Status and Collaboration:

The Case of Pro Bono Networks in Corporate Law[*]

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ABSTRACT

This article examines the role of status in shaping intersectoral collaboration between corporate law firms and public interest legal organizations (PILOs).We draw from middle-status conformity and status-signaling mechanisms to derive competing hypotheses about the processes that generate organizational collaboration within this network. We test our hypotheses using latent space models, a simulation-based method for the study of networks that is new to the discipline. In addition, we validate our results using QAP regressions, a well-established inferential network technique for weighted (i.e. non-binary) networks. Supporting the status-signaling hypothesis, high-status law firms tend to collaborate with similarly high status pro bono organizations. This gives rise to a highly unequal playing field where a handful of pro bono organizations have a wealth of connections to high-status law firms, while the majority of pro bono organizations only collaborate with few non-high-status firms. We discuss the implications of our findings for scholarship on status and organizations, as well as the role that corporate law firms play for facilitating access to justice in the contemporary United States.

To pursue their missions, nonprofit organizations often seek out collaborative relationships to cobble together revenue from diverse sources, forge interorganizational alliances, and build connections with a variety of stakeholders. This collaborative, networked model of nonprofit service delivery is often termed "collaborative governance" (Wood and Gray 1991; Ansell and Gash 2007) or "network forms of organization" in the public policy and management literatures (for reviews, see Powell 1990; Podolny and Page 1998; Thompson 2003). Collaborative governance arguably facilitates better coordination to pursue policy objectives at relatively low costs, allows for flexibility in the allocation of resources (Domhoff 2009; Au and Ferrare 2014; Simpson 2016), and enhances survival chances of nonprofits (Baum and Oliver 1991; Simpson 2016). However, not all organizations are equally likely to generate these collaborative relationships, thus creating an unequal playing field of "winners" with multiple collaborative relationships and "losers" with few or none (Alexander 1998; Brulle 2000). With over 60 percent of donations concentrated in the largest 2.5 percent of charities (Rosenman 2012), the nonprofit sector is clearly defined by extensive inequality in terms of financial performance, which is indicative of a drastically uneven exchange network between donors and recipients, or network inequality in interorganizational relationships.

Despite the critical role of intersectoral collaboration for nonprofits in an era of increasing resource scarcity (Barman 2007), little attention has focused on the role that status plays in structuring relationships to donors. We fill this gap through an analysis of the tendency for elite law firms to provide pro bono work to similar sets of nonprofits, or *network isomorphism*. Specifically, we apply latent space models, a novel inferential method for social network analysis, to investigate the role that status plays in shaping conformity between law firms in their selection of which nonprofits to assist.

Studying patterns of isomorphism in network affiliations, moreover, allows us to test competing expectations about status and conformity. On the one hand, scholarship suggests that middle-status positions are likely to be the most isomorphic within an organizational field (Phillips and Zuckerman 2001). On the other, status-signaling arguments have suggested that affiliations with high-status others can produce competitive benefits for actors in various markets (Podolny 1993; Galak, Gray, Elbert and Strohminger 2016; Faulk, McGinnis Johnson and Lecy 2017). A largely undeveloped corollary of the status-signaling argument is that the status of a given set of actors might play a key role in their ability to affiliate with specific elements of a different population (but see Sharkey 2014 on category status). This theoretical insight is critical for this paper because it means that pro bono legal assistance, a critical resource for access to justice in contemporary America, is partially determined by status dynamics *outside* the sector of public interest organizations *per se*. Thus, we theorize and analyze status as a cross-field force that structures intersectoral affiliation networks. This is important because these networks are a natural conduit for the exchange of resources between different populations of organizations. More precisely, we argue that prominent inequalities in the opportunity structure for exchange between organizations may emerge because high-status actors may prefer to affiliate with the same organizations in other fields or sectors, thus producing isomorphism, but this latitude may not be equally granted to actors from middle- and low-status categories. Therefore, this research addresses not only a substantive gap in the literature, but also tests competing hypotheses by investigating whether status differences among donors structure the field of intersectoral collaboration.

