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Applying Conflict Theory to Strategy Selection
In Scholarly Communication

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Technological advances have impacted every aspect of our personal and professional lives. Some of these changes are readily discernable in our daily lives, whereas others may be obscured from our conscious, even if they impact us in significant ways. Access to scholarly journals, depending on your job, is likely to be an area where the impact of technology is not fully understood. This is not because little has been written on the subject; there is actually a substantial body of literature available. Most of this literature, however, resides within in the domain of library science and that which reaches audiences outside the discipline focuses on the benefits of online access. Access to scholarly journals encompasses a much broader range of issues than electronic access and it is fraught with conflict. And although this conflict is frequently discussed in the literature, relevant conflict theory has not yet been applied. This is unfortunate because conflict theory and practice have advanced substantially over the last few decades and much insight can be gained by applying this knowledge to the issues associated with providing access to scholarly journals. This paper will identify the core issues associated with the conflict over access to scholarly journals, explore relevant conflict theory and models, and connect this theory to current practice in an attempt to explain current strategic choices and predict future behavior.

The Conflict over Access

The Association of Research Libraries defines scholarly communication to include, "the formal and informal processes by which the research and scholarship of faculty, researchers, and independent scholars are created, evaluated, edited, formatted, distributed, organized, made accessible, archived, used, and transformed"

("Create Change", 2000). In the formal process, faculty, building on the works of others, create new research and provide it to publishers. The publishers in turn manage the peer review process and then sell the research to libraries that preserve and provide access to their institution's scholarly community. It is this formal process that is the focus of this analysis. In particular, the provision of access to research articles after they have completed the peer review process. It is this system that has become increasingly problematic and which is the source of growing conflict.

From the standpoint of institutions of higher education, and academic libraries in particular, it has become quite impossible to keep up with the increasing volume and price of scholarly journals. Over the past several decades, the number of publishers of academic journals has diminished considerably (Corbett, 2006). This is the result of dramatic consolidation of the academic journal commercial publishing industry. This consolidation is particularly acute in the scientific, technical, and medical fields (STM) with two publishers, Elsevier and Wiley owning hundreds of individual core journal titles (Corbett, 2006). This consolidation has reduced competition, creating ever larger monopolies, and resulted in annual average journal price increases well above other measure of inflation. Many titles increase as much as 40 percent a year, with some inflating more than 100 percent after a corporate merger of publishing houses (Corbett, 2006).

Few, if any, libraries can match these rising costs and maintain previous level of access to academic journals. Institutions regularly attempt to provide the funds their libraries require to continue access; they simply cannot meet the increasing subscription rates year in and year out. The result is usually periodic cancellations of titles to pay for

retained titles. For example, if the average inflation rate for all journal subscriptions at a library is ten percent, and the funds available to pay for these journals only increases by three percent, the library will cancel titles that add up to the other seven percent. The result is, of course, access to fewer journal titles at the institution and, frequently, for more money. For the institution the cost per available journal title increases. This problem becomes dramatically worse when downturns in the economy result in significant budget cuts to higher education, particularly at public universities. In this environment even larger cuts are likely to take place.

Decreasing the number of journals available at a particular institution does not in and of itself create a conflict. A conflict arises when the titles available at the institution's library does not meet the actual or perceived need. When the faculty at an institution request access to titles for which no funds are available, the library, seeking to meet the needs of the faculty, will be left in conflict with the journal publishers, who control access to the requested titles. Because faculty possess an almost limitless perceived need for access to journal titles, this conflict is all too common in higher education. In addition to the perceived need, canceling titles means faculty have access to an ever shrinking fraction of the total amount of scholarly research. Philosophically, this runs counter to our notions of the free exchange of ideas and the advancement of knowledge. Whether this limited access does indeed slow the expansion of knowledge is not the focus of this paper. Regardless of the real or perceived need for access, the convergence of the demand for access, high inflation, and limited financial resources, puts academic libraries in direct conflict with commercial publishers in seeking access to academic journals (Ebert, 2005).

An additional aspect of this conflict, which his not well addressed in the literature, is the competition among commercial publisher for market share. Although there have been significant mergers, existing publishers such as Elsevier, Blackwell, Sage, Springer, Taylor & Francis, and Wiley are in competition with each other for limited dollars. This market competition sets the stage for conflict not just between publishers and libraries, but among the publishers themselves. Conflict theory is well suited to examine many of the dimensions of journal access conflict.

