres in the AFI’s classification scheme.

Our dependent variable is the likelihood a new film spans genre boundaries. We coded this variable as “1” if AFI classified the film under two or more genres and “0” otherwise. In our sample, roughly 87 percent of films were assigned a single primary genre, 12 percent were assigned an additional secondary genre, and 1 percent a third genre. We focused on each film’s primary categorization when assessing how the characteristics of genre’s existing films affects the likelihood a new film spans multiple genres or not. Primary genres are used to define basic features like the structure of dramatic action, the narrative style, the setting and the nature of protagonists, while successive genres describe less important features of the film (Altman, 1999).

**Fuzziness.** Our first independent variable is the fuzziness of each genre—the extent to which films with a primary classification under that genre that are partial versus full-fledged members at a given point in time (Hannan, Pólos, and Carroll, 2007). Using the AFI data, we constructed the weighted count of all films released to U.S. theaters within each of the genre in our dataset over each period of time (for our main analyses, moving three-year windows were used). The contribution of films classified under additional genres were weighted in the following manner: each film classified under one additional genre contributed (0.5 x 1) to the genre’s yearly density count, while each film classified under two additional genres contributed (0.33 x 1). The fuzziness of the category is one minus the ratio of the weighted membership to the potential membership of the genre (i.e. the count if all films with a primary
classification under a focal genre were full-fledged, or single genre, productions). The measure ranges from zero to one; categories with a high proportion of partial to full-fledged members will have a value closer to one, while categories with low fuzziness will be closer to zero along this measure.

**Diversity of affiliated genres.** Our second measure of category spanning reflects the diversity of other genres films with a primary genre are affiliated with according to the AFI classifications. For each genre at a given point in time, we constructed a count of the number of distinct alter genres films were also classified under. Following Pontikes (2008), our measure of diversity takes on the following form:

$$Diversity_c = \text{Fuzziness}_c \times N_{ocat},$$

where $N_{ocat}$ is the count of alter genres, and $\text{Fuzziness}_c$ is the fuzziness of the primary genre. This reflects the extent to which hybrid members of the primary genre belong to a small versus larger number of distinct alter genres.

**Subject similarity.** Our next independent variable measures the similarity in subject matter among films affiliated with each genre. In film, subject matter is viewed as a key dimension guiding the demarcation of genre boundaries. Media scholars observe that films within a genre often share similar topical features and structure and in turn features are related to basic subject matter and thematic preoccupations (Tolson, 1996; Altman, 1999). To assess this similarity, we employed the method of latent semantic analysis (LSA). LSA has been employed for a variety of applications to analyze relationships between a large set of textual documents based on their semantic similarity (see Landauer, Foltz, and Laham, 1998 for an overview). LSA takes a large document-by-term matrix as input and then uses a general form of factor analysis, singular value decomposition, to infer major associative patterns in this data (Deerwester et al., 1990). This produces a reduced model of the structure of the data, where each of the original terms and documents is represented through a vector of factor values. Inferring similarity of documents through the nearness of vectors allows LSA to move beyond approaches to textual analysis such as multidimensional scaling that rely on more direct patterns of co-occurrences of term within texts to infer similarity (Landauer and Dumais, 1997; Ruef, 2000). For example, this method is more likely to reveal associations between terms that do not occur frequently with one another within the same text but are often used in
conjunction with similar other terms. For example, the terms “physician” and “doctor” are closely associated in meaning, but may not co-occur within the same document very often because document authors tend to employ either one term or the other. Because both terms are often surrounded by similar other terms such as “nurse”, “hospital”, and “disease,” LSA picks up the association between them. The aim of LSA is not to reach some interpretation of the underlying factors (this would be quite difficult since the number of factors even in the reduced model is quite large), but rather to arrive at a close approximation of how human coders would understand the degree of similarity between distinct terms, between distinct documents, or between terms and documents in a dataset (Deerwester et al., 1990).

In the case of our film dataset, we treated each film as a “document”, where the set of its respective subjects according to AFI is treated as its respective set of terms. For each year in our dataset, we constructed a film-by-subject matrix which reflected all films released in the previous five year window and all subjects listed within those films. We used moving five year windows because we wanted to capture the associations between subjects for all films in the recent past to infer similarity in “meanings” among subjects and films in a given year. This original matrix was decomposed using singular value decomposition, revealing a reduced model reflecting estimated similarity between all pairs of films. The dot product or cosine between vectors representing each pair of film indicates their degree of similarity (Deerwester et al., 1990). For each genre, we extracted the cosine between each pair of films classified under the same primary genre and released within each focal year. We then took the average of these values, which reflects the average similarity between all films within each genre in that year.

