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Resource Partitioning, the Founding of Specialist Firms, and Innovation: The American Feature Film Industry, 1912–1929

John M. Mezias • Stephen J. Mezias

Department of Management, University of Miami, 414 R Jenkins Building, Coral Gables, Florida, 33124, jmezias@miami.edu

Department of Management/Organizational Behavior, New York University, 44 West 4th Street
New York, New York, 10012, smezias@hotmail.com

Abstract
Past research has established that large bureaucratic firms are less innovative than other firms. This reduced innovativeness is likely to be exacerbated when large firms engage in market control. In cultural industries, the effects can be especially pernicious, resulting in the failure to provide audiences with artistic quality or product diversity. We investigate the population dynamics of one cultural industry: the early American feature film industry. Specifically, we examine the hypothesis that concentration among large generalist firms will be associated with higher rates of foundings of specialist producers and specialist distributors. We also investigate the question of whether these specialists are more innovative. Specifically, we examine the hypothesis that specialists were more active than were generalists in the creation of new film genres in the early years of the American film industry. We find that increased concentration among generalists had a positive effect on foundings of specialist producers and specialist distributors, and that the specialists were more active in the creation of new film genres. Implications of these findings for future research, both on cultural industries and on the population dynamics of the founding of specialist firms, are discussed.

(Innovation; Resource Partitioning; Founding; Cultural Industries; Feature Films)

The so-called independent film production companies dominated the 1996 Academy Awards. Of the five nominees for best picture, a Hollywood studio produced only one. Van Gelder (1996, p. 9) described the phenomena of the rise of the much smaller and more specialized independents, asserting that the films produced and distributed by these firms demonstrated “...their dominance over the products of the Big Hollywood studios.” Despite somewhat greater success of studio films in the Academy Awards during the subsequent two years, independent films continue to command attention. This continuing trend was epitomized by the surprise win for best picture of 1998 by Shakespeare in Love.

One of the more interesting aspects of the recent attention given to independent producers—especially during the period since the 1996 awards—was the linking of these firms with innovative products and artistic freedom. Weinraub (1997, p. 11) quoted the prominent actress, Jodie Foster as follows: “Independents are not so much a financial state of mind but a creative state of mind. Studios . . . want the most risk averse films. Quality films that studios used to make aren’t on their agenda. That’s where the independents come in.”

These recent developments in the film industry are consistent with differences among organizations, particularly with regard to the degree of product innovation. Summarizing the literature on innovation, Mezias and Glynn (1993, p. 77) stated the following: “Traditionally, organizational size, formalization, and complexity have been viewed as obstacles to innovation.” Thus, the presence and vitality of smaller, less structured, and relatively specialized firms may be crucial to the ability of an industry to generate needed innovations. The failure to do so may be especially damaging in cultural industries, reducing both artistic quality and product diversity; this failure to serve audiences can be made even more acute where a few large firms exercise market control (Perrow 1986, p. 184).

The increased visibility of high quality films from smaller, more specialized producers and distributors seems to suggest that they are something new or different. In fact, such smaller specialized firms have existed along
with a few dominant firms in the U.S. feature film industry since its emergence in the early years of this century (Mezias and Kuperman, forthcoming). In this study, we begin with the development of an ecological perspective on such a bifurcation of the population firms within the film industry. Specifically, we use the resource-partitioning model to predict that the presence of large, generalist firms in a highly concentrated feature film industry will increase the foundings of strategically specialized firms.

The basic resource-partitioning argument is straightforward: Within a population, large generalist organizations compete with each other to occupy the center of the market. This competition for similar resources frees up peripheral resources that are often exploited by strategically specialized organizations within the population (Carroll 1985). So, as concentration among generalists increases, the environment becomes more munificent for specialist organizations that utilize different resources. Consequently, increasing concentration among generalists—which decreases the vital rates of generalist organizations—actually increases the vital rates of specialist organizations.

To support this claim in the context of the beginnings of the American feature film industry, we will discuss the emergence of the large firms that eventually came to be known as the Hollywood studios. As these firms grew, high levels of concentration in the industry were the result, with a few highly similar, vertically integrated firms dominating the production and distribution of films. As the dominance of these firms increased, the resource-partitioning model predicts that foundings of specialist firms will increase. Our first objective will be to provide evidence that this happened during the emergence of the American feature film industry.

Our next objective will be to assess the relative innovativeness of these specialist firms during the early years of the American feature film industry. In a study of the microprocessor market, Wade (1996, p. 1241) found that innovations were more likely to come from small firms entering after a dominant technology had emerged. However, as he noted "... the number of entries and analyzable events was relatively small." As a result, he suggested that this finding "... should be taken as suggestive rather than definitive." By examining more systematic evidence concerning the relative innovativeness of specialists, we increase the power of the test by providing a larger sample. The sharp historical, industry, and technological differences in the settings of the two studies augment the robustness of any confirmation of Wade's (1996) result.

We proceed as follows: The next section provides a brief outline of the early history of the feature film industry in the United States. The subsequent section will discuss the resource-partitioning model and detail the research hypotheses suggested by this model. We proceed by discussing a measure of innovativeness among specialist and generalist firms. Following that, the data, method, and results will be reported. We will conclude with a discussion of the implications of our findings for the study of cultural industries, the ecological and resource-partitioning models, and the relative innovativeness of specialists.

**Evolution of the Early Feature Film Industry**

Examining the American feature film industry beginning with its birth in 1912 and ending with 1929 provides an opportunity to track a cultural industry from its inception to the first stages of its development into a major industry. We chose the demarcation of 1912 as the beginning of the early feature film industry because the first companies to produce or distribute feature length films emerged in this year (Mezias and Kuperman, forthcoming). While 1913 marked the first emergence of a generalist firm, the population began a year earlier with the founding of specialist producers and distributors. We believe that 1929 is the appropriate end of the early feature length film industry because it demarcates the period immediately before two dramatic changes altered the industry. The first was widespread introduction of talkies. Cook (1981, p. 243) argued that 1929 ended an era in film because of the "near total conversion to sound by the end of 1929 which radically changed the structure of the film industry and revolutionized the practice of cinema all over the world."

The second was widespread integration by generalists into film exhibition (Mezias and Kuperman, forthcoming).

These eighteen years cover a period in which this industry underwent phenomenal growth, with the number of annual releases jumping from a handful of films to almost a thousand films (Mezias et al. 1996). Also, attendance at movies tripled during this period. One of the major challenges facing the entrepreneurs who spearheaded the emergence of the feature film industry was the development of organizational infrastructure capable of handling the demands of feature film production (Mezias and Kuperman, forthcoming).

