

Brazilian Movie Industry Renaissance: Individual or Collective Effort?

Autoria: Charles Kirschbaum

Abstract

The blend of “competition” and “cooperation” under a single framework has become a traditional approach of game theorists. Nonetheless, organizational sociology researchers have insisted in the introduction of relational aspects to the analysis of organizations, which sheds a different light on the cooperation-competition dichotomy. This article attempts to contribute to this research agenda by offering a social network approach to the movie industry. For this purpose we reconstruct the Brazilian movie industry network from 1994 to 2002. We investigate individuals’ performance by exploring their relations with relevant characteristics. Categorical role (actor, director, producer, among others) is the most powerful predictor of individual performance from 1994 to 1996. However, in the following periods, other variables gain in importance, as individual recognition, centrality and structural equivalence. These findings suggest that in the early stage of a developing networked industry, collective success is more important than individual success. We conclude with possible implications for a co-evolutionary strategic theory.

Introduction

Brandenburger and Nalebuff’s (1998) best-seller on game theoretical analysis of strategic interactions made the idea of “co-opetition” a new paradigm in strategy. By exploring the implications of Nash equilibria, the authors explain to us how isolated firms are able to cooperate even when (1) isolated one to each other, (2) free from coordination and (3) barred from any communications. These assumptions fit well to traditional competitive scenarios, where firms aren’t supposed to have direct communication to each other. Nonetheless, such approach excludes several cases where interaction, communication and, in general, “embeddedness” is central to understand economic transactions. Economic sociologists have admonished students of organizations to add a “relational” approach to their analysis (Emirbayer, 1997). Studies from economic sociologists like DiMaggio’s (1993) and White’s (1992) have shown that categories and labels might hide emergent relationships among actors. Such emergent structures might be as relevant as, and in some contexts even more important, than the label an actor holds (see for instance, Burt, 1992, for a theoretical proposal on structural determinants of performance, and Ruef, 2002, for an example of study on innovation management and networks). Ghoshal and Bartlett (1990) and Stark and Vedres (2004) are examples of recent research on multi-national companies.

The objective of this article is to expand the application of social network tools to organizational theory, focusing on how careers of actors, directors and producers interact with producers and distributors. For that purpose, we chose the Brazilian Movie industry in the first nine years of its Renaissance era (from 1994 to 2002). The choice is based on two main reasons. First, the movie industry is heavily dependent on creative resources located in networks outside the studios’ hierarchies. Second, it is possible to observe rapid change in the formative years of a new industry. Finally, the recent success of the Brazilian movie industry is partially due to its effort to access international distribution channels and prominent studios.

“Networked” Organizations and Social Network Analysis

Granovetter (1985) suggests that economic transactions can not be understood outside their correspondent social relations. Powell (1990) shows that both “hierarchies” and

“markets” are idealized analytical forms. Instead, suggests Powell, both “hierarchies” and “markets” are as a matter of fact products of social interactions. In addition, several industries (like the biotech, or in our example, the movie industry) are structured in informal relationships between organizations and individuals that criss-crosses the traditional hierarchy/market boundary. Some research has been developed in order to compare performance between firms within and between networked organizations (Häcki and Lighton, 2001), as well as how innovation occurs in such arrangements (see for instance, Hargadon and Sutton, 1997, and Burt, 2004).

In parallel to the research in networked organizations, there has been a surge in research in social networks analysis (SNA) (see Powell and Smith-Doerr, 1995, for a review). Social network analysts' worries revolve around understanding structural positioning of actors and groups within networks. In addition, SNA has been used to compare “networked” organizations with hierarchical organized and market dispersed players.

Social Networks and Organizational Fields

Companies engage in competitive activity where several value chains compete against each other, and its members frequently belong simultaneously to several arrangements. Under this perspective, the relevant relationships in a competitive playground are analyzed as several value chains juxtaposed in several layers. Recently, one of the most studied phenomena of layered value chains is the industrial cluster, where several industrial sectors are entangled in the same geographic area, or multinational stream of relations (see Porter, 1999, for examples of industrial clusters, and Saxenian and Hsu, 2001, for international intermeshing of industrial collectivities). Both approaches have been instrumental in mapping strategic forces and industrial dynamics. However, they both miss the micro-analysis potential that we may find in the social network analysis.