We examine intersectoral network isomorphism in the context of large corporate law firms providing pro bono services to public interest law organizations (PILOs) in the US.[1] Similar to the broader nonprofit sector, PILOs have insufficient resource capacity to meet the demand for their services, leading them to secure resources drawing from a patchwork of various sources (Albiston and Nielsen 2014). Most notably, large-firm pro bono assistance has emerged as the major mechanism for providing access to the legal system for poor and other marginalized individuals (Cummings 2004; Boutcher 2013). Professional rules within the legal profession currently mandate that lawyers provide fifty hours of pro bono legal services per year, and large law firms collectively donate millions of attorney hours toward otherwise unmet legal needs (Boutcher 2017).[2] Although prior research on pro bono has demonstrated that not all PILOs are equally likely to receive similar levels of support from law firms (Boutcher 2013), this is the first study to empirically analyze the factors shaping these patterns of collaboration. Specifically, we examine the extent to which large law firms partner with the same limited array of nonprofits (i.e., isomorphism in pro bono ties) and the role that law firm status might play in structuring these relationships. We argue that the status differentials between a given pair of law firms is associated with the degree to which pro bono affiliations are isomorphic. Given the scarcity of research on the topic, understanding the factors shaping interorganizational ties provides an important case study of relational inequalities in intersectoral collaboration.

[1] We use the term public interest law organization (PILO) broadly in order to capture the range of nonprofit organizations that receive pro bono assistance from large law firms to fulfill their missions to provide legal assistance to the poor and other marginalized individuals. These organizations range from traditional legal services and legal aid groups that deal with individual legal matters to impact litigation groups that focus on specific legal causes (e.g., ACLU, NAACP).

[2] According to Rule 6.1 of the American Bar Association's Model Rules of Professional Conduct: "Every lawyer has a professional responsibility to provide legal services to those unable to pay. A lawyer should aspire to render at least (50) hours of *pro bono publico* legal services per year." In this same rule, it is explicitly stated that these services can be provided to persons of limited means or "charitable, religious, civic, community, governmental, and educational organizations in matters that are designed primarily to address the needs of persons of limited needs."

STATUS, ISOMORPHISM, AND INEQUALITY IN COLLABORATIVE NETWORKS

Intersectoral collaboration is inherently a relational phenomenon with minimally two populations of actors, each set influenced by their own set of interests and their intrasectoral relationships (Useem 1988). We start with the premise that collaborative ties are nonrandom – that is, not all nonprofits are able to generate the same sets of relationships to external constituencies. Similarly, not all external actors are interested in connecting with certain organizations. Since ties are likely patterned along the different status hierarchies of the actors involved, we argue that this creates an unequal opportunity structure for interorganizational exchange. The question of status, networks, and isomorphism in collaborative networks of nonprofits intersects with several literatures.

First, institutional researchers suggest that network connections among organizations induce isomorphic change in organizational practices (DiMaggio and Powell 1983; Powell and Friedkin 1987; Strang and Soule 1998). Researchers have applied this insight to examine how networks promote isomorphic patterns in the adoption of specific organizational practices, such as total quality management (TQM) programs (Westphal et al. 1997), ISO 9000 certification (Guler et al. 2002), protest tactics (Wang and Soule 2012), and the design of CEO compensation packages (Davis and Greve 1997; Gallani 2016). In these accounts, interorganizational networks provide key pathways for diffusing a specific organizational practice through a population of organizations, thereby making connected organizations more similar over time.[3] Critically,

[3] It is worth noting that other researchers have argued that there are limits to isomorphism because of the advantages of functional differentiation (Stadtfeld et al. 2016) and have highlighted the need for investigating the co-evolution of the two (Padgett and Powell 2012).

research on organizational isomorphism has typically focused on the adoption of a single innovation or organizational practice, so isomorphism in network affiliations is a neglected topic.

Second, there is organizational research on how status, in particular, is linked to the formation of ties to specific third parties. A number of studies have focused on exclusive ties, such as between advertising agencies (Baker, Faulkner and Fisher 1998) or auditors (Levinthal and Finchman 1988; Jensen and Roy 2008) and their clients. These ties are exclusive to the extent that clients typically select only one firm to represent them, but Han (1994) importantly highlights that client-auditor relationships are actually *many-to-one* – that is, multiple firms selecting a single accounting firm – and that status is a critical factor in auditor selection. Specifically, he finds that high-status firms in the same industry tend to select different auditors; middle-status firms then mimic these choices. To the best of our knowledge, no studies have examined how firm status organizes the selection of multiple third-party organizations by multiple focal organizations – that is, *many-to-many* relationships. This is a major empirical gap because even though many-to-many collaborative networks – what social network analysts refer to as affiliation, bipartite, or two-mode networks – are highly prevalent in both ecological and organizational systems (Saavedra, Reed-Tsochas, and Uzzi 2009), the significance of status as a field-level organizing principle has been underappreciated in the context of these networks (Uzzi 1999; Barman 2016).