It is also useful to note that many theories have been developed to explain the high rate of inflation among journal prices. Most of the research in this area focuses on three issues; the affect of mergers, as described above, cost per use ratios, and the growth in the number of published titles (McCabe, 1998). The cost per use models make the claim that individual journal prices increase are based on a cost per use economic analysis. Heavily used journals may have an overall high subscription price, however, they are used so frequently that their cost per use is relatively low compared to lesser used journals. Prices, therefore, are set based on use patterns on a per title basis. The growth in published titles model, advocated by Roger Noll, claims that as new journal titles come on the market, libraries may cut an existing journal to pay for the new title. As a result, the publisher must increase subscription rates to customers that retain the title to meet expenses (McCabe, 1998).

However, none of these analyses can adequately explain strategy choices made by publishers in their pricing decisions. According to general economic theory, a merger should produce cost savings from efficiencies and result in price declines, given that all other variables are held constant (McCabe, 1998). Because prices are not

reflecting this deflationary pressure, other variables must be examined. The cost per use model also falls short because it explains price increases for each title in isolation from other titles and other publishers. Assuming that these variables do not impact journal prices is a substantial assumption that should be examined. Finally, the testing of the theory that an increase in the number of titles available for purchase will reduce subscriptions and putt upward pressure on prices indicated that this theory cannot account for all of the price increase (McCabe, 1998).

Conflict Theories

Research on organizational conflict is replete with theories seeking to explain, model, and predict behavior in conflict situations. Three major theories are well suited to an analysis of the conflict addressed in this paper; conflict spiral theory, power dependence theory, and game theory. Central to the understanding of any conflict and the numerous strategy selections being made by the players in a conflict is an examination of power. Moreover, each of these three theories contains an important dimension of power. Therefore, an overview of the power theories that lie beneath conflict research is useful.

In 1970, Marvin Olsen stated that, "[p]ower exertion is perhaps the least studied and least understood – and yet most fundamental – process in social life" (Olsen, 1970). Thirty-five years later we are still struggling to understand power in social relations. During this time the study of conflict and negotiation has grown substantially in both theory and practice. However, power continues to be viewed as a central component of all conflict (Coleman, 2000; McCarthy, 1991).

Max Weber was one of the first sociologists to explore the concept of power. He defined power as the opportunity of one party to impose his or her will on others, even when there is resistance (Weber, 1962). Later theorists expanded on Weber's ideas and developed competing theories on the nature of power. French and Raven, for example, explained power in terms of five sources or types of power; coercive power (punitive), expert power, legitimate power, referent power, and reward power (French & Raven, 1959). For French and Raven, power is similar to a resource that can be used to influence others.

Other theorists, however, explained power not as resource that one possesses, but as a characteristic of a relationship. In one model developed by Deutsch, power is derived from the relationship between an individual and his or her external environment (M. Deutsch, 1973). For Deutsch, understanding the contextual nature of a relationship is central to understanding the influence and use of power. He identified four dimensions of a relationship that may derive power; the situation, the environment, the relationship, and the individual. It is clear from these competing theoretical explanations that power continues to be a difficult concept to define, and even more difficult to measure. However, as Olsen pointed out more than three decades ago, it is fundamental to understanding social relationships and conflict. When describing strategy selections in conflict situations, it is useful to identify the manifestations of power as influencing factors.

The first theory for the analysis of the conflict over access to scholarly journals is conflict spiral. According to this theory, when two parties have the capability to do harm to each other (punitive power), a process of threat followed by counterthreat spiral will

result. Moreover, the simple availability of punitive power will result in its use (M. Deutsch & Krauss, 1962). Deutsch and Krauss hypothesize that the capability to use punitive power creates a temptation that will result in the use of that power. And once one party uses their punitive power, the other party will respond with a punitive measure of their own, in an attempt to save face, rather than simply comply with the opposing party's punitive measure. Lawler expanded on this theory by distinguishing between the total power in a relationship (the sum of each actor's power) and the relative power between the two parties (the difference in the amount of power the actors hold) (Lawler, 1986).