In the field of economic sociology, the collection of relevant players and relations has been analyzed under the “organizational field” concept. Powell defines an “organizational field” as “a community of organizations that engage in common activities and are subject to similar reputation and regulatory pressures” (Powell, White *et al*, 2003, p. 4). DiMaggio and Powell, 1983, classical text on organizational field develops hypotheses of isomorphic behavior of organizations embedded in social networks. In contrast, Bourdieu, the idea of field is somewhat broader than the American economic sociology tradition's. Bourdieu includes in his conception not only the relevant organizations and relationships conditioned by the same pressures, but also the logics held by the players engaged in the field game (Bourdieu and Wacquant, 1992, p. 102).

The Movie Industry Example

A production of a film is neither performed in a hierarchical structure nor in an ideal market structure, where players exchange goods without establishing social ties. In terms of production process, it resembles Stinchcombe's craft model, where planning revolves around the product, rather than around the process itself (Stinchcombe, 1959, Powell, 1990 for an application of the craft concept to the film industry). Also, several of the tasks involved in a film production occur simultaneously: actors, director and staff might interact continuously during months in order to have the movie produced. In the same token, scientific management and process rationalization has very little applicability, for task ambiguity is prevalent among actors, director and her crew (including an in-house screen writer).

Nonetheless, let us not be bluffed by the “collaborative effort” appeal of film production. The division of labor among players is relevant. It contrasts sharply with a Jazz quintet, for instance, where relationships are predominantly horizontal. In a film production, power relationships vary greatly in non obvious ways. Second-tier actors receive a very small

share of a film's budget with salaries, while first-tier actors receive a substantial share of it. Also, while directors usually have substantial autonomy over the production of a film, several times producers interfere in casting and plot development.

A film production is a short-lived firm, where several different players blend together in order to pursue a project, and then they disband. From this perspective, a film production entails in the formation of a "networked" organization that will function for few months. In one movie, actor "A" might have a secondary role. However, in a different movie, he might attain a central role. A famous actor participates in several films during his career, while second-tier actors might be able to play in one or two. Conversely, while few important production companies and distributors are chosen for delivering the movie to its final consumers, niche production companies might have very limited reach. In short, the "category" where a player falls (actor, director, producer, etc) is not enough to understand its strategic positioning and likely performance. Additionally, as film productions are short-lived, one-shot pictures of relationships might provide a poor understanding of the field dynamics (Salancik, 1995). In this regard, the dynamic characteristic of the movie industry makes it an attractive object for studying a field's dynamics.

The movie industry in Brazil has some additional advantages for this effort. In spite of its rich past, which included movie makers like Glauber Rocha and Nelson Pereira dos Santos, it almost disappeared by mid-eighties (Sims, 1996). In the nineties, due to governmental incentives, the industry has reborn and yield first-class world movies like "Central Station" and "City of God" (Butcher, 2000). This "renaissance" gives to researchers the opportunity to analyze the birth, development, and perhaps consolidation of a domestic industry embedded in the international organizational field of movie making.

Hypotheses

Movie success among consumers

Creative industries, and specially the movie industry, is organized around projects. Because of this configuration, task ambiguity is high, for each movie follows a unique development. It is difficult to predict commercial success of a film. Lampel and Shamsie (2003) separate a film development in two phases. The first phase is when resources are mobilized: players negotiate and strike agreements for the movie project. The following phase is the production of the movie itself, when resources are transformed into the film. As the industry externalized its resources out of the studios during the twenties, to become a networked field, creative talent gained a mobility once nonexistent (Bowser, 1990). With this higher mobility, most efforts have been devoted to mobilizing resources, rather than excelling film making per se (Lampel and Shamsie, 2003, p. 2205). In addition, film makers have relied more on aggregating stars as a predictor of box office performance, rather on film making. In a strongly outsourced industry, commercial success is much strongly related with the capacity of mobilizing resources available in the network, than with the transforming capacity, for the very skills of transforming are themselves mobilized in the first phase. As a consequence, filmmakers struggle to attract stars to their movies, in order to maximize commercial success.

Nonetheless, Lampel and Shamsie's study investigates a consolidated industry. Our object is an industry struggling to conquer recognition. Although movie actors in Brazil are well known to their audience from soap operas and theater plays, their success in the movie industry might not be immediate. In addition, as Brazilian movies gain a broader reach than Brazilian soap operas, we should assume that new audiences will not be familiar with Brazilian stars. As a consequence, in the structuring of the film industry, critics' recognition of a film might be more important than the recognition given to actors. We test both hypotheses as follows:

Hypothesis 1a: the higher the recognition a film receives from critics, the higher will be its success among consumers.