To clarify our contribution, Figure 1 shows archetypes of relationships that have been studied in the literature on status and interorganizational networks. Panel A in Figure 1 represents a one-mode (intrasectoral) network, the most common type of study in this literature. Institutional researchers studying the diffusion of a single innovation through an interorganizational network (intrasectoral, many-to-one relationships) fall into this category.

Panel B represents a two-mode network where many firms in one sector select, based on their status, one firm in a different sector (intersectoral, many-to-one relationships). Here, the work of Han (1994) on client-auditor relationships is an exemplar. Finally, Panel C depicts the case where many organizations in one sector select organizations in another sector (intersectoral, many-to-many relationships). Since this paper analyzes the role of status in the emergence of pro bono ties between law firms and nonprofits, it directly contributes to a better understanding of this neglected type of interorganizational collaborative relationship.

[FIGURE 1 ABOUT HERE]

Conversely, a related organizational literature examines how existing affiliations determine the status of actors. Here, the core argument is status transfer: actors benefit from high-status affiliations. For example, research has focused on how network affiliations act as status signals (for a review, see Sauder, Lynn, and Podolny 2012), which then have economic implications (Podolny 1993, 2001; Benjamin and Podolny 1999; Faulk, McGinnis Johson and Lecy 2017). In this research, an actor's network of affiliations signals its status and plays a key causal role on outcomes. How these affiliation ties between high-status actors are formed in the first place has received very limited attention.

Third, the literature on social networks more broadly has limited research on the link between status and network isomorphism. Most of the recent research on status in networks has focused on the role of status asymmetry for tie reciprocation (e.g., Zeng and Xie 2008; Ball and Newman 2013) or the link between status and cohesion (Beckfield 2010; Powell et al. 2005). In contrast, there also exists a research tradition in network analysis focused on similarity in network ties, or structural equivalence (White, Boorman, and Breiger 1976), but inferential techniques to predict equivalence classes are relatively new (e.g, Nowicki and Snidjers 2001;

Daudin, Picard and Robin 2008; Hoff et al. 2002). This study represents an attempt to implement relatively new inferential techniques to predict equivalence in an affiliation network.

Finally, the status-isomorphism link in many-to-many, two-mode networks may be particularly important for the nonprofit sector. Intersectoral networks between nonprofits and third parties are common (see, for example, Peterman, Kourola, and Levitt 2014; Simpson 2016; Faulk et al 2017; Larsen and Ellersgaard 2017). Examples of these intersectoral networks include relationships between for-profits and their support of nonprofits (Galaskiewicz 1985; Marquis et al. 2013), corporations and their participation in policy-making bodies and advocacy groups (Useem 1984; Mizruchi 1992; Dreiling and Darves 2011), and law firms and the provision of pro bono services to organizations (Boutcher 2013). Yet few studies of intersectoral networks among nonprofits have examined isomorphic patterns of intersectoral ties (but see Dreiling and Darves 2011). We believe that studying the role that status plays in shaping isomorphic patterns of affiliation in the contemporary nonprofit sector may shed light on inequality among organizations, in general, and within the expansive nonprofit organizational field, in particular.

STATUS AND CONFORMITY REVISITED

What role does status play in structuring interorganizational collaborative networks? The dominant theoretical conjecture in recent years is represented by an intuitive notion, namely, middle-status conformity. In contrast, we posit a status-signaling perspective, which suggests that isomorphism is highest among high-status actors. To examine the role that status plays in shaping isomorphic patters of collaboration, we specify below competing theoretical expectations based on these two perspectives.