By comparison with the production of short films, the production of feature-length films required the development of new organizational and creative skills. In terms of film production, longer narratives had to be sustained, requiring longer production times and bigger budgets.
The organizational solution, first developed by Thomas Ince, was the central producer system, which was widely adopted by almost all major producers in very short order. This system gave primary responsibility for each film to a single person, allowing it to be treated as a unique product while monitoring costs and maintaining quality (Koszarski 1990).

A second major challenge faced by those who developed the new industry of feature film production concerned the distribution of films. During the era of short films, turnover of product had been very rapid as the films themselves were of such a short duration that the potential audience could be exhausted fairly quickly. Distribution was handled by relatively informal exchanges that were in close geographic proximity to the theaters that showed the films and were more like spot markets than well-defined organizations. These independent exchanges were organized somewhat toward the end of the era of short films into umbrella organizations such as the Motion Picture Distributing and Sales Company and General Film Company. However, once feature-length films became dominant, with longer exhibition times and less rapid turnover of films, a new form of distribution emerged. This involved formal organizations that oversaw the distribution and promotion of films (Mezias and Kuperman, forthcoming).

Meeting these challenges—especially the rapidly growing centralization of distribution—resulted in the creation of increasingly larger organizations. On the production side, the demands for greater coordination and materials costs resulting from the switch from short to feature-length films threatened the volume of films. One solution to this problem was the creation of ties between the increasingly powerful distribution organizations and the production firms. Eventually, some of these alliances resulted in vertical integration, combining both production and distribution. The first of these integrated firms appeared in 1913 after Universal absorbed affiliated producers. Pathé and Fox Film Corporation quickly followed suit. World Film Corporation took a different route by being founded as a generalist firm in 1914 with substantial Wall Street financing and story material provided by Broadway’s Shuberts (Mezias and Kuperman, forthcoming). The rise of the vertically integrated firms that would come to dominate film production and distribution in the next few years had begun. The eventual result was the founding of the Hollywood studio system that persists in a somewhat altered form to this day.

Even in the early years of its development, the feature film industry was beginning to show the emergence of two different organizational forms. On the one hand, there was the rise of generalist firms, committed to a strategy of vertical integration and engaged in both the production and distribution of films. On the other hand, there was the growth of specialist firms, which had not vertically integrated because of their commitment to a more focused strategy of either production or distribution of films. Figure 1 illustrates the percentage of films produced and distributed by generalists between 1912 and 1929. The importance of ties among firms is illustrated by the fact that the market share of generalists for production and distribution differ. In addition to distributing the films they produced, generalists also distributed films produced by specialists. As a result, the number of films produced and distributed by generalists are not always equal. Further inspection of Figure 1 also reveals that the vertically integrated firms came to dominate both the production and distribution of films quite rapidly. Indeed, the generalists’ share of both the production and distribution of films exceeded half the market by 1917. The rise of vertically integrated generalist firms that controlled the vast majority of both production and distribution is one of the major developments that occurred during the early years of the film industry. It is worth noting a key fact relevant to the resource-partitioning argument: This rise in dominance came at a time of increasing generalist concentration. By 1929 the number of generalist firms had decreased by approximately 50% from its high point in 1925, even as their share of both production and distribution continued to increase.

Despite the overwhelming domination of the industry by generalists, both in terms of production and distribution, specialist firms did not disappear. In 1929, there were twice as many specialist producers as generalists, and an approximately equal number of specialist distributors. In fact, this is the crux of the resource-partitioning argument: A high concentration among large generalist firms drawing on the same environmental resources leaves open the possibility that firms will arise to occupy specialized niches not served by large generalists. Our analysis of the population dynamics of generalists and specialists is focused on providing evidence to support this resource-partitioning claim.

Furthermore, the meaning of these ecological arguments may be especially important in the context of a cultural industry. As the observers of the 1996 surge of independent films noted, the modern independent film companies are making films and serving audiences that the large studios had neglected. It is possible that the vibrancy, creativity, and innovation that may renew interest in cultural products and even culture itself depend vitally on the presence of firms that occupy these specialized niches. This is the crux of our interest in the relative innovativeness of specialist firms: Were specialist firms
more innovative than generalist firms during the early years of the American film industry?

**Research Hypotheses**

**The Population Dynamics of Generalists and Specialists**


Following the lead of these authors, we investigate the early years of American feature film industry beginning with its birth in 1912 and ending in 1929. We use a resource-partitioning model to study the foundings of specialist firms during these early years of the American feature film industry. The basic argument is as follows: Organizations pursuing different strategies within the same population should experience varied effects from competition with larger firms dominating the market (Carroll 1985, Hannan and Freeman 1989, Carroll and
Wade 1991, Swaminathan and Wiedenmayer 1991, Barnett 1991). Carroll (1985) labeled this process resource partitioning; one of its key predictions is that concentration among large, generalist firms will increase the founding rate of firms pursuing a specialist strategy within the same population. For example, generalist firms likely compete for resources in the center of an industry. Concentration among generalists and their competition for "central resources" creates an opportunity for firms that can utilize the resources on the fringes. Testing this model, Carroll (1985) found that concentration among generalist newspaper firms increased the founding rate of specialist newspaper firms.

As Wade (1996, p. 1234) noted, "...models using concentration to investigate resource partitioning should be tested only after scale economies become significant." Despite the fact that our study examines the emergence of a new industry, we believe that significant scale economies existed from the outset of feature film production. In part, this is due to the fact that short films had been in existence for nearly two decades prior to the release of the first feature film in 1912. Significant scale economies for film production—such as spreading out the costs of equipment, stages, and studios—had developed during the era of the production of shorts. Similarly, the development of an infrastructure for the distribution of short films had created scale economies. For example, by 1912 firms enjoyed scale economies from spreading the cost of expensive film duplication equipment needed for distribution to multiple places over many different films. These scale economies only increased in the wake of more capital intensive feature films and the emergence of national distribution and advertising (Mezias and Kuperman, forthcoming).

Based on this, we study resource partitioning during the emergence of the American feature film industry. To do this, we partition firms in the early film industry into generalists and specialists. The mutualist argument of the resource-partitioning model—first put forth by Carroll (1985)—is that concentration levels among the generalist firms will enhance the vital rates of specialist firms. Our specific interest is in the relationship between concentration among generalist firms and the founding of specialist firms. We state this argument formally as follows:

HYPOTHESIS 1. Greater concentration levels among generalists will have a positive effect on founding events of specialists.

Innovativeness Among Generalists and Specialists

There is a large body of literature suggesting that a disproportionate amount of innovation in organizational populations may be done by small firms (Kanter 1983). In fact, our summary of the discussion that followed the 1996 Academy Awards focused on the more innovative films of the companies characterized as independent of the studios. Wade (1996) found evidence to suggest that innovations were more likely to come from small firms entering the microprocessor market after a dominant technology had emerged. We were interested in investigating whether there was evidence that specialist firms were more innovative during the early years of the American feature film industry.