Hypothesis 1b: the higher the use of prominent stars in a movie, the higher will be its success among consumers
Survival

The creative industry embodies Andy Warhol's famous quote: "in the future everybody will be famous for 15 minutes". Warhol's quote relates to what most artists experiences in the film industry: few will have a chance to be on screen more than once.

We first test a functional hypothesis, where a player's social role is determinant to its survival odds in the network. Given the low entry barriers to an actor or director status, one's position is always threatened by new entrants. In order to be able to act as an actor, one doesn't even need to have a professional certificate, as in other professions. In contrast, existent production companies and distributors are gatekeepers to funds and distribution channels (Wasko, 1982), whose barriers of entry are high due to high investment levels and positioning attained. As a consequence, the openness of the industry to creative talent is a mixed blessing: while it brings new oxygen to the industry, it also weakens the position of actors and directors already working in the industry. Hence, we would expect mortality likeliness to be highly affected by one's role:

Hypothesis 2a: one's likeliness of survival depends on its categorical social role

Nonetheless, few actors and directors become "stars" and their position in the industry is well established, regardless of their association to any particular producer. Once survival is guaranteed, an artist might seek for its own creative path. As Zuckerman, Kim, Ukanwa, & Rittmann (2003) point out, an actor first needs to establish a foothold in the industry, before being able to explore its resources.

We suggest two perspectives (among others) to think on one's belonging to a network. The first paradigm that we recall is the core-periphery dichotomy. Once an actor or director belongs to a network's core, her likeliness to find a job in the next period is much higher than one at the periphery. Hence:

Hypothesis 2b: one's likeliness of survival depends on its membership to the network's core

Our exigency of membership to the network being confirmed by membership to the network's core might be too strict. We might simply think of membership as one's capacity to mobilize resources in the network.

The capacity of mobilizing resources in a network is highly correlated with a player's centrality, which might differ from its membership to a network core. A novice actor connected to a "godfather" at the core might belong to the core as well, but will have no opportunities to play the brokerage role among other players, for he is completely dependent on his godfather (Powell, White, *et al*, 2003). Conversely, peripheral actors might be able, none the less, to access critical resources due to its high betweenness centrality (Hanneman, 2001). The capacity of mobilizing resources is closely related to one's chances of survival, as a consequence:

Hypothesis 2c: one's likeliness of survival depends on its betweenness centrality

The original formulation of "niche" in the organizational ecology studies refers to the sources an organization access in order to get the resources needed to survival (Hannan and Freeman, 1977). The organizational ecology school has traditionally identified niches in an ex-post approach: those organizations that have the same fate define a niche space (realized niche). The central assumption is the inference that organizational forms that have the same fate also share the same sources of resource. Nevertheless, we could identify niches from an

ex-ante perspective, by identifying those organizations that share the same resources. Following DiMaggio's suggestion (1986), we propose that organizations and individuals have the same fate given shared niches (fundamental niches). Hence, set of organizations that have the same set of relationships (structurally equivalent) should pertain to the same fundamental niche. When we translate this insight to the film industry, we would expect structurally equivalent players to have a common fate. Hence:

Hypothesis 2d: one's likeliness of survival is higher (lower) depending on its structural position in the network.

Finally, sheer prestige due to recognition received from film critics may enhance one's chance to remain in the network (Jones, 2002):

Hypothesis 2e: the higher one's recognition from film critics, the higher one's likeliness of survival

Centrality in the Network

When we theorize about the structure of an industry, following the functional perspective, we envision structural patterns highly correlated with social roles (DiMaggio, 1993). That is to say that cast will present similar social relationship structures. The same is expected from directors' and producers' social relationships.

In creative industries, there is an excess of offer vis-à-vis its correspondent demand. Also, artists are connected to consumers through a selective handful of cultural industry gatekeepers (DiMaggio, 1977, Hirsch, 1972). Hence, it is intuitive that the distribution and commercial side of the industry will be localized in the center, while actors, will stay in the periphery. Following this logic, a player's role should be a strong explanatory factor to its position in the network:

Hypothesis 3a: one's centrality in the network is dependent on its categorical social role

As Becker (1982) points out, an art world's system needs commercial feedback in order to discriminate the successful ones from those condemned to get less attractive opportunities. Jones (2002) identifies feedback signals used by players use the film industry, in order to mobilize further resources.

Hence, we suggest that players involved in successful projects have higher resources access in the network.