Middle-status conformity

With its origins in social psychology, the middle-status conformity argument posits an inverted U-shaped pattern of conformity, where both high and low-status actors have lower levels of conformity, or conversely higher levels of nonconformity (Phillips and Zuckerman 2001). The basic argument is that high-status actors, being secure in their status, can afford nonconformity with their status-peers, whereas lower-status actors engage in nonconformity as a practice of rebellion, deviance, or counter-signaling in relation to middle-status referents. Middle-status actors, in contrast, can neither afford high-status nonconformity, nor defy conventions by counter-signaling due to the threat of status loss. Middle-status actors are also considered to be more concerned with issues related to status because, when compared to both high- and low-status actors, their position is more fluid since they confront more opportunities (threats) to effectively gain (lose) status (Hu and Van den Bulte 2004).

Phillips and Zuckerman (2001) further develop the middle-status conformity hypothesis by specifying the following: (a) the logic for the existence of three status-based classes and (b) scope conditions of the theory. First, they argue that status involves a social boundary, dividing a population into members and nonmembers. Low-status actors, excluded as nonmembers, engage in deviance, whereas middle-status actors, being insecure about their social position as members, engage in conformity. High-status actors, secure in their social position, are not pressured into conformity and, indeed, are motivated to continuously engage in differentiation from middle-status actors to preserve their status advantage. Second, this perspective utilizes several scope conditions, including the need for distinguishing status from confounders (e.g., class) and the fact that actors' conformity of action should be salient to their identity. In short, conformity and nonconformity are conceptualized as meaning-making or symbolic processes related to group

distinctions. This perspective, we argue, also implicitly assumes a cost perspective where high-status actors can afford nonconformity and low-status actors lack the resources to mimic middle-status actors.

We believe the case of pro bono fits the scope conditions for middle-status conformity. More precisely, like Phillips and Zuckerman (2001), we study corporate law firms and place them, based on empirical evidence, into three status categories based on perceptions (e.g. a published survey of perceived rankings). By using public rankings, this paper incorporates a key component of status beliefs, namely, the importance of "publicity" to understand status advantages (Correll et al. 2017). In this regard, recent research shows how law school public rankings generate status advantages for highly ranked schools (Espeland and Sauder 2016). Furthermore, we also distinguish status from class by separately accounting for reputation beliefs (status) and class (revenues). Finally, we highlight that the practice this paper focuses on (pro bono services) is indeed relevant for law firms' identities and for the ethos of the profession more generally (Cummings 2004; Sandefur 2007; Rhode 2005). This makes the study of pro bono ties relevant for both law firms and, of course, for PILOs. Our case is more general than Phillips and Zuckerman's, however, since we focus not on the adoption of a single practice in one sector (one-mode, many-to-one), but on a larger pattern of intersectoral associations (two-mode, many-to-many). This implies the following hypothesis:

> *H1: Isomorphism in pro bono ties between law firms will take the form of an inverted U-shaped curve where middle-status firms will have higher levels of isomorphism than high- and low-status dyads.*

Status signaling

In contrast, there is a growing literature demonstrating how ties with high-status third parties can confer status-related benefits to organizations (Granados and Knoke 2016; for a review, see Sauder, Lynn and Podolny 2012). The status-signaling perspective is typically framed in terms of how status is used as a noisy signal for quality. Because quality is often unobservable, status is used as a highly imperfect signal where an organization's network ties becomes the primary means for making relational claims about status. High-status firms are then able to capitalize on their status to generate economic benefits. Studies employing the status-signaling perspective rarely address the question about where high-status affiliations come from in the first place. Here, we extend the status-signaling perspective by highlighting mimetic processes within an organizational field.

The status-signaling perspective suggests that forming ties is determined by screening. Following Gould (2002), we assume that actors prefer relations with desirable others, but are willing to settle for those less preferred, available options. On the one hand, firms are seeking to place their associates in pro bono assignments that are the most rewarding, prestigious, or meaningful. These placements are critical for marketing the firm to clients as well as to law school students. On the other hand, PILOs are seeking to work with highly skilled lawyers, and firm status operates as signal for legal skills. To the extent that both firms and PILOs are seeking to work with desirable actors, we argue that high-status actors are the most likely to have their preferences fulfilled.

In the context of intersectoral networks, our arguments suggests an expectation where high-status actors are more likely to construct preferred networks ties to high-status actors in another sector, whereas middle- and low-status actors are less likely to succeed. High-status

firms are therefore expected to be especially likely to monopolize affiliations with the most sought-after pro bono assignments. This leads to the competing hypothesis:

H2. Dyadic isomorphism in pro bono ties between law firms will increase with the status of the firms.