Control variables. Genre-level Controls. We included genre density variables reflecting the total count of films classified by AFI under a given primary genre in each year, weighted by the number of additional genres each film was assigned using the scheme listed above. It seems reasonable to expect the likelihood for a new film to be multiple genre to first decrease and then increase with increasing genre density. As audience members encounter more and more instances of a particular category, the beliefs they form for

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3 For the earliest years in our dataset, we used all available years up to five to construct this matrix. For example, for 1914, we used all films from 1912, 1913, and 1914 to populate the matrix for analysis.
the category become more developed (Hannan and Freeman, 1989; Carroll and Hannan, 2000). This encourages new producers to conform to category expectations and respect genre boundaries. In supplementary analyses, we examined whether the deleterious effects of competition intensify as density continues to increase, pushing producers to differentiate. We included both first- and second-order weighted density to model this potential curvilinear relationship. Since the second-order effect was not significant and its inclusion did not improve model fit, we only report the first-order weighted genre density in our models here.

We included a control for the number of years since the first film classified under each genre was released. Audiences tend to have well-developed expectations about movies in familiar genres because past offerings provide a basis for forming expectations regarding the key elements of a film (Bettman, 1979; Desai and Basuroy, 2005). Genre age may increase the familiarity market participants have with a genre and, as a result, increase the tendency for producers to look outside the genre to enhance the distinctiveness of their offerings (Schatz, 1981).

We also controlled for the number of films in each primary genre that ranked among the top box office hits during their release. We distinguished between the count of multiple-genre top box office hits (Num. of B.O. genre hits: multiple) and the count of single-genre films within each genre that were top box office performers (Num. of B.O. genre hits: single). We collected box office information through Variety’s All-Time Film Rental Champs rankings, Bowser (1990) and Koszarski (1990). Records of the box office performance of films for the early years of the industry are limited. For years 1914-1924 we obtained yearly data on the top three films, for years 1925-1929 on the top five films, and from 1930 onwards on the top ten films.

Film-level control: We also included an indirect measure of whether each was a high budget production. Films with larger budgets tend to use more expensive resources that might affect the choice to hybridize as a form of differentiation (e.g. producers can employ stars and have lesser need to further differentiate, or conversely may use resources to build sets that fit different genre conventions). Since no systematic data are available on film budgets over the entire observation period, we use as a proxy a dummy variable
that equals one when AFI reports that a film was produced using then-more costly technologies (color photography, three dimensional imaging, and various wide screen formats) and zero otherwise.

**Producer-level controls:** We included several controls reflecting characteristics of the production companies listed in AFI for each of the films. The first reflects whether or not the film’s production company was new to the film industry (**New production company**). To produce this variable, we first constructed the life histories of production companies through the release dates of the films they made using the AFI data. Production organizations enter the population with the release of their first film. If a film was released during the first year a company appeared in the AFI data, this variable was given a value of one; otherwise, zero. We also constructed a variable reflecting each production company’s size (**Production company size**). This reflects the total count of films released by the production company in the prior three years. Companies with greater size tend to control greater financial and social resources relative to smaller companies, which may affect their likelihood of producing multiple genre films. We also introduced a control for whether the production company was a **Major studio** or not (Schatz, 1981).

**Industry-level Controls.** Finally, to control for changes in the macro environment of this industry over time, we include yearly dummy variables into our models. In supplementary analyses, we included a year trend instead of year dummies, and added industry-level controls for average weekly theater attendance, concentration of distribution among major studios, total number of production companies, and period effects. We also introduced a control for the first three years a genre first appeared in the AFI directory, in case category mixing is viewed as less problematic when categories are emergent (Ruef, 2007). The results of our independent variables are similar in these different models. Since the yearly dummies provide better model fit, we report those below.

In our main analyses, we lagged all independent and control variables using a three-year moving window (except the contemporaneous variables of **Genre age**, **High-budget production**, **New production company**, and **Major studio**). This choice was supported by descriptions of the film production process (Bordwell et al., 1985; Bosko, 2003) and comparisons of model fit using different lagged specifications.
Estimation. We used logit models to estimate the likelihood a new film is produced as single versus multiple genre offering. We estimated our logit models with the software package STATA 9.2, clustering observations by production company to control for intra-producer correlation across films. Our models also include genre and year dummies to account for factors that may be invariant across producers in each time period or genre.