Hypothesis 3b: the higher the success of the films one has participated, the higher its access to resources in the next period

Burt (1992) points that the actors who control structural holes might be able to exploit them to their advantage, and convert their structural advantages in economic opportunities. As a caveat to this suggestion, Burt alerts us that in several occasions those actors holding structural holes might not be aware of their advantage. For this reason, not all structural advantage will be necessarily exploited. Nevertheless, following the "survival" set of hypotheses, we suggest that players with equivalent set of relationships will be able to achieve similar centrality levels:

Hypothesis 3c: players with structurally equivalent positions will achieve similar levels of betweenness centrality in the following period.

It is worth noting, though, that players in the movie industry (specially cast and directors), might receive recognition by her performance alone, which is, at least theoretically, independent from the group's success. An actor in a movie might play the best part in his career, although the film itself is not highly appreciated by critics.

Hence, we should also consider that players might want to pursue pure individualistic strategies, maximizing her recognition, underscoring the importance of the overall project. This should not surprise us: actors do engage in struggles against directors. For instance, while the former would not show an unfavorable angle in front of the camera, the latter is mostly concerned with the aesthetic value of the whole project. The likeliness that players will undertake pure individualistic strategies will depend on the industry feedback:

Hypothesis 3d: the higher the recognition an individual player receives, the higher its centrality in the next period

Methodology and Analytic Strategy

Data Collection

In order to build the network of players in the Brazilian movie industry, we relied on IMDb (www.imdb.com) database of movies. We focused on the period of time spanning from 1994 to 2002, collecting for each film its cast, director, producers, production companies and distributors (we chose not to focus on other roles, like “writer”). Within this period, we ignored the movies where “Brazil” was not the leading country. Also, we dismissed those films which missed any of the above roles. Finally, we disregarded pornographic movies. In total, we collected information on 73 films.

For all purposes, we assumed that within a movie production and distribution, the different roles interact with each other in an ordained way: cast interacts only with directors, while directors interact with producers and cast, and so on. This rule might be simplistic and underscore some important network phenomena. For instance, it might overlook the interaction between producers and cast, which bypasses a director’s autonomy. Nevertheless, this approach reduces complexity and helps us to focus on the most important relationships.

Variables and Methodological Strategy

We divided our span of time in three blocks of three years each: 1994 to 1996, 1997 to 1999, and 2000 to 2002. In each of this period, we established the ties mentioned above, based on the common films between each pair of roles. Hence, we also excluded 1-mode ties. In order to reduce complexity further, we only considered those Cast-Director ties that appear in at least two films in the period. The caveat of this approach is that if a tie that appears once in 1999 and again in 2000 will be excluded from the network, due to our period framing.

Dependent Variables

Commercial success: past studies relied mostly on box office figures as a proxy for commercial success (Lamper and Shamsie, 2003). However, this approach is convenient for studying those markets and movies with reliable box office information. Our study was limited from this perspective: we lack box office figures for most of the movies in our sample. Instead, we used iMDB’s popularity rank as a proxy of commercial success, where the most popular movie is ranked “1”. In order to be able to use this variable as a proxy of commercial success, we performed two transformations, in order to obtain *COM* (commercial success), a normally distributed variable:

$$COM = \frac{1}{\ln(iMDBrank)}$$

Survival: survival is measured as a logical variable. We are interested in identify those individuals (persons and organizations) who were involved in projects in subsequent periods to our analysis. Hence, we count as “survival” (*SUR* is equal to “1”) only those cases that the individual was active in period *t* and *t+1*. Conversely, *SUR* is “0” when the individual was active in *t*, but inactive in *t+1*. All other cases are not included in the analysis.

Independent Variables

Recognition: the recognition an individual or a film receives is measured by the number of nominations and awards won in that period. Hence RP , the recognition a person (actor, director or producer) received is the number of awards won or nominations. In the same way, RF (recognition given to a film) is the number of awards and nominations received. Some festivals give awards to films through their directors. In other words, only individuals receive recognition. We chose to consider awards to films only those not given to individuals. The possible bias this methodological choice might give to our analysis is discussed later on.

Categorical Role (CR): we identified five basic categorical roles: cast (C), directors (D), producers (P), production companies ($Prod$), and Distributors ($Distrib$). On top of these roles, some movie credits' also showed "other cast", as secondary individuals involved in the movie. Whenever, in the same period, we found the same individual both "cast" and "other cast" we labeled it as "cast". Finally, few individuals played multiple roles and established different types of ties with other actors (see table 6 for a complete list of codes to categorical roles).