By focusing on status distinctions within an organizational field, our study moves beyond purely organizational-level explanations for the observed patterns of inter-organizational collaboration, explanations that are typically based on factors like nonprofits performance efficiency (Frumkin and Kim 2001; Tinkleman and Mankaney 2007), geographic propinquity of the exchange partners (Kono et al. 1998; Bond 2012) or organizations' age, size, or revenue (Frumkin and Kim 2001). Nevertheless, organizational characteristics and degree (popularity) are important confounders of status and we control for them in the analyses presented below.

METHODS

This research focuses on the population of large corporate law firms in the United States around 2005. To create a dataset of large U.S. law firms involved in pro bono activities, we merged three data sources: (1) the *Vault Guide to Large Firm Pro Bono Programs* (Vault 2006), the *Vault Law 100 (2006-2008)*, and the *American Lawyer 200* (2005). From the *Vault Guide to Large Firm Pro Bono Programs*, we extracted information on pro bono programs and firm practice areas among 138 large firms for 2004 and 2005. Our measure of firm status was based on the 2006-2008 *Vault Law 100*. This is a published ranking of the top one hundred firms, based on surveys conducted in 2006, 2007 and 2008 of associates who ranked the top 100 most prestigious law firms in the United States. All the remaining control variables were obtained from the 2005 version of the *American Lawyer 200* (*Am Law*).

Our analytic sample included 84 large, U.S.-based law firms who were included across all three data sources.[4] Following Mizruchi and Christopher (2006), dyads are the appropriate level of analysis to the study of organizational networks when the outcome variable (i.e., similarity) and predictors are relational. We restructured firm-level data as dyadic data, such that each observation represented a specific pair of firms, and variables tapped similarity or difference between pairs of firms. In total, there were 3,486 law-firm dyads ([84*(84-1)]/2).[5] Descriptive statistics for firms and dyads are presented in Table 1.

[TABLE 1 ABOUT HERE]

Dependent variable: similarity in pro bono ties within firm dyads

In the *Vault Guide to Large Firm Pro Bono Programs*, law firms were asked the following item: "*List up to 10 organizations for which your firm performed pro bono legal services in 2004 and 2005.*" This item was used to construct a two-mode matrix (**A**) of pro bono organizations (*o*) by firms (*f*), denoted as $\mathbf{A}_{o \times f}$, which we then transformed into a firm-by-firm matrix ($\mathbf{B}_{f \times f}$), where each cell indicated, for a pair firms, the count of pro-bono organizations that both worked with. More formally, the transformation of $\mathbf{A}_{o \times f}$ was accomplished via the projection formula (Breiger 1974):

[4] As part of the sensitivity analyses, we expanded our sample size from 84 firms to 137 firms in order to increase status variance. We did this using data from the *Am Law* 2005 rankings. Although the *Am Law* rankings increase our sample size significantly, these rankings are simply a function of firm gross revenues. Because the *Am Law* measure of status is confounded with class, we decided to use the *Vault Law 100* data, which is based on prestige perceptions of practicing attorneys. Thus, although this reduces the sample size of our models, we believe it to be a truer representation of status than revenue. Nonetheless, as shown in the sensitivity analyses section, our main results are robust to these changes in sample size.

[5] By definition (Wasserman and Faust 1994), in undirected networks the maximum number of dyads is given by the formula ([N*(N-1)]/2), where N is the number of elements –e.g. firms– in the matrix. In the case of this paper, [84*(84-1)]/2 = 3,486. A network is said to be undirected if the order of the two endpoints of each tie (i.e. firm *i*, firm *j*) has no consequence for the analysis. In other words, the fact that firm *i* shares, say, 5 pro bono client organizations with firm *j* is equivalent to say that firm *j* shares 5 pro bono client organizations with firm *i*.

$$\mathbf{B}_{f \times f} = (\mathbf{A}_{o \times f})^{\mathrm{T}} \mathbf{A}_{o \times f} \quad \text{eq. (1),}$$

Where $\mathbf{A}_{o \times f}$ was the original *o*-to-*f* matrix and $\mathbf{B}_{f \times f}$ is the resulting firm-by-firm matrix. In order to measure firm similarity in pro bono ties, we computed the Jaccard similarity index (Jaccard 1912) for each dyad. This index is a measure of the number of shared collaborative ties between any two firms as a component of the total ties possible across each of the two firms in the dyad. More formally, the equation for the Jaccard similarity index between the i^{th} and j^{th} *firm* is equal to:

$$\mathrm{J}_{ij} = \frac{\mathrm{D}ij}{\mathrm{D}ij + \mathrm{D}i + \mathrm{D}j} \quad \text{eq. (2),}$$