According to Lawler, conflict spiral theory has two basic tenets. First, the higher the total power in a relationship, the more likely punitive power will be used. And second, the greater the imbalance in the power relationship the less likely punitive power will be used. Therefore, total power in a conflict has a positive correlation to the use of punitive power, and unequal power has an inverse relationship to the use of punitive power (Lawler, 1986). Under conditions where each party has equal power, an increase in total power will increase the use of punitive power. This is because the decision to use punitive power is based on the analysis of your own capability and the threat of your opponent's power. As the total power in a relationship grows, it results in a growing level of temptation to use power coupled with a higher expectation of attack by the other party. This growing temptation to use punitive power combined with the growing fear of attack results in greater use of punitive tactics. However, under unequal levels of power, the tendency to use punitive tactics will diminish. This is the result of the advantaged actor having a lower expectation of attack from the disadvantaged

actor. In addition, the lower power actor will be intimidated by the high power actor and be more compliant. This compliance will result in the high power actor seeing less need to resort to punitive tactics (Lawler, 1986).

The second theory useful for the study of the present conflict is power dependence. According to Emerson, the power aspects of social relations are grounded in dependency (Emerson, 1962). That is, one actor's power resides in the other actor's dependency. Therefore, through analyses of relationship dependencies are essential to the understanding of the use of tactics in a relationship conflict. Many relationships include mutual dependencies which entails a desire on the part of each party to control or influence the other party. This implies that the other party is in position to grant or deny, to some degree, something which is desired by the other party. For Emerson, there are two variables that largely determine the dependence of one party upon another. First, the dependence of actor A on actor B is directly proportional to A's affinity for the things B controls. That is, how intense A's desire is for that which B controls. Second, dependence is inversely proportional to the availability of those same things from outside the relationship between A and B. Specifically, how easily is it for A to get what is desired from another supplier (Emerson, 1962). Therefore, the power of one actor over another is determined by these two measures of dependency. In addition, the balance in a relationship can be assessed by examining these variables for the parties in a relationship.

Although Emerson examined dependency in general terms, the theory was extended to specifically address resource dependence. Pfeffer identified two arguments at the core of resource dependency theory (J. Pfeffer, 1982). First,

organizations will of necessity react to external organizations when they are heavily dependent on their resources. Second, organizations are adverse to this dependency and will attempt to reduce the dependency when possible. In addition, there are three overriding issues that organizations will take into account when dealing with a resource dependent relationship. The first is the cost of complying with the external demand. The second is the cost of forgoing the resource. And the third is the degree to which the demand is in conflict with demands from other actors that the organization is also dependent (J. Pfeffer & Salancik, 1978).

Lawler and Bacharach advanced conflict theory by identifying the need to examine both dependence and punitive forms of power in a relationship. For Lawler and Bacharach, neither conflict spiral nor power dependence theory alone can adequately explain the choices made in a conflict. In their analysis, they make an important distinction between opportunity costs and retaliation costs. Lawler and Bacharach, sought to test whether these forms of power are affected by different and mutually exclusive variables (Lawler & Bacharach, 1987). Previous theory held that differences in both total and relative punitive power will affect the use of retaliation while differences in total and relative dependency will affect concessions. Therefore, the two different forms of power will affect two different tactics of the actors. Lawler and Bacharach used a 2x2x2x2 factorial design to test the two theories together in one study. They found that concession choices were affected by total power on the dependence dimension and relative power on the punitive dimensions. Also, damage tactics were affected by relative and total power on the punitive dimension and relative power on the dependence dimension (Lawler & Bacharach, 1987). The most significant

finding in the Lawler and Bacharach study is that changes in relative power on either the punitive or dependence dimension can affect an actor's use of concessions and punitive tactics. In order to more fully understand behavior in conflicts involving both punitive and dependence relationships an analysis of changes in relative power is essential.

The third construct that is useful for the study of conflict in scholarly journal publishing is game theory. Game theory attempts to model relationships, particularly those involving conflict, as players in a game. As in games, each player selects strategies for reaching some preferred outcome (Murphy, 1991a). The options for each player in a game theory are reduced to choices on a decision tree; as each player selects strategies the outcomes progress through the convergence of the choices made by all players in the game. Central to game theory is that no choice made by a player is made in isolation. Each player selects strategies that will provide him or her with the best results given the likely moves by the other players. Therefore, the ability of one party to gain his or her desired ends rests not just on the decisions of other parties, but also on the ability to anticipate the choices that the other parties will make (Schelling, 1980).