Membership to Core (CORE): Ucinet offers a routine based on Tabu Search algorithm to identify those individuals who belong to the core of a network. What Tabu Search does is to permute the network matrix in a partition of two blocks, searching for the best set of individuals at the center. It offers a solution when it finds after several iterations those blocks that minimize the errors in comparison to a theoretical matrix. We labeled "1" for those individuals belonging to the core, and "0" for those belonging to the periphery (Hanneman, 2001).

Betweenness centrality (BW): The betweenness centrality of an actor j is the measure of the number of "geodesics" (shortest paths between nodes m and n) that passes through j (see Freeman, 1979, and Wasserman and Faust, 1997, for a review). For our investigation, this measure has an interesting fit, for it provides the likeliness of brokerage of a player among other players.

Structural Position (SP): In order to obtain a measure of the structural similarity among actors, we used Ucinet's multiple dimensional scaling (MDS) tool to measure Euclidean dissimilarity among nodes. We chose the non-metric option, given that our network consists of binary relationships. We set the number of dimensions to one, and obtained the "stress" measure of 0.092, 0.062, and 0.057 to periods t_1 , t_2 and t_3 respectively. All these figures are under 0.1, which is considered excellent (while above 0.2 would be unacceptable). As a consequence, we decided to keep only one dimension of structural similarity, in order to reduce the analysis complexity and improve the weight of this variable in the regression analysis.

Individual's film success (IFS): the success of an individual in past projects is the average of the commercial success of the movies it participated:

$$IFS_{it} = \frac{\sum_1^n COM_{it}}{n_{it}}$$

Where i is the individual in analysis, t is the period, and n is the number of films the individual participated in the period.

Control Variables

Oscar: It would be imprecise to account for all awards as having the same impact on commercial success of a film or on an individual's career. Among all festivals, we flagged whenever a film (OF) or person (OP) received a nomination or won the Academy Awards' Oscar.

Period's Film Success (PFS): as Brazilian movies conquer higher recognition, it is expected that their success increases in time. Nonetheless, we should also account for the “newness” effect in IMDb's rank. Because site users might favor newer films, we should consider the average film success obtained in a period as a potential disturbing factor in our analysis:

$$PFS_t = \frac{\sum^n COM_t}{n_t}$$

Where t stands for the period and n for the number of films produced in t .

The Models

Our Model 1 tests hypotheses 1a and 1b, by building a linear multiple regression that predicts the commercial success of a film, based on the awards and nominations received. We added two kinds of control variable to this model, the average film success in the period and the flags for Oscar awards and nominations:

$$COM_{kt} = \beta_0 + \beta_1 RP_{kt} + \beta_2 RF_{kt} + \beta_3 OF_{kt} + \beta_4 OP_{kt} + \beta_5 PFS_{kt} + \varepsilon,$$

Where k is the film and t the period under analysis.

We relax our assumption that a film's commercial success is entangled with its period's average success, in order to provide more strength to the other variables. Thus we have in Model 1*:

$$COM_{kt} = \beta_0 + \beta_1 RP_{kt} + \beta_2 RF_{kt} + \beta_3 OF_{kt} + \beta_4 OP_{kt} + \varepsilon,$$

Model 2 tests the likeliness of survival of an individual in period $t+1$ for hypotheses 2a to 2e. Because we are dealing with a variable that may take only 0 or 1 answers, we applied a categorical binary logistic model, which takes the following form:

$$\ln\left(\frac{\pi_{i,t+1}}{1-\pi_{i,t+1}}\right) = \beta_0 + \beta_1 CR_{it} + \beta_2 CORE_{it} + \beta_3 BW_{it} + \beta_4 SP_{it} + \beta_5 IFS_{it} + \varepsilon,$$

Where $\pi_{i,t+1}$ is the probability of node i survival in the following period (i.e., SUR equals 1). Because we may not assume that SP will have the same interpretation from one network to another, we split the file and performed isolates analysis for each period.

Finally, in order to test hypotheses 3a to 3c, we used two models, Model 3 and Model 3*. Model 3 is a categorical linear regression attempt to predict an individual's betweenness centrality based on its parameters:

$$BW_{i,t+1} = \beta_0 + \beta_1 CR_{it} + \beta_2 IFS_{it} + \beta_3 SP_{it} + \varepsilon,$$

While model 3* adds the individual's awards and nominations won in the period, which allows us to test hypothesis 3d. The reason we deployed a different model for this analysis is due to awards apply only to persons, not to organizations:

$$BW_{i,t+1} = \beta_0 + \beta_1 CR_{it} + \beta_2 IFS_{it} + \beta_3 SP_{it} + \beta_4 RP_{it} + \varepsilon$$

Finally, for models 2, 3 and 3* we weighted the cases by the categorical roles, in order avoid to reduce the bias in the analysis due to the overwhelming presence of cast in comparison to other roles.