Interestingly, some measures of innovativeness that might be appropriate in the context of the modern feature film industry, such as garnering awards, critical acclaim, or a massive box office opening, either cannot be measured, are not relevant for this period, or both. The Academy Awards and other well-known indicators of critical acclaim were not established until the late 1920s. The concept of the massive opening also was alien in this era, with films opening only in a few select cities before slowly moving out into the rest of the country. Also, for much of the period of our study, box office figures are extremely unreliable (Mezias and Kuperman, forthcoming).

At the same time, it is clearly true that important innovations characterized the emergence of feature-length films. This new product allowed for innovations in story line and character development that were not afforded by short films. What ensued was a golden era of theme development that witnessed the emergence of many of the filmmaking genres that still exist in the industry today, such as science fiction, western, horror, and mystery. As Bowser (1990, p. 167) noted: "Genre films certainly existed before this period, but with the organization of the industry they were incorporated in the system of production, distribution, and exhibition." Continuing the discussion of the importance of genre creation and transformation during this period, Bowser (1990, p. 169) interpreted film industry coverage in the popular press of the day as signaling "...some of the changes in film genres and subjects that were taking place in the midst of the shift from short film production to the feature." One hypothesis consistent with the claim that specialist firms are more innovative than generalist firms is that specialist firms would be more likely to participate in the creation of genres and subjects that accompanied the emergence of feature-length films.

HYPOTHESIS 2. Specialist firms will be more likely to participate in the creation of film genres.

Data and Methods

The Sample

The two volumes of the American Film Institute (AFI) Catalog of Motion Pictures: 1911–1920 (American Film
Institute 1988) and 1921–1930 (American Film Institute 1971) served as the primary sources of data on companies and their strategies. The AFI Catalog comprehensively lists all feature-length films released during the sample period. Since we focus on the commercial population, all films handled by government agencies (i.e., War Department, Department of Health, etc.) have been removed from the database. Films were documented by their initial release date, including month, day, and year. Reported release dates are very accurate estimates for distribution, but in establishing the presence of producers we also use release dates to approximate production dates. Although information is sketchy, it is quite clear that the time between production and distribution during this era was much shorter than it is today. For example, Musser (1991, p. 469) indicates that for Famous Players, the first company to regularly release full-length feature films, the time from production to release was one month. Consequently, we believe that film release dates are a good approximation for production dates as well.

Our data, which is organized by month, consist of all commercial firms listed in the AFI Catalog. To construct a database that includes all firms that produced, distributed, or produced and distributed films in the United States between 1912 and 1929, we had to make certain extrapolations from the available data. The following text discusses these extrapolations, the rationale behind them, and the procedures utilized to implement them:

1. The 1911–1920 volume details production and distribution credits for every film and provides explanations when credit information cannot be found. However, the 1921–1930 volume was edited differently: The name of the distributing company is sometimes omitted without explanation. AFI informed us that in these cases, the producer almost always handled distribution, but gave us a heuristic for checking individual firms: When plot information was given, AFI informed us that the producers handled distribution. In the few cases where plot information was not provided, and the distributor was unknown, the following rules were sufficient: (a) distribution credit went to the producers that had three or more such occurrences in any year; (b) any company producing a film without plot information was given distribution credit if they were documented as generalists in the same year.

2. The AFI Catalog does not provide background information on company histories. Documenting mergers and acquisitions required an extensive review of film history. We used the following additional sources to construct this history: Balio (1976), Berg (1989), Bowser (1990), Eyman (1990), Hampton (1931), Highan (1973), Jewell and Harbin (1982), Kozarski (1990), Lahue (1971), Slide (1986), and Slide and Gevinson (1987). We discovered that 15 firms in our sample began as subsidiaries of already existing firms. These subsidiaries were removed and their film counts were added to their parent company’s totals.

3. When researching the formative years of any developing industry, some record-keeping and documentation problems emerge. The American Film Institute (1988, p. 225) noted, “The determination of exact names was as difficult for corporate as personal names, and, in some cases, nearly impossible. Research among reviews, advertisements, and news items often resulted in conflicting information. For these cases, we gave the most credence to the name as it appeared in company records, followed by advertisements, copyright records and studio directories.” All corporate or personal credits listed by AFI as a unique entity were included in our database. However, given the uncertainty of those early, turbulent years, some unique names may be the result of inadequate or inconsistent documentation and may not represent unique corporations. Entities with personal names cause most of the problem. For these cases, we created a rule-based heuristic to identify questionable cases and merge records when appropriate. First, in the same or consecutive years, company names that were identical except the ending of Co., Inc., or Corp. were combined into a single record. Secondly, in the same year, company names that were proper names or proper names followed by anything, e.g. Thomas H. Ince, were combined with any entities that were called by the same proper name followed by anything. Finally, in consecutive years, company names that were proper names were combined with any entities that were called by that same proper name regardless of what other words were included in the title of the company.

Resource Partitioning and the Founding of Specialist Firms

In order to use these data to study the population dynamics of generalists and specialists, we had to categorize organizations based on their strategies. Our population was categorized into three mutually exclusive and exhaustive categories based on the activities of the firms. The first category included generalist producer-distributors; any firms that were involved in both production and distribution activities in a given year were placed in this category. The second category included all specialist producers; any firms that only engaged in activities resulting in the creation of feature films in a given year were placed in this category. The third and final category included all specialist distributors; any firms that only engaged in activities to ensure that the films were available
to potential exhibitors in a given year were placed in this category.

**Dependent Variables.** To test the resource-partitioning model, the foundings of specialist firms were tabulated for each month starting in January of 1914 to December of 1929. We did these tabulations separately for the two kinds of specialist firms, resulting in two dependent variables defined and named as follows: (1) **Producer Foundings** is defined as the number of new firms founded as specialist producers in the population during a given month. (2) **Distributor Foundings** is defined as the number of new firms founded as specialist distributors in the population during a given month.

**Independent Variables.** To test the resource-partitioning model, we calculate the concentration level of generalist producer-distributors with respect to both production and distribution. This allows us to run models to capture the effects of concentration, separated by production and distribution, on specialist foundings events. To do this, we created two independent concentration variables. Carroll (1985, p. 1275) used GINI coefficients to measure “. . . resource concentration in the general mass market.” The GINI measures concentration by assessing the variability in the distribution of firms with respect to either film production or film distribution in a given year. The formula is: $1 - \frac{G^2}{\mu}$, where $G$ is defined to be the absolute mean difference in film production or distribution for all pairs of generalists in a given year, and $\mu$ is defined to be the mean of the variable of interest, either film production or film distribution, in that same year (Dorfman 1980). In his study, the concentration of the generalist mass market corresponded to the concentration of generalist newspapers. Following his lead, our generalist concentration variables are GINI measures of concentration levels only among generalists.