Murphy has outlined three primary benefits of using game theory for the study of organizational conflict (Murphy, 1991b). First, game theory is an inclusive model that helps to avoid the polarization that is often seen in other models of organizational conflict. Second, game theory provides the opportunity to use mathematical models to test assumptions and procedures for specifying and quantifying facts. Third, game theory allows for fuller descriptions of conflict and cooperation by avoiding the value

judgments that are often associated with other models. Conflict and punitive tactics can be seen as productive strategies rather than behaviors to avoid.

Although game theory has been applied in numerous social contexts, there are several parameters that are common to all applications. First, a game may be either symmetric or asymmetric. An asymmetric game is one in which the strategies available for each player are not identical. Second, a game can be either zero sum or non-zero sum. A zero sum game is one in which one player's gain is exactly equal to another players loss. A non-zero sum game is one in which a gain by one player does not necessarily result in an equal loss by the other. Third, games can also be classified as either sequential or simultaneous. In sequential games players have knowledge of the earlier moves of other players. By contrast, simultaneous games are ones in which players have no knowledge of earlier moves of other players. Finally, games can be either finite or infinite. A finite game is one that has a specific number of rounds and an end to the game. Conversely, an infinite game is one in which strategies and moves continue indefinitely.

Mapping the conflict

The above conflict theories are useful in explaining many of the strategic choices made by players in the ongoing conflict over access to journal articles. If we view part of the price increase as a punitive strategy, that portion of the journal price increase that cannot be explained by the market forces listed above may be explained through conflict spiral and game theory. Journal publisher are in competition with each other to gain market share. According to game theory, publishers will select strategies that they feel will grow their market share. This may set up conflict not only with libraries, but with

other publishers. By raising prices beyond what they know a library can afford, they are forcing the library to cut subscriptions. If the library cuts subscriptions to the journals supplied by other publishers, it can be viewed as a successful tactic and a punitive measure dealt to the other publisher. Moreover, it would alter the relative power relationship among the competing publishers. Those whose titles were cut would experience a relative drop in power. Based on game theory, other publishers would attempt to inflict the same damage by raising their prices and rebalance the relative power between the publishers and thus creating a conflict spiral. This can continue year after year with each publisher attempting to push the other publisher out of business. In addition, this process of conflict spiral would be accelerated through consolidation in the publishing industry. As a publisher's market share increases due to a merger, that publisher increases their total power in the market which will increase their willingness to use punitive power.

Academic libraries are caught in this conflict for market share among journal publishers and, according to game theory, select strategies that provide the best alternatives for themselves. Although the library may not be the reason for the punitive price increases, they are certainly one of its recipients. The strategies selected by academic libraries can be better explained through dependency theory, rather than conflict spiral. Academic communities are dependent on commercial publishers for access to research. As noted earlier, the rapid consolidation in the journal publishing industry has reduced the number of alternative sources for academic libraries to obtain research. In addition, the need by faculty scholars for the articles results in a high affinity for the articles. Applying dependency theory leads us to conclude that

commercial publishers have a high degree of power over libraries based on the libraries dependence on the publisher's journals. According to the theory, the library would score high on both variables of dependency; high affinity and limited alternate sources.

As stated above, organizations are adverse to dependency and will seek to reduce their dependency when possible. It follows then, that academic libraries will seek out ways in which they can reduce their dependency on commercial journal publishers. Libraries can reduce this dependency through either the use of retaliation (punitive power) or concessions. Which strategies are ultimately selected will be based on the type of power and the total and relative power in the relationship (Lawler & Bacharach, 1987).   Evidence of both types of strategies can be demonstrated.

An example of a compromise strategy can be seen in the development of bundled pricing or "Big Deals." The Big Deal contract is a comprehensive licensing agreement in which a library or a consortium of libraries agrees to buy electronic access to all or a large portion of a publisher's journals for reduced cost and limited inflation rates. It is similar to purchasing a cable television package. The institutions involved in the consortium end up with many more titles than they had before for a price less than what they would have paid had each institution bought them individually.   The contracts usually run for several years and eliminate the right to cancel titles during the length of the contract. The collective buying power of large consortiums, like the University of California system, gave academic libraries more leverage in negotiations. That is, it altered the nature of the power dependence relationship between the publisher and the academic libraries. As Lawler and Bacharach predict, the decision on the part of the commercial publisher to negotiate a compromise pricing bundle was affected by

changes in relative power on the punitive dimension. As a collective group, a consortium can punish a publisher for raising journal prices by canceling titles across many libraries. This increased the libraries punitive power relative to the publisher, making compromise a more attractive strategy from the publisher's standpoint. Although the libraries were still dependent on the publishers for the journals, indicating no change in dependence power, there was real change in punitive power.