Results

Table 2 depicts the results for Model 1. We obtained two significant factors as predictors of commercial success: positively depending on whether the film received the

Oscar, and negatively depending on the period's average *COM*. If we relax the assumption that a film's commercial success is entangled with its period average success, we obtain, in Model 1* a clearer picture for comparison between the weight of individuals and the overall effort in its success: *RF* (Recognition a film receives) is positive and significant, while *RP* (recognition an individual receives) is not significant.

Both models strength hypothesis 1a's argument, while underscoring hypothesis 1b's proposal. From these findings, a creative industry in its infancy should struggle for overall success, rather than individual recognition.

When we look at the survival perspective (Model 2, results in Table 3), success in past films is the most significant variable, with highest weight, in the first period. In tandem with past success, categorical role has strong impact on one's survival. The overall significance of *CR* is lower than 0.001 (not reported in Table 3), although no particular role had any distinctive significance. On top of past success, betweenness centrality and structural position collaborated too for one's survival chances, however, with lower weight and significance than past success and categorical role.

In the second period, we observe a turn in this picture. Past success is no more a significant factor. Instead, both core membership and betweenness centrality gain importance and significance in predicting one's likeliness of survival (both with *p* below 0.001). As before, *CR* significance is high (below 0.001), and now we are able to identify the most significant roles in predicting survival. From Table 4, we observe that the roles Producers, Directors, Director-Producers, Production Companies-Distributors, and Distributors are significant and affect positively one's likeliness to survive. Not surprisingly, most of these roles are related with the commercial and distribution side of the industry. However, what surprises us is that we do not observe a clear negative effect of membership to creative roles as Cast and Director. On the contrary, Director presents a positive and mildly significant factor.

Consistent, with our results above, when we look on Model 3 and 3*'s the factors that impact betweenness centrality, categorical role continues to be significant and affects positively betweenness centrality, for periods 1, 2 and models 3 and 3*. Surprisingly, when we observe period 1, past films' success has a significant and negative effect on one's betweenness, in both models 3 and 3*. In contrast, structural position and personal recognition gain positive weight and significance in model 3*.

This picture changes slightly from period 1 to period 2. In period 2, past films' success in model 3 has a positive effect, though mild significance. However, it is worth noting the changes when we zoom in persons' behaviors in model 3*. All factors (categorical role, past films' success, structural position and personal recognition) achieve high significance. In addition, past films' success, structural position and personal recognition surpass categorical role weight, which might suggest a significant change in the strategic options and bargaining leverage of players in this field.

Discussion and Conclusion

The findings suggest a perennial tension between competition and collaboration in creative industries, which makes competitive assessment more complex than just grasping one's categorical role (or activity) within the value chain. In order to build these propositions, we relied not only on the theoretical insights of contemporary strategy scholars, but also on specific previous findings on this industry in the American market.

Our object of study, however, differs substantially from past studies'. The Brazilian movie industry is reestablishing itself, after a decade of little or none activity. Generally speaking, contrary to Lampel and Shamsie (2003) findings, "transforming resources", and respectively, overall film's success is a better predictor of a film's popularity than "resources

mobilizing”. This result is not surprising, as we deal with an industry whose resources (actors and directors) have low track record with worldwide film consumers. If the overall success is more important than the individual’s recognition, we should expect a higher bargaining leverage to the commercial and distributor side of the industry, who is sponsoring the introduction of new products to the worldwide market.

It is expected, hence, that in the first period of our analysis, which spans from 1994 to 1996, survival depended mostly on past films’ success and one’s categorical role. In an industry where overall success depends on the overall success of a film, individual actors chances of survival increase as they are associated with top ranked films. However, as actors and directors receive higher recognition as individuals, independently from their past projects, their survival chances increase as they become core players, by either belonging to the network core or increasing betweenness centrality.

As betweenness centrality (as well as membership to the core) becomes a good predictor of survival, predicting betweenness centrality turns to be increasingly important for our research. If categorical role was one of the most important predictors of betweenness centrality in period 1, in period 2 personal recognition and structural position become factors as important as (or more important) than categorical role. Hence, as the industry develops, membership to an activity in the value chain is not the only factor to be considered: structural positioning becomes an additional dimension to positional assessment of a strategic player, and personal recognition entails in increasingly worth to freestanding resources in the industry.