Where J_{ij} is the Jaccard similarity index between firm *i* and firm *j*. D_{ij} is the number of pro bono clients shared by firm *i* and firm *j*, D_i is the number of unique pro bono organizations connected to firm *i*, and D_j is the number of unique pro bono organizations tied to firm *j*. The index ranges from 0 (no overlapping ties to pro bono clients between firms *i* and *j*) to 1 (complete overlap between firms *i* and *j*). Since all pairs of firms are included in the calculation, the result of computing the Jaccard index for all elements in $\mathbf{B}_{f \times f}$ is a new weighted (i.e., non-binary) sociomatrix $\mathbf{J}_{f \times f}$ that represents dyadic similarity (isomorphism) for all 3,486 dyads present in the pro bono network $\mathbf{B}_{f \times f}$. For ease of interpretation, each entry of the matrix $\mathbf{J}_{f \times f}$ was multiplied by 100.

Key independent variable

Dyadic status. As mentioned above, the status measure for firms was based on a composite average of the top 100 law firms listed in the *Vault Law 100*, which was published in 2006, 2007, and 2008. Over 17,000 associates took the survey, and the resulting rankings were

published each year as the "100 best firms to work for."[6] Following Phillips and Zuckerman (2001) who also studied large corporate law firms, we constructed a firm-status measure with three categories: high-, middle-, and low-status. The first category of the dyadic-status variable, hereafter referred to as *high-status dyads*, was comprised by pairs of firms in which both were between the 1st and 25th position in the composite Vault Ranking. The second category, *middle-status dyads*, only contained pairs of firms that were between the 26th and 75th position in the composite Vault rank. The final category was for *low-status dyads* – that is, cases in which both firms were between the 76th and 100th position in the context of the composite Vault rankings.[7] For completeness, we developed two additional status categories across the dyads. The first one contains dyads in which there was a one-status difference between firms (e.g. firm *j* was high-status while firm *i* was middle-status or firm *j* was middle-status while firm *i* was low-status). The second category contains dyads in which there was a two-status difference between firms (i.e., firm *j* was high-status and firm *i* was low-status). High status dyads were selected as the reference category in all statistical analyses.

We conducted extensive analyses to generate a qualitative, empirically-grounded categorization of dyadic status based on the original firm-level *Vault Law 100* data. This approach was needed because it was not clear where the cut points for status categories (e.g. high-, middle-, and low-status actors) existed within a particular field. OLS regressions were used to test for the association between dyadic similarity ($\mathbf{J}_{f \times f}$) and different dyad-based

[6] For a discussion of Vault's methodology in collecting the ranking, see http://www.vault.com/company-rankings/law/vault-law-100/?sRankID=2.

[7] For the sake of clarity, there are 84 firms in both the (composite) *Vault Law 100* and the *Vault Guide to Large Firm Pro Bono Programs*. The Vault ranking, however, lists (i.e. ranks) firms in positions 1 to 100. So, for instance, it is possible to have complete info about the firm in position 99th in the Vault ranking, but we might not have complete info about firm in position 47th in the Vault ranking. In that context, the former firm would be part of the analytic sample, while the latter would not be part of it.

qualitative status classifications (results available upon request). The goodness-of-fit of each model was assessed through the BIC. Results consistently suggested three different status categories. As reported in the robustness checks section, different analyses show that the key findings of this paper do not depend on the specific values of these cut off points.

Control variables

Based on existing literature (Uzzi and Lancaster 2004; Sherer 1995; Phillips and Zuckerman 2001; Phillips 2001), we controlled for a number of variables in our models. All continuous variables were computed as the absolute difference between the values for the two firms in a given dyad. To tap firm-size differences, we computed the absolute difference in total number of lawyers between firms in each dyad. Other continuous variables included as dyadic controls were as follows: differences in revenue, differences in pro bono hours, differences in year of establishment (firm age), differences in number of practice areas, differences in percent female lawyers, and differences in percent minority lawyers. In addition to these continuous controls, we created two dummy variables for geographical location. The first indicated for each dyad whether both firms were headquartered in the same city, excluding New York City; the second was a dummy for pairs of firms located in New York City. Dyads with firms headquartered in different cities were coded as the reference category.