RESULTS

[INSERT TABLES 1 AND 2 ABOUT HERE]

Table 1 presents descriptive statistics for our analyses. In Table 2, we estimate the likelihood that a film is produced as multiple genre. Model 2 introduces the genre fuzziness variable to test hypothesis 1. As predicted, its effect is positive and statistically significant. Increasing proportion of films that are partial members of a genre increases the odds that a film that belongs primarily to the genre will be a hybrid. The effect seems strong in substantive terms. A one-standard deviation increase in fuzziness increases a film’s odds of spanning multiple genres by 106%.

Among the control variables, we find that films that are high budget productions are more likely to be hybrids. We do not find any other consistent significant effects of control variables across our models.

Model 3 adds the variable measuring the diversity of genres affiliated with the primary genre of which the film is member. In support of Hypothesis 2, we find a positive and significant effect for this variable. This suggests that a new film is more likely to span boundaries if the films in its primary genre are associated with more diverse alter genres. This magnitude of this effect is smaller relative to the effect of fuzziness: a one-standard deviation increase in diversity of affiliated genres increases a film’s odds of spanning multiple genres by seven percent.

Model 4 adds first- and second-order subject similarity to test hypotheses 3 and 4. The first-order effect of similarity is negative and significant, supporting our expectation that increasing similarity of topical subjects of films within a genre reduces the odds that a new film will span genres. The second-
order term has a positive and significant effect on the likelihood of genre spanning. At higher levels of similarity, overlap in product niches intensifies and producers seek to incorporate features from different categories as a way of differentiating their offers.

Figure 1 depicts a graphical representation of the U-shaped effect of subject similarity on the multiplier of the odds of producing multiple genre films. The multiplier reaches the minimum when similarity is 0.35, well within the range of our data.

[INSERT FIGURE 1 ABOUT HERE]

Overall, we found support for our hypotheses regarding forces shape category spanning among producers. To further investigate our predictions, we considered several plausible concerns with our findings. The first is that very high similarity of subjects may encourage hybrid strategies not because producers seek to differentiate, but because they help reduce the risk associated with uncertainty in audience reception of a certain category. If the tendency to differentiate is a function of risk, then producers with more at risk (i.e. with higher budget films) should be more inclined to span genres. While we found some evidence of this effect (a significant positive effect of high budget), we found support for our hypotheses beyond this control.

A second concern is that the findings regarding fuzziness and subject similarity may be driven by processes of resource partitioning rather than the more cognitive process we posit. Resource partitioning theory argues that, in markets in which environmental resources are highly concentrated, producers residing in high-resource positions often come to enjoy scale-based advantages in areas such as production, marketing, distribution, etc. (Carroll, 1985; Boone, van Witteloostuijn, and Carroll, 2002; Carroll, Dobrev, and Swaminathan, 2002). As these producers exploit scale economies, the concentration of production among category producers increases. In such contexts, producers who come to enjoy significant scale economies are likely to be highly routinized, applying processes at large scale in a consistent, standardized fashion and, as a result, promoting homogeneity in the types of products offered (Peterson and Berger, 1975; Hannan and Freeman, 1984; Carroll and Hannan, 2000; Peterson and Anand, 2004; Carroll and Khessina, 2005). At the same time, research on resource partitioning processes holds
that a key by-product of increasing generalist concentration is the opening of opportunities outside the market center where specialist producers can thrive and proliferate (Carroll, 1985; Carroll, Dobrev, and Swaminathan, 2002). If these specialists try to differentiate through hybrid offerings, then increasing producer concentration within a genre may be the source of both increasing homogeneity of producers’ offerings (i.e. lower fuzziness and greater subject similarity) and increasing pressure towards differentiation. To test this alternative account, we include a variable reflecting the degree to which production of films is concentrated among the five most prolific production companies within each genre over moving three-year windows. The effect of this variable is non-significant, while the effects of our main variables remain significant.

A final concern is that increased fuzziness and diversity of affiliated genres may encourage genre spanning not by weakening the genre template and encouraging innovation, but simply by providing additional models for genre spanning that producers can copy. In final supplementary analyses, we decomposed the multiple genre offerings of production companies into two groups: those that matched genre combinations seen among recent films, and those that represented different combinations. This distinction is important in determining whether producers’ hybrid offerings are mimetic (i.e. replications of existing models of multiple genre films) or innovative combinations. We estimated a multinomial logit model of the likelihood that a producer’s offering will fall into one of three types: (1) single genre, (2) a mimetic hybrid (i.e. a multiple genre combination that matches genre combinations released in the previous ten year period), and (3) an innovative hybrid (i.e. non-matched multiple genre combination). Our findings show that the effects of fuzziness are significant (p<0.01) in the predicted directions for both mimetic and innovative multiple genre combinations. However, diversity of affiliated genres has a significant positive effect for likelihood of innovative but not mimetic hybrids. This suggests that diversity in extant hybrid offerings specifically breeds encourages greater innovation in future genre combinations. More investigation into this pattern of effects is needed.