From the Organizational Theory to Strategy

Also, we believe our insights might contribute to recent evolutionary and ecological approaches to strategy. Burgelman (1991) suggests that we focus on intra and inter-organizational ecological processes as predictors of performance. By investigating processes of selection and adaptation that occur in the organizational level, we will be able to enhance our understanding of ecological processes at the population and community level. Our article adds to Burgelman’s insights by integrating within the same methodological approach individual persons and organizations, who constitute an entire community.

On a more recent review of evolutionary and ecological approaches to strategy, Barnett and Burgelman (1996) suggest that researchers should investigate how strategic action entails in co-evolutionary processes among players. For instance, the “Red Queen Effect” model explains why competitors struggle to get ahead of one another, but by doing so, all players eventually become similar in their capabilities. Our example is a radical one of a “Red Queen Effect”. As movie production companies struggle to gain market prominence with their films, they promote their cast to “stars”, enhancing the value of outside organizational resources. Without the possibility of internalizing these resources, and with increasing pressure for outsourcing, competitive advantage is eroded.

Directions for Future Research

Our suggestions for future research are two pronged, on the both the methodological and the scope perspectives. From a methodological perspective, there are several issues concerning IMDb data. We should be able in the future to establish a clearer link between “film popularity” on IMDb site, and commercial success. This analysis will permit us a better use of this variable as a measure of performance. Also, we should be able to compare the evolution of Brazilian movies ranking with worldwide movie ranks overtime, in order to develop a reasonable “deflator” of this ranking. Finally, on the IMDb assessment, we should question *who* is site user. Specifically, we should understand what is the profile of those who

visit the Brazilian film links. In this paper, we just assumed IMDb's typical user is a "global consumer".

In addition, one might question the grouping criteria in periods of three years. A possible alternative approach is to have moving groups (lag one year of analysis in each set) and compare the robustness of the findings among the several groups obtained. As the industry evolves, we will be able to add more years to our analysis, we expect to increase our analysis.

In terms of scope, within the film industry, it will be interesting to discriminate Brazilian consumers, from Latin American, American, Asian and European consumers. Brazilian culture might have different appeals to each of these segments, which might impact not only films' content, but also respective value chains. As the industry increases in scale, it is expected further differentiation among film makers, in order to attend diverse audiences. Following the same logic, we would expect "spillovers" of this industry, as Brazilian actors and directors are invited to participate in international projects, and its resources cross-fertilizes other creative industries in Brazil, like TV and theater.

From an organizational perspective, future research might be interested in investigating Brazilian studios' organizational structure. In an industry where human resource factor (including stars) represent a small share of the cost, and the overall film's success is more important than an individual's recognition, we might observe contracts favoring the commercial and distribution side of the industry. In addition, it should be interesting to further investigate how negotiating and bargaining dynamics has changed, as actors and directors became more prominent.

Finally, similar approaches might be applied to other creative industries in Brazil, as TV programs and recording industries. As the worldwide consumption of cultural goods increase relatively to other goods, higher diversity will be required from an increasingly omnivorous consumer.

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Table 1a: Model 1 Descriptive Statistics

	Mean	Std. Deviation
COM	0.093	0.016
OF	1.842	3.803
OP	8.848	12.826
RF	0.029	0.169
RP	0.029	0.169
PFS	0.093	0.003

Table 1b: Model 1 Pearson correlations

	1	2	3	4	5
1. COM					
2. RP	0.738***				
3. RF	0.886***	0.884***			
4. OF	0.159*	0.097064	0.111789		
5. OP	0.781***	0.653***	0.819***	0.381***	
6. PFS	0.201***	0.229***	0.211***	-0.224***	-0.003

*** p<0.001

** p<0.01

* p<0.05

Table 1c: Model 2 and 3 Descriptive Statistics

	t1		t2		t3	
	Mean	Variance	Mean	Variance	Mean	Variance
CORE	0.022	0.022	0.275	0.200	0.008	0.008
SP	0.165	1.066	(0.033)	1.027	(0.242)	1.040
SUR	0.261	0.193	0.226	0.175		
BWt+1	2.576	31.014	1.930	13.209		
IFS	0.089	0.000	0.094	0.000	0.108	0.001
RP	1.383	0.241	4.105	18.768	4.336	24.583
BW	3.348	60.585	0.883	7.922	0.908	5.626