For each year, generalist film production and distribution were determined separately. This enabled annual calculation of GINI concentration coefficients for both production and distribution. These concentration variables focus on the effects of competition as predicted by the resource-partitioning argument. These variables help assess how generalists concentration for production affects the foundings of specialist producers and how generalists concentration for distribution affects the foundings of specialist distributors.

- **Production GINI** is defined as the GINI estimate of film production concentration among generalists during a given year.
- **Distribution GINI** is defined as the GINI estimate of film distribution concentration among generalists during a given year.

**Control Variables.** We included three variables to control for the effects of various measures of competition that past research would suggest may impact founding rates. First, we used the most frequent ecological measure of competition within a population: the count of organizations-density, in the context of the density dependence model. Baum (1994) articulated the density dependence argument of competition: Initial increases in density increase the legitimacy of the population (mutualism), while subsequent increases in density induce competitive effects. Because the density dependence argument suggests a curvilinear relationship, we controlled for effects of both density and density squared on foundings. These two control variables focus on the effects of competition and mutualism as predicted by the density dependence argument, and are measured as follows:

- **Density** is defined as the number of firms in the population, measured by counting the number of firms during a given year. Past research would suggest density to have a positive effect on foundings.
- **Density Squared** is defined as the square of density divided by 1000. Past research would suggest density squared to have a negative effect on foundings.

Mass dependent competition suggests that increases in total population size will have a competitive effect on organizations. To do this, we must account for organizational size as well as the count of organizations. Although “traditional” measures of size—such as number of employees, budgets, or revenues—are not available for the early feature-film industry, Winter (1990) argued that researchers should use capacity-based measures of size. Following his suggestion, we developed a metric for assessing organizational size based on the number of films handled by an organization, which we believe is a good approximation for capacity. Specialist producer size was measured by counting the total number of films produced. Specialist distributor size was measured by counting the number of films distributed. Generalist size was measured by counting the total number of films handled: the sum of all films produced and distributed. For each year, population mass was determined by summing the size for all organizations in the population. The mass variable focused on competitive effects as predicted by the mass argument and was measured as follows:

- **Mass** is defined as the annual sum of the size of all firms in the population divided by 1000. It is predicted to have a negative effect on foundings.

As other authors (e.g., Dacin 1997) have noted, economic forces may well effect ecological outcomes—organizational foundings likely increase during periods of economic expansion. To control for this plausible explanation of organizational foundings, we incorporated the annual gross national product (GNP) growth rate as a control variable. Economic conditions fluctuate and, follow-
The Innovativeness of Specialist Firms

The distinction between generalist and specialist firms is also central to our test of our hypothesis that specialists will be more likely to participate in the creation and transformation of film genres. We will test this by comparing the participation of specialists in the population as a whole with their participation in the production and distribution of films within a genre in the first year that genre appeared. Bowser (1990) argued that the emergence of feature-length films resulted in the creation and transformation of film genres. To track this innovation of genres we relied once again on the AFI Catalog, which used 27 genres to categorize films during the years from 1912 to 1920. The AFI Catalog provides information regarding the year in which the first feature-length films that they categorized in each genre appeared. For purposes of our analysis, we considered all firms that produced or distributed films in any of these 27 genres during the first year that it appeared as having innovated. We interpret the claim that specialist participation in new genre creation will be disproportionately large to suggest predictions about both specialist producers and specialist distributors.

First, the proportion of films produced within an emerging genre attributable to specialists will be more than the proportion of films in the population produced by specialists during the same year. Second, the proportion of films distributed within an emerging genre attributable to specialists will be more than the proportion of films in the population distributed by specialists during the same year.

For each year that a new genre emerged, we computed these proportions by creating variables equal to the counts of films produced or distributed by specialist firms both within the genre and in the population as a whole. The null hypothesis is that there should be no difference between the proportion of specialists within the genre and the proportion of specialists in the population as a whole. The alternative hypothesis is that the difference between the proportion of specialists within the genre and in the population as a whole should be positive. Thus, the representation of specialists within the genre exceeds their representation in the population as a whole, which we interpret as indicative of a higher level of innovativeness among these firms. To assess these null and alternative hypotheses, we use nonparametric tests. McClave and Benson (1988, p. 944) summarized the benefits of these tests as follows: “These techniques . . . require fewer or less stringent assumptions concerning the nature of the probability distributions of the populations . . . .” The first is the sign test and the other is the Mann-Whitney-Wilcoxon test.
Results
With respect to the tests of the first hypothesis, descriptive statistics for all variables are reported in Table 1, and a correlation matrix for all variables is provided in Table 2. Results for estimation of specialist producer foundings and specialist distributor foundings models are reported in Table 3. For both models, we ran the Poisson and negative binomial regressions and indicated which regression was used in the table under the sample size. This choice of which regression to use is based on the alpha variable: A significant alpha indicates overdispersion or unexplained heterogeneity in the data. When this is indicated, as it is for our specialist producer model, then negative binomial regression should be used because it has an additional scaling parameter that controls for heterogeneity. When alpha is not significant at the 0.05 level, as is the case for our specialist distributor data, then the Poisson model can be used.

An alternative method for determining which model to use, based on a comparison of the log likelihood of different estimation models, yielded the same choice between Poisson and negative binomial estimation for our two sets of data on specialist foundings. The number of observations was 192 for both models, and each model included a constant, which controls for the base rate of foundings. Positive coefficients indicate that the variable is associated with increases in the number of foundings for the specialist organization. Conversely, when coeffi-