4 In our dataset, 12 percent of new production companies’ films were mimetic hybrids while approximately 1 percent were innovative hybrids. We estimate our models using the robust function and clustering observations by production company.
DISCUSSION

The aim of our study was to develop understanding of how mechanisms of structuration of market categories influence the tendency of producers to produce hybrid versus pure-category offerings. The results provide evidence of several forces driving hybridization among producers. We find that genres with fuzzier boundaries provide less defined models for organizing film production and induce producers to span genre boundaries through their film offerings. The diversity of alter genres also contributes to this process by fragmenting the template for production even more, further increasing the likelihood of spanning genres. Finally, while increasing similarity of subject matter promotes the formation of clearer templates for organizing, high levels of similarity increase producers’ competitive overlap and instill the seeds of differentiation by encouraging producers to position away from central tendencies of a genre. Overall, our findings point to the iterative paths through which producers’ positioning decisions and categorical opportunities and constraints evolve in markets with multiple product categories.

With its focus on cognitive, institutional, and competitive processes, our study relates to a wide range of literatures. A key issue institutional theory is discerning how change is possible when institutions are durable and actors within a field are subject to pre-existing logics (Clemens and Cook, 1999; Scott, 2001; Rao, Monin, and Durand, 2005). We find that different forces work simultaneously to encourage versus inhibit producers’ choices to span categories and thereby drive change in existing categorical understandings. Our results highlight that the power of institutional constraints depends on the position of categories vis-à-vis one another as well as the internal consistency of category features. In doing so, we extend the tradition within institutional theory that considers how existing schemas and models give rise to variation in the practices, features, and behavior organizations adopt (Clemens and Cook, 1999; Schneiberg, 2007, King, Clemens, and Fry, 2007).

Our study also contributes to current research in organizational ecology. Organizational ecologists have shown a longstanding interest in how the distribution of competitors within a category shapes producers’ positioning choices along a variety of dimensions. In our study, we consider how the
pressures of differentiation shape the decision of producers to cross established category boundaries in their offerings. We find support for the notion that high similarity of category offerings around key product features drives producers to differentiate new offerings through category spanning.

Currently, a large number of studies have demonstrated various incentives for producers to choose to conform rather than straddle established category boundaries. By contrast, less is understood about the forces that encourage category mixing (but see Zuckerman et al., 2003). Such recombinations of category elements are a key driver in the blending of distinct market categories (Hannan and Freeman, 1986). Accordingly, our account has examined various factors influencing the tendency towards hybridization among producers.

Finally, our study can inform research that addresses the role of cognitive structures in strategy. Previous work has shown how producers’ decisions to differentiate or conform to market categories affect their performance – a broad term representing outcomes such as survival, institutional fitness, and financial returns (Porac, Thomas, and Baden-Fuller, 1989; Porac et al., 1995; Deephouse, 1999). The prescription coming from this literature is that producers should maintain a balance on the competitive cusp, the tradeoff between being different and being the same. However, the processes that influence such decisions have received comparatively less attention (an exception is Dobrev (2007), which finds that position moves by organizations are strongly conditioned by the actions of peer organizations).

These connections highlight avenues of future research that will extend this study and continue to address questions at the intersection of institutional, ecological and management theories. In the current study, we investigated the forces that shape the general tendency of producers within a category to incorporate elements from external categories. Since the forces we have drawn attention to have a common rooting in the overall positioning of existing producers, perceptions of the market structure and the impact this will have on producers’ decision-making can be usefully modeled as a collective phenomenon (Dobrev, 2007). Yet, there are likely to be important differences by producer type. For example, producers new to an industry may have greater flexibility and freedom to respond to changes in the structure of the market relative to more experienced producers. And producers who have previous
experience with diverse genres may be more likely to produce hybrid offerings than producers with a more specialized background. Research investigating how different types of producers are differentially influenced by the forces highlighted in our study would enhance current understanding of the mechanisms driving category spanning.
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Rao, H., and J. V. Singh  

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Ruef, M.  

Schatz, T.  

Schneiberg, M.  

Sørensen, J. B.  

Stark, D.  

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Warshow, R.  
Weaver, W. R.

White, H. C.

Zerubavel, E.

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Zuckerman, E. W., and T.-Y. Kim

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<td>(.03)</td>
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*** p<0.01, **p<0.05, *p<0.10

*includes fixed effects for year and genre; N(obs) = 17,007; N(clusters) = 1,725
Figure 1.
The effect of subject similarity on the odds of producing a multiple genre film