Table 1d: Model 2 and 3 Pearson correlations per Period

t1	1	2	3	4	5	6
1. CORE						
2. SUR	0.074*					
3. BW	0.149***	0.120***				
4. IFS	0.184***	0.203***	-0.183***			
5. RP	0.575***	0.100	-0.003	0.507***		
6. SP	-0.028	0.145***	0.020	0.243***	-0.360*	
7. BWt+1	0.145*		0.761***	-0.217***	0.998***	-0.207***

t2						
2. SUR	0.322***					
3. BW	0.361***	0.235***				
4. IFS	0.439***	0.086***	-0.041*			
5. RP	0.322***	0.095	0.535***	0.436***		
6. SP	0.071***	0.030	-0.075	0.095***	-0.198*	
7. BWt+1	0.280***		0.472***	0.027	0.384***	-0.144***
t3						
2. SUR						
3. BW	0.246***					
4. IFS	0.210***		-0.005			
5. RP	-0.106		-0.129*	0.306***		
6. SP	0.023		-0.072***	0.147***	0.094	
7. BWt+1						

*** $p < 0.001$

** $p < 0.01$

* $p < 0.05$

Table 2: Model 1 Results

	Model 1	Model 1*
RP	0.000 (0.000)	-0.00 (0.00)
RF	0.002 (0.001)	0.004 (0.001) ***
OF	0.010 (0.005) *	-0.00 (0.005)
OP	-0.001 (0.011)	-0.005 (0.012)
PFS	-0.006 (0.003) *	
Constant	0.149 (0.028) ***	0.087 (0.012) ***

Note: Unstandardized Coefficients (Std. Error), N = 73 ("City of God" excluded as outlier)

*** $p < 0.001$

** $p < 0.01$

* $p < 0.05$

Table 3: Model 2 Results

	Model 2			
	t=1, N=237	Wald	t=2, N=527	Wald
CORE	0.250 (0.519)	0.232	1.228 (0.136) ***	81.189
BW	0.025 (0.011)*	5.707	0.086 (0.021) ***	16.728
SP	0.265 (0.093)*	8.137	-0.028 (0.053)	0.285
IFS	113.436 (18.830)***	36.288	-4.741 (5.253)	0.815
Constant	10.855 (8148.822)	0	-2.001 (0.548) ***	13.322
CR		30.246		147.457

Note: Unstandardized Coefficients (Std. Error), Wald; CR results not reported here, except Wald

*** $p < 0.001$

** $p < 0.01$

* $p < 0.05$

Table 4: Model 2 Categorical Role Detail

	Model 2	
	t=2, N=527	Wald
<i>Prod</i>	0.633 (0.382)	2.753
<i>P</i>	1.117 (0.396)**	7.968
<i>C</i>	-0.297 (0.408)	0.53
<i>Distrib</i>	1.073 (0.428)*	6.274
<i>DP</i>	1.173 (0.409)**	8.216
<i>D</i>	0.887 (0.401)*	4.893
<i>CD</i>	-0.34 (0.715)	0.226
<i>CP</i>	21.922 (20094.798)	0
<i>Prod-Distrib</i>	2.275 (0.429)***	28.104
<i>OC</i>	23.638 (23205.422)	0
<i>CDP</i>	-20.682 (17974.843)	0

Note: Unstandardized Coefficients (Std. Error), Wald

*** $p < 0.001$

** $p < 0.01$

* $p < 0.05$

Table 5: Model 3 and 3*'s Results

	t=1		t=2	
	Model 3, N=273	Model 3*, N=18	Model 3, N=652	Model 3*, N=71
CR	0.674 (0.048)***	0.462 (0.034)***	0.449 (0.038)***	0.298 (0.093)***
IFS	-0.511 (0.048)***	-0.077 (0.023)***	0.078 (0.035)*	0.699 (0.099)***
SP	0.114 (0.046)*	0.09 (0.027)***	-0.035 (0.038)	0.401 (0.109)***
RP		0.481 (0.064)***		0.465 (0.098)***

Note: Unstandardized Coefficients (Std. Error)

*** $p < 0.001$

** $p < 0.01$

* $p < 0.05$

Table 6: Codes for Observed Categorical Roles

Code	Categorical Role
<i>C</i>	Cast
<i>CD</i>	Cast and Director
<i>CDP</i>	Cast, Director and Producer
<i>CP</i>	Cast and Producer
<i>CPProd</i>	Cast, Producer and Production Company
<i>D</i>	Director
<i>Distrib</i>	Distributor
<i>DP</i>	Director and Producer
<i>OC</i>	Other Cast
<i>P</i>	Producer
<i>Prod</i>	Production Company
<i>Prod-Distrib</i>	Production Company and Distributor