### Table 1  Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Producer Foundings</td>
<td>6.583</td>
<td>3.738</td>
<td>0.000</td>
<td>19.000</td>
</tr>
<tr>
<td>2. Distributor Foundings</td>
<td>1.896</td>
<td>1.712</td>
<td>0.000</td>
<td>8.000</td>
</tr>
<tr>
<td>3. Production GINI</td>
<td>0.630</td>
<td>0.065</td>
<td>0.455</td>
<td>0.725</td>
</tr>
<tr>
<td>4. Distribution GINI</td>
<td>0.642</td>
<td>0.055</td>
<td>0.540</td>
<td>0.717</td>
</tr>
<tr>
<td>5. Density</td>
<td>198.500</td>
<td>65.345</td>
<td>48.000</td>
<td>306.000</td>
</tr>
<tr>
<td>6. Density Squared/1000</td>
<td>43.650</td>
<td>25.719</td>
<td>2.300</td>
<td>93.640</td>
</tr>
<tr>
<td>7. Mass/1000</td>
<td>1.301</td>
<td>0.428</td>
<td>0.080</td>
<td>1.897</td>
</tr>
<tr>
<td>8. GNP Growth</td>
<td>3.644</td>
<td>6.454</td>
<td>-8.700</td>
<td>15.800</td>
</tr>
<tr>
<td>9. Producer Foundings Lag</td>
<td>6.557</td>
<td>3.766</td>
<td>0.000</td>
<td>19.000</td>
</tr>
<tr>
<td>10. Distributor Foundings Lag</td>
<td>1.896</td>
<td>1.712</td>
<td>0.000</td>
<td>8.000</td>
</tr>
<tr>
<td>11. Producer Foundings Lag Squared</td>
<td>57.109</td>
<td>60.429</td>
<td>0.000</td>
<td>361.000</td>
</tr>
<tr>
<td>12. Distributor Foundings Lag Squared</td>
<td>6.510</td>
<td>10.690</td>
<td>0.000</td>
<td>64.000</td>
</tr>
</tbody>
</table>

\[ n = 192 \text{ for all descriptive statistics} \]

### Table 2  Correlation Matrix

<table>
<thead>
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<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Producer Foundings</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. Distributor Foundings</td>
<td>0.427**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Production GINI</td>
<td>0.263**</td>
<td>0.180*</td>
<td>1.000</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. Distribution GINI</td>
<td>0.443**</td>
<td>0.302**</td>
<td>0.476**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Density</td>
<td>0.336**</td>
<td>0.023</td>
<td>0.647**</td>
<td>0.087</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Density Squared/1000</td>
<td>0.434**</td>
<td>0.025</td>
<td>0.563**</td>
<td>0.158*</td>
<td>0.974**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Mass</td>
<td>0.066</td>
<td>0.095</td>
<td>0.585**</td>
<td>-0.169</td>
<td>0.529**</td>
<td>0.380**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. GNP Growth</td>
<td>-0.206*</td>
<td>0.000</td>
<td>-0.221**</td>
<td>-0.417**</td>
<td>-0.266**</td>
<td>-0.338**</td>
<td>-0.046</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Producer Foundings Lag</td>
<td>0.509**</td>
<td>0.263**</td>
<td>0.271**</td>
<td>0.418**</td>
<td>0.397**</td>
<td>0.458**</td>
<td>0.114</td>
<td>-0.219**</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Distributor Foundings Lag</td>
<td>0.243**</td>
<td>0.102</td>
<td>0.186**</td>
<td>0.302**</td>
<td>0.024</td>
<td>0.027</td>
<td>0.097</td>
<td>0.004</td>
<td>0.413**</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>11. Producer Foundings Lag Squared</td>
<td>0.433**</td>
<td>0.252**</td>
<td>0.288**</td>
<td>0.402**</td>
<td>0.352**</td>
<td>0.412**</td>
<td>0.111</td>
<td>-0.199**</td>
<td>0.947**</td>
<td>0.405**</td>
<td>1.000</td>
</tr>
<tr>
<td>12. Distributor Foundings Lag Squared</td>
<td>0.217**</td>
<td>0.113</td>
<td>0.170*</td>
<td>0.255**</td>
<td>0.002</td>
<td>-0.003</td>
<td>0.105</td>
<td>0.045</td>
<td>0.379**</td>
<td>0.918**</td>
<td>0.362**</td>
</tr>
</tbody>
</table>

*Significant at the 0.05 level; ** Significant at the 0.01 level; \( n = 192 \)
Table 3  Regression Results for Specialist Foundings

<table>
<thead>
<tr>
<th>Variable</th>
<th>Producer Foundings</th>
<th>Distributor Foundings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.141***</td>
<td>-3.374***</td>
</tr>
<tr>
<td>Production GINI</td>
<td>1.791**</td>
<td>6.734***</td>
</tr>
<tr>
<td>Distribution GINI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>-0.017***</td>
<td>-0.012**</td>
</tr>
<tr>
<td>Density Squared/1000</td>
<td>0.049***</td>
<td>0.026*</td>
</tr>
<tr>
<td>Mass/1000</td>
<td>0.261**</td>
<td>0.736***</td>
</tr>
<tr>
<td>GNP Growth</td>
<td>0.011*</td>
<td>0.023**</td>
</tr>
<tr>
<td>Producer Foundings Lag</td>
<td>0.143***</td>
<td></td>
</tr>
<tr>
<td>Producer Foundings Lag Squared</td>
<td>-0.006***</td>
<td></td>
</tr>
<tr>
<td>Distributor Foundings Lag</td>
<td></td>
<td>-0.084</td>
</tr>
<tr>
<td>Distributor Foundings Lag Squared</td>
<td>0.008</td>
<td></td>
</tr>
<tr>
<td>ALPHA</td>
<td>0.048**</td>
<td>0.015</td>
</tr>
<tr>
<td>Chi-square</td>
<td>7.283</td>
<td>45.159</td>
</tr>
<tr>
<td>p-value</td>
<td>0.007</td>
<td>0.000</td>
</tr>
<tr>
<td>N</td>
<td>192.0</td>
<td>192.0</td>
</tr>
<tr>
<td>Model</td>
<td>Negative Binomial</td>
<td>Poisson</td>
</tr>
</tbody>
</table>

*p < 0.1, **p < 0.05, ***p < 0.01

The coefficients are negative, the variable is associated with reductions in the number of foundings for the specialist organization.

Effects of these variables on organizational foundings of specialist producers and specialist distributors can be determined by inspection of Table 3. For both models, Hypothesis 1 received strong support: Production GINI and distribution GINI were both significant in the predicted positive direction. This result emerges even after controlling for the effects of density, density squared, mass, GNP growth, prior foundings, and prior foundings squared. This demonstrates that increasing concentration among generalists had a positive effect on specialist foundings for both film production and film distribution.

For both models, density and density squared were significant, but opposite the directions typical in other research. These findings suggest that low levels of density had a negative effect on foundings of specialist organizations and density squared had a positive effect. Mass was also significant, but opposite the expected direction based on a mass-dependence argument. This indicates that increasing size of organizations had a positive effect on the foundings of both specialist producers and distributors. It is plausible that production mass might be very different than distribution mass. We therefore ran tests to see if calculating production and distribution mass separately would affect our findings. The results indicate that using separate mass measures does not affect our findings. They are either not significant or significant in a direction opposite that expected. GNP growth was significant and positive for the foundings of specialist producers and specialist distributors. This suggests that economic growth also had a positive effect on the foundings of both specialist producers and specialist distributors. The constant was significant and positive for the specialist producer model, but was significant and negative for the specialist distributor model.