Analytical strategy: latent space modeling

To examine whether firm status was associated with isomorphism in pro bono ties, we employed latent space modeling (Hoff, Raferty and Handcock 2002), which is an inferential network modeling technique appropriate for analyzing network data this is directed or undirected

as well as binary or weighted (non-binary). Originally, the latent space model was primarily developed to account for unobserved homophily in (latent) social space (Krivitsky et al. 2009). This modelling strategy is critical for this paper since the outcome matrix under analysis ($\mathbf{J}_{f \times f}$) was indeed a weighted matrix. The latent space model assumes that a given outcome network (e.g. $\mathbf{J}_{f \times f}$), and the (weighted) ties between actors it contains ($\mathbf{J}_{ij}$), occur with a probability that depends on actors' distances from each other on a k-dimensional latent social space (Hoff, Raftery and Handcock 2002; Handcock, Raftery and Tantrum 2007; Hoff 2005). The key idea is that nodes with small (large) distances in the latent social space should also have small (large) distances in the observed network (e.g. $\mathbf{J}_{f \times f}$). Therefore, it is assumed that the observed network provides critical information about the underlying social distance between each pair of nodes *i* and *j*.

Latent space models assume that once dyadic distances in (latent) social space are properly derived and controlled for, then the set of all dyadic observations (i.e. the network matrix under analysis) can be modeled through a dyadic generalized linear model (Hoff 2005; Krivitsky et al. 2009; Cranmer et al. 2017). More formally, using the notation of Cranmer et al. (2017), the probability of observing the network matrix **N** under the latent-space modeling framework takes the following form:

$$P(N|Z,X,\Theta) = \prod_{i \neq j} P(Nij|\boldsymbol{zi}, \boldsymbol{zj}, \boldsymbol{xij}, \Theta) \qquad \text{eq. (3).}$$

This means that the observations $\mathbf{N}_{ij}$ in the network matrix **N** are conditionally independent given their specific positions z_i and z_j in latent space, a vector of dyadic covariates $\mathbf{x}_{ij}$ and their respective parameters $\boldsymbol{\Theta}$. Latent space models were fitted using the R package *latentnet* (Krivitsky and Handcook 2008). This software effectively allowed us to control for network dependencies by conditioning on dyadic positions in an unobserved Euclidian space

(Handcock et al. 2007). In particular, the dyadic similarity associated with each dyad in $\mathbf{J}_{f \times f}$ was modeled using distribution and link functions that were normal. The latent space models featured in this paper were implemented using Bayesian inference in the context of a Markov chain Monte Carlo (MCMC) algorithm (Krivitsky and Handcook 2008). Since there were not specific *a priori* expectations with regards to the particularities of the shape of the normal distributions being fitted, very small numbers (0.001) were used as priors for the two user-imputed parameters required by *latentnet*: scale and degrees of freedom of the variance of the dyad values. Every time a model was fitted, a burn-in of 400,000 full simulated networks was used; then, for the final sample, 50,000 new simulated networks were sampled from which we kept every one hundredth network.[8] The number of draws were always superior to the maximum needed for attaining convergence in the estimation of any of the parameters being estimated.

Given that the focus of this paper is on the relationship between dyadic status and dyadic similarity, the latent space model was an ideal candidate to get a "clean" test of this relationship. This is the case because, unlike other advanced modeling alternatives that can also accommodate both network autocorrelated data structures and weighted networks (e.g. the Generalized Exponential Random Graph (ERG) model [Wilson et al. 2017]), the latent space model does not require the specification of endogenous dependencies (e.g. triadic closure) behind the network data-generating process. For these reasons, the latent space model was the main inferential framework used in this study.

The simulation-based approach of the latent space model (and the ERG model) account for omitted variable bias (see Cranmer et al. 2017 for a technical explanation). This is a critical advantage over other inferential frameworks traditionally used in the networks literature to test

[8] For more details on specification and model setup see (Krivitsky et al. 2015)

associations like the one studied in this paper. The best example of these traditional inferential models are multiple linear regressions that make use of nonparametric permutation-based hypothesis tests, also known as Quadratic Assignment Procedure (QAP) regressions. Due to its well-established position in the literature (Krackhardt 1987; Krackhardt 1988; Dekker et al. 2007; Heaney 2014; Cranmer et al. 2017), we also conducted QAP regressions, described in Table 3 and Appendix A to test whether our results were robust to different modeling techniques.