Big Deal bundles, however, are not a panacea for libraries in the conflict over access. As noted above, the Big Deal bundling does little to affect dependency power. Moreover, it may actually increase the dependency power of the journal publishers. Although the contracts pleased faculty, they received access to many more journals, there was little or no allowance for changing titles during the length of the contract to meet changing curriculum needs. Moreover, the contract did not allow for canceling titles to control expenditures during economic crisis. In January of 2004, a consortium of four academic libraries in North Carolina chose not to renew their Big Deal contract and reverted back to buying journals on a title by title basis, based on the individual institution's curriculum and research needs (Gibbs, 2005). Other consortia have made similar decisions (Verhagen, 2005). What is most interesting here is that the Big Deal bundles provide libraries with a strategy choice that increases punitive power, collective title cancellations, at the cost of increasing their dependency, far fewer choices in selecting titles. The factors that decide which choice is made by any specific institution is likely more dependent on other types of power; such environmental power and personal power at the institution. Although this covers an area beyond the scope of this paper, it is something that should be addressed in later research.

Another development that has impacted the power relationship between academic libraries and commercial publishers is the rise of open access journals. Open access journals are scholarly communication models that avoid the commercial publishing industry. They are maintained by professional societies or other not for profit organizations and are made freely available to everyone over the internet. As of January 2006, the Directory of Open Access Journals (DOAJ) reached the 2000 mark in open access peer reviewed titles. More than 200 additional titles have been added between January and May of 2006 ("Directory of Open Access Journals", 2006). Moreover, many titles are demonstrating substantial impact in their disciplines. For example, the PLoS Biology journal now is the "highest ranked general biology journal in the world (Van Orsdel & Born, 2006). Open access journals also generate more citations than those that do not offer open access, in some cases as much as 250 percent more (Van Orsdel & Born, 2006). These open access journals provide academic libraries with an alternative source for access to scholarly journals that was not available before internet technology.

In theory, an increasing ability to obtain scarce resources from alternative sources should alter the power relationship between two parties in conflict (J. Pfeffer & Salancik, 1978). This can be seen at the University of Wisconsin which has specifically avoided the Big Deal, meeting budget constraints by canceling high priced titles, to the consternation of the faculty, and pushing for the "reform" of scholarly communication through open access publishing (Frazier, 2005). Although these publishing models are still new, and the commercial publishers claim they have had no effect on their business, an analysis is necessary (Frazier, 2005).

Unlike Big Deal contracts, open access journals affect the resource dependence relationship between publishers and academic libraries. The availability of new journals from alternative sources increases the total power in the relationship and decreases the relative power advantage of commercial publishers. Both of these changes would predict a growing likelihood of the use of punitive power on the part of academic libraries. Many examples of an increase in punitive tactics or the threat of punitive tactics over the last year are evident. For example, two economists sent an open letter to university presidents suggesting that universities begin charging commercial publishers for the content they provide to overpriced journals (Bergstrom & McAfee, 2005). They then identified the most costly journals and rated their value, suggesting the publishes be billed for the articles in some of the titles. Although the suggestion is controversial, it is clearly a threat of a punitive measure not seen before. Another example is the collaboration among librarians and lawyers to pursue commercial publishers through the courts on claims of anticompetitive behavior. The offices of state attorneys general are examining the merits of these claims (Van Orsdel & Born, 2006). Again, this is a real threat of punitive action against publishers.

There are examples of new punitive measures on the part of journal publishers in response to the ones being threatened by libraries. For Example, the American Chemical Society attempted to convince Congress to remove funding for an open access database operated by the National Institutes of Health. Although the measure did not pass, the rebalancing of power between publishers and libraries is showing signs of conflict spiral.

Because the growth in number and acceptance of open access journals is likely to continue at a rapid pace, we are likely to see continued use of punitive tactics by libraries and counter tactics by publishers. Also, because there are still possibilities for further mergers among commercial publishers it is likely that publishers will attempt to maintain their power dependency advantage over libraries. What is most needed is an operational model that can track the acceptance and use of open access journals over time and correlate that data with changes in strategy selection.

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