Consistent with results from other studies investigating the effects of prior foundings on subsequent foundings (Delacroix and Carrol 1983, Delacroix and Solt 1988; Ranger-Moore et al. 1991), we found some evidence of positive contagion: a significant relationship between organizational foundings in one year and foundings in subsequent years. Significant curvilinear effects were found in the specialist producer, but not in the specialist distributor models. Producer Foundings Lag had a positive effect on subsequent producer foundings and Producer Foundings Lag Squared had a negative effect on subsequent producer foundings. However, neither Distributor Foundings Lag nor Distributor Foundings Lag Squared was significant.

In Table 4, we list each of the 27 genres followed by the year that feature-length films in that genre first appeared. This table also provides the counts of films produced and distributed by specialists and generalists in that genre during this first year. While this table gives an idea of the differences among genres and the participation of generalists and specialists in each, we did not believe it was appropriate to base our analysis of participation on counts. We felt it was important to control for overall representation of firms with different strategies in both the population and the genre. Support for the hypothesis that specialists will be more likely to engage in early genre production requires that the proportion of specialists in the genre exceed the proportion of specialists in the population. Data appropriate to test support for this hypothesis are given in Table 5, which, like Table 4, lists each film genre and the year it first emerged in feature film in the first two columns.

Five genres actually began in 1912; these are noted in Table 5. Because generalists did not appear in the population until 1913, we could not examine the hypothesis that specialists were more likely to innovate in this year. Consequently, we used the second year of their existence to examine the relative innovativeness of specialists and generalists for these genres. Given the small number of feature-length films that were produced and distributed in 1912, we believe that excluding these genres for 1912 is not of great consequence. Further, if specialists are more likely to enter a genre early in its existence, then excluding the first year of a genre’s emergence mitigates against finding that specialists are more innovative.
The data in the third through sixth columns all pertain to proportions of films produced or distributed by specialists in the year of the emergence of the indicated genre. Column 3 gives the proportion of films produced by specialists within the genre. Column 4 gives the proportion of all films produced by specialists in the population. Column 5 gives the proportion of films distributed by specialists within the genre; column 6 gives the proportion of films distributed by specialists in the population. These proportions are used to test two different null hypotheses implied by Hypothesis 2. The first null hypothesis is that there is no difference between the participation of specialists in the population and in the genre in the indicated year. Thus, taking the difference of proportion within the genre and in the population yields numbers that are more likely to be positive than negative. Our alternative hypothesis is that the differences between the proportions will be positive, indicating that specialists were more active in creating or transforming genres. We test the null hypothesis against this one-sided alternative hypothesis separately for production and distribution using a sign test. For production, we reject the null hypotheses in favor of the alternative hypotheses, $p = 0.0377$. For distribution, we reject the null hypotheses in favor of the alternative hypotheses, $p = 0.0261$.

We augmented our findings from the sign test by using a more powerful, but somewhat more restrictive test: the Mann-Whitney-Wilcoxon test. This is a two-sample test that uses ranks to test the null hypothesis that the difference between two sets of numbers has a median of zero. For our data, the two sets of numbers are the proportion of specialists in the genre and the proportion of specialists in the population. Given our hypothesis that specialists are more likely to engage in early genre production, we tested the null that the median difference is zero against the one-sided alternative hypothesis that median is greater.
Table 5  Specialist Proportions in Genre and Population

<table>
<thead>
<tr>
<th>Film Genre</th>
<th>First Year</th>
<th>Specialist Proportion of Genre Production</th>
<th>Specialist Proportion of Population Production</th>
<th>Specialist Proportion of Genre Distribution</th>
<th>Specialist Proportion of Population Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adventure</td>
<td>1913</td>
<td>1.000</td>
<td>0.9825</td>
<td>1.000</td>
<td>0.9565</td>
</tr>
<tr>
<td>Comedy-Drama</td>
<td>1913</td>
<td>1.000</td>
<td>0.9825</td>
<td>1.000</td>
<td>0.9565</td>
</tr>
<tr>
<td>Crime</td>
<td>1913</td>
<td>1.000</td>
<td>0.9825</td>
<td>1.000</td>
<td>0.9565</td>
</tr>
<tr>
<td>Detective*</td>
<td>1913</td>
<td>1.000</td>
<td>0.9825</td>
<td>1.000</td>
<td>0.9565</td>
</tr>
<tr>
<td>Documentary*</td>
<td>1913</td>
<td>1.000</td>
<td>0.9825</td>
<td>1.000</td>
<td>0.9565</td>
</tr>
<tr>
<td>Drama*</td>
<td>1913</td>
<td>0.9268</td>
<td>0.9825</td>
<td>0.9250</td>
<td>0.9565</td>
</tr>
<tr>
<td>Fantasy</td>
<td>1913</td>
<td>1.000</td>
<td>0.9825</td>
<td>1.000</td>
<td>0.9565</td>
</tr>
<tr>
<td>Historical*</td>
<td>1913</td>
<td>0.7778</td>
<td>0.9825</td>
<td>0.8000</td>
<td>0.9565</td>
</tr>
<tr>
<td>Social</td>
<td>1913</td>
<td>0.8571</td>
<td>0.9825</td>
<td>0.8000</td>
<td>0.9565</td>
</tr>
<tr>
<td>War Drama</td>
<td>1913</td>
<td>1.000</td>
<td>0.9825</td>
<td>1.000</td>
<td>0.9565</td>
</tr>
<tr>
<td>Western</td>
<td>1913</td>
<td>1.000</td>
<td>0.9825</td>
<td>1.000</td>
<td>0.9565</td>
</tr>
<tr>
<td>Allegory</td>
<td>1914</td>
<td>1.000</td>
<td>0.9070</td>
<td>0.7500</td>
<td>0.7831</td>
</tr>
<tr>
<td>Biographical</td>
<td>1914</td>
<td>1.000</td>
<td>0.9070</td>
<td>1.000</td>
<td>0.7831</td>
</tr>
<tr>
<td>Comedy*</td>
<td>1914</td>
<td>1.000</td>
<td>0.9070</td>
<td>1.000</td>
<td>0.7831</td>
</tr>
<tr>
<td>Melodrama</td>
<td>1914</td>
<td>1.000</td>
<td>0.9070</td>
<td>1.000</td>
<td>0.7831</td>
</tr>
<tr>
<td>Mystery</td>
<td>1914</td>
<td>0.8571</td>
<td>0.9070</td>
<td>0.7500</td>
<td>0.7831</td>
</tr>
<tr>
<td>Northwest Drama</td>
<td>1914</td>
<td>0.8000</td>
<td>0.9070</td>
<td>0.8000</td>
<td>0.7831</td>
</tr>
<tr>
<td>Wild Animals</td>
<td>1914</td>
<td>1.000</td>
<td>0.9070</td>
<td>1.000</td>
<td>0.7831</td>
</tr>
<tr>
<td>World War I</td>
<td>1914</td>
<td>0.6867</td>
<td>0.9070</td>
<td>0.5000</td>
<td>0.7831</td>
</tr>
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<td>Espionage</td>
<td>1915</td>
<td>1.000</td>
<td>0.7999</td>
<td>0.6667</td>
<td>0.6296</td>
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<tr>
<td>Horror</td>
<td>1915</td>
<td>1.000</td>
<td>0.7999</td>
<td>1.000</td>
<td>0.6296</td>
</tr>
<tr>
<td>Instructional</td>
<td>1915</td>
<td>1.000</td>
<td>0.7999</td>
<td>0.0000</td>
<td>0.6296</td>
</tr>
<tr>
<td>Rural*</td>
<td>1915</td>
<td>0.9500</td>
<td>0.7999</td>
<td>0.8421</td>
<td>0.6296</td>
</tr>
<tr>
<td>Society</td>
<td>1915</td>
<td>0.7727</td>
<td>0.7999</td>
<td>0.6364</td>
<td>0.6296</td>
</tr>
<tr>
<td>War Preparedness</td>
<td>1915</td>
<td>0.6667</td>
<td>0.7999</td>
<td>0.6667</td>
<td>0.6296</td>
</tr>
<tr>
<td>Compilation</td>
<td>1917</td>
<td>N/A (+)</td>
<td>N/A (+)</td>
<td>1.0000</td>
<td>0.4290</td>
</tr>
<tr>
<td>Science Fiction</td>
<td>1919</td>
<td>0.0000</td>
<td>0.4645</td>
<td>0.0000</td>
<td>0.3902</td>
</tr>
</tbody>
</table>

*These genres began in 1912. Since generalists first appeared in 1913, we begin analysis in the second year for these genres.

†The only film in this genre this year was produced by an industry group, not a specific firm.

than zero. This will be supported if the proportion of specialists in the genre is greater than the proportion of specialists in the population. The alternative hypothesis is that the proportion of specialists in the genre is greater than the proportion in the population, indicating that specialists were more active in creating or transforming genres. We tested this separately for production and distribution. For production, we reject the null hypothesis in favor of the alternative hypothesis based on a Mann-Whitney-Wilcoxon statistic of 834.0, \( p = 0.008 \). The estimated median difference between the proportions for production is 0.0175. For distribution, we reject the null hypothesis in favor of the alternative hypothesis based on a Mann-Whitney-Wilcoxon statistic of 878.0, \( p = 0.0195 \). The estimated median difference between the proportions for distribution is 0.0435.

All four tests provide uniform support of Hypothesis 2. First, we reject the null hypothesis that the difference between the proportion of specialists producing films in the population and the proportion of specialists producing films in the genre is zero. This suggests that we accept the alternative hypothesis that the difference between these proportions is positive. Second, we reject the null hypothesis that the difference between the proportion of specialists distributing films in the population and the proportion of specialists distributing films in the genre is zero. Once again, we accept the alternative hypothesis that the difference between these proportions is positive. Third, we reject the null hypothesis that the median proportion of film production by specialists in the population is equal to the median proportion of film production by specialists within the genre. We reject the null hypothesis in favor of the alternative that the median proportion within the genre is more than that in the population. Fourth and finally, we reject the null hypothesis that the median proportion of films distributed by specialists in
the population is equal to the median proportion of films distributed by specialists within the genre. Once again we accept the alternative hypothesis that the median proportion of specialist distributors in the genre is greater than that in the population. All of these tests indicate that specialists are significantly more likely to participate in the production and distribution of films that mark the creation or transformation of a genre. We interpret this to suggest that specialists are more likely to engage in the production and distribution of innovative films than the generalists are.

**Discussion**

The pattern of results across the two models of foundings, those of specialist producers and those of specialist distributors, is remarkably consistent. Higher levels of specialist concentration, as measured by the GINI coefficient, were associated with a greater likelihood of foundings of both types of specialist firms. These findings emerged in a model that included a constant, which controls for the base rate of foundings; ecological variables, which control for other competitive effects; GNP growth, which controls for economic conditions; and prior foundings variables, which control for positive contagion. We interpret these findings as strong support for the resource-partitioning model of the founding of specialist firms. In addition, the results of all four tests of Hypothesis 2 indicate that specialists were more involved in the creation and transformation of new film genres.

Although previous studies have shown that concentration among generalists enhances the vital rates of specialists, few studies included population density variables. Of those that included density variables, only Swaminathan (1995) included a measure of population mass. Our study includes these previous variables as well as a control measure of economic conditions, such as GNP growth, which was significant in both foundings models. We also control for prior foundings, which significantly affected specialist producer foundings. Including these variables helps to extend the theory by controlling for possible alternative explanations of the results.

However, our contribution to the empirical study of resource partitioning goes beyond mere replication or extension to a new context. We have also provided a large sample study of the relative innovativeness of generalists and specialists in the same context where we have documented the effects of resource partitioning. Many have argued that smaller firms are more innovative (Kanter 1983). Going a step further, Wade (1996) has provided suggestive evidence that the emergence of dominant designs is accompanied by increased market entry of new technology sponsors. We have systematized these general notions in the context of the innovativeness of generalists and specialists in an environment characterized by significant effects of resource partitioning on the foundings of specialists. We have provided systematic evidence that specialists are more innovative.

Three limitations to our results are worth noting. The first limitation relates to our resource-partitioning study: The dependent variable is calculated on a monthly basis, while many of our independent variables are calculated annually. Unfortunately it is not possible to obtain monthly data for many of the independent variables, which would have been preferable. However, we do have some reasons to believe that the effects of this may not be so serious as to undermine the credibility of the study. First, the variables that are calculated monthly—including the foundings lag variable—are significant in the predicted direction. Second, some of the variables calculated annually are highly significant, notably our GINI coefficient. Third, there are plausible alternative explanations for the failure to demonstrate the significance of other annual variables. For example, density, density squared, and mass may all fail to achieve their levels of significance in the expected direction due to the rapid growth in the industry.

A second limitation is related to our study of the innovativeness of specialists: The time period for our study of resource partitioning was from 1912 to 1929, while the time period for our study of new genre creation and transformation was from 1913 to 1919. From the point of view of establishing evidence concerning the innovativeness of specialists in the context of resource partitioning, it would have been preferable if the time periods of the two studies had been identical. This leads directly to the third limitation. The level of generalist market share that characterized the time period of our study of innovation is considerably lower than during subsequent years included in our study of resource partitioning. In fact, generalist market share was greater than specialist market share for only three of the seven years included in the time period of our study of genres. By contrast, during the eighteen-year time period of our resource-partitioning study, generalist market share was greater than specialist market share in eleven years for production and in twelve years for distribution. The reason for this is that new genre creation and transformation were completed by 1919, while generalists did not dominate both production and distribution until 1917. Obviously, the selection of films for Academy Awards and nominations in recent years has been interpreted to suggest that specialists continue to be more innovative. However, the evidence concerning any potential relationship between resource partitioning and
innovation should be viewed with caution; subsequent work to replicate this finding is necessary.

Implications and Conclusions

A key implication of this research for ecological models concerns the merging of models of competitive dynamics and resource partitioning. We have shown that both variables associated with models of competition and variables associated with resource partitioning have significant effects on the foundings of specialist firms. Future studies can focus on the interaction of these factors and investigate their effect on organizational mortality and change. One key question would be whether the mortality of specialists is reduced by concentration among generalists. Another would concern whether transitions between generalist and specialist strategies are affected by concentration among generalists.

In doing this, we also believe that future work should consider possible implications of our findings that are contrary to previous ecological findings regarding the density dependence models and the competitive effects of mass. We found that density has a curvilinear effect, with low levels of density being associated with a decreased probability of foundings and higher levels being associated with an enhanced likelihood of founding. We also found that population mass had a positive effect on the founding of specialist organizations. A possible explanation for this lack of competitive effects from density and population mass may be that we are investigating effects only on the foundings of specialists. As Figure 1 illustrates, the large generalists quickly came to dominate this industry. Their output accounts for most of the population mass, so a competitive effect from mass may affect generalists, but would be less likely to affect specialists.

An alternative possible explanation for the lack of competitive effects from density and mass might focus on the role of competition in a rapidly growing new industry, such as feature film production and distribution between 1912 and 1929. The results for the density dependence model in this population are reversed: Low levels of density are associated with a lower probability and high levels of density are associated with a higher probability of founding of specialist firms. This is consistent with the conjecture that over the short run in a rapidly growing industry, only the legitimacy-enhancing effect of numbers might be observed. The negative coefficient of density indicates that legitimacy was still low in this industry when numbers were low. As numbers rose, however, the legitimacy of the feature film industry was enhanced, and foundings of specialist firms became more likely.

This finding also suggests that resource partitioning, the concentration of large generalist firms, may occur before the competitive effects of density and mass dependence take hold. However, our study alone is far from conclusive in this regard. We have shown that the foundings of specialist firms during the rapid growth of the early film industry do not conform to the predictions of density dependence. This finding will need to be extended to include other key population vital rates (e.g., the foundings of all firms and their mortality across a wider range of industries) before any conclusions can be drawn. It is our hope that this interesting and anomalous finding will trigger research designed to examine our conjecture.

We want to close the paper by returning to how we opened, addressing what we view as a key issue in cultural production—innovation in products and serving diverse audiences. Clearly one strategy, and apparently one pursued by the studios according to observers of the 1996 phenomenon of the independent film, is massification (Perrow 1986). The argument is that the large firms want only to produce blockbusters, films that will be seen by large numbers of people around the world. Beck and Smith (1996, p. 1) quote Barry Reardon, then president of Warner Brothers Distribution, making exactly this argument with respect to the success of the independents in 1996: "We’d be out of business if we had to depend on the pull of most of the films that have been nominated this year—Shine has only brought in $30 million, Sling Blade about $8.5 million, Fargo . . . $24 million . . . Warner has always leaned towards more commercial product.” These observations suggest two avenues for future research.

Clearly, a massification strategy is consistent with the finding in the innovation literature that large, complex, bureaucratic firms are less likely to innovate (Kanter 1983). This points to the issue of the relationship between size and innovativeness. It is important to note that our results do control for average size by comparing proportions of specialists in the population with the proportion in the genre. Thus, even though specialists were most frequently smaller than generalists were, and size and strategic specialization are likely to be highly correlated, we believe we have evidence that strategy might matter in determining the level of innovativeness of a firm even after controlling for size. Careful investigation is required to determine the relative importance of size and strategic specialization in promoting innovative firm activity. Future work could determine the extent to which both size and strategic specialization are associated with innovation.

A second avenue for future research is related to a question that was implicit in the discussion of the 1996 Academy Awards that opened our paper: What are the
sources of innovation in the context of a cultural industry dominated by an oligopoly of large firms pursuing a massification strategy? Our paper has provided part of the answer to this question. We have shown that the presence of highly concentrated generalists in the early feature film industry was associated with the foundings of specialist firms, as would be predicted by a resource-partitioning model. Furthermore, we have shown that specialists are systematically more likely to participate in the creation and transformation of film genres. This higher level of innovation among specialists may be particularly vital in cultural industries. However, it is not necessarily true that increases in the foundings of more innovative specialists as concentration increases can insure the vitality of cultural products. Of particular relevance to the level of innovativeness of cultural products is one question that our research cannot answer: Under what conditions are specialists successful in getting their products to audiences when the market is dominated by highly concentrated generalists?

Perrow (1986, p. 181) argued that highly concentrated industries will be those with the lowest levels of innovation: “The charges of bias, favoritism, suppression of innovation, and so on often occur in the cultural industry for the simple reason that potential suppliers and supplies exist in vast numbers, but very few of them are selected.” This observation suggests that where the few media potentates (Barnouw 1978) can choose among vast numbers of smaller producers and distributors, the results in terms of innovative cultural product may be very negative indeed. While it is plausible, perhaps likely, that the presence of smaller firms willing to take risks is a necessary condition for the presence of innovative cultural products, this alone is not necessarily sufficient. Future work needs to address the question of when specialist firms are successful in producing or distributing innovative cultural products (Glynn 1996), including films. Given the dependence between generalists and specialists, it would be interesting to investigate when alliances between a specialist and a generalist will successfully transfer skills and tacit knowledge that will improve their joint product (Levitas et al. 1997).

In fact, our results combined with the arguments of Perrow (1986), Hirsch (1969, 1971), and Peterson and Berger (1971, 1975) suggest the possibility of a paradox. The high levels of concentration that we found to be associated with enhanced chances of foundings of specialist firms may in fact represent a market structure in which innovative cultural products are least likely to flourish. A more complete understanding of market structure and resource partitioning and how these are linked with the content of films and other cultural products might go a long way toward improving our understanding of how and when innovative cultural products are successfully delivered to a sizable audience. We believe this is an important question for cultural industries, and hope that our results can trigger future research that will give us a more complete understanding of the dynamics of cultural industries.

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