RESULTS

Descriptive Analysis

Table 1 shows that the elite firms in our data are indeed quite large and established: firm size averages approximately 700 lawyers with average annual revenues of $443 million and an average of 16 practice areas. Similarly, the average firm was founded more than one century ago. About one third of firms are located in New York City and are primarily white (~75%) and male (~65%). A total of 42 firms were classified as middle-status while an equal number of firms where classified as high- and low-status (21 firms per category). In terms of the firm dyads, large corporate law firms show a relatively high level of isomorphism in pro bono ties. The mean for the Jaccard index is 42, which suggests that on average firms share about two-fifths of their pro bono client organizations. This figure is, however, less than both the density of the pro bono network (0.60) and the average degree (50.07), which are indicators of the overall number of ties in the network.

[TABLE 2 ABOUT HERE]

Figure 2 presents a network visualization generated through an implementation of the Fruchterman and Reingold force-drawing algorithm included in the *sna* R package (Butts 2008). The sociogram shows a central cluster constituted by a substantial number of firms that work with the same pro bono organizations. This central cluster is surrounded by a smaller number of firms that work with only one or two pro bono organizations that are also tied to another firm, with the remaining relationships appearing idiosyncratic. In other words, this network resembles a core-periphery structure, which has been reported before in both organizational studies and in network studies of the legal profession (Faulkner 1987; Mintz and Schwartz 1981; Paik, Southworth, and Heinz 2007). There is only one firm – Baker & Daniels – that works with completely idiosyncratic pro bono organizations.[9] Thus, Figure 2 suggests that the national pro bono market among the largest law firms is highly integrated.

Table 2 provides descriptive statistics of the network shown in Figure 2. From a total of 328 pro bono organizations, law firms collaborate with 50 of them, on average. Seen from the perspective of pro bono organizations, the average PILO in the network is connected to only 2.5 law firms. These numbers suggest that pro bono is indeed concentrated among a relatively small number of organizations. In other words, the descriptive results indicate a highly unequal distribution of pro bono ties among a relatively small number of organizations. This concentration is reflected in the high level of law firm isomorphism in pro bono ties, which we analyze next.

Latent space models

[9] The pro bono organizations that work with Baker & Daniels are: 7th Circuit Pro Bono Appellate Program, Child Advocates Inc, Community Development Law Center, Indiana Legal Services, Indianapolis Bar Association, Neighborhood Christian Legal Clinic, and Protective Order Pro Bono Project

Table 3 presents parameter estimates from latent space models of pro bono isomorphism on status and control variables in firm dyads. BIC values indicate that the best-fitting model was Model 3. Model 1 provides an intuitive way to carry out a comparison of means by status after taking into account firms' position in (latent) social space. This model indicated that middle-status dyads (b = -6.471, p <0.001), low-status dyads (b= -3.506, p <0.001), and one-status-difference dyads (b = -2.986, p <0.001) are each associated with lower average levels of similarity in their pro bono ties compared to high-status dyads. Two-status-difference dyads also exhibit a negative coefficient, but it does not reach conventional levels of statistical significance (b= -0.848, p. >0.1). These results suggest that the average level of dyadic similarity in pro bono ties exhibited by high-status dyads is between 3.5% and 6.4% higher than the level of dyadic similarity found in middle and low-status dyads. Importantly, the larger negative coefficient associated with the level of similarity of middle-status firms vis-à-vis high-status firms is indicative of middle-status nonconformity in the pro bono ties network. As shown below, the key finding that non-high-status dyads in general, and middle-status dyads in particular, exhibit less similarity in their network connections than high-status dyads is robust to different modelling frameworks, different specification of both the dependent and key independent variables, and different samples.

[TABLE 3 ABOUT HERE]

Model 3, the unrestricted Latent Space model, examines associations between dyadic similarity in pro bono ties and status, net of controls. This model shows little qualitative difference in the results, compared to Model 1. The one exception is related to the effect of two-status difference dyads, which now reaches statistical significance at the 0.1 level (b = -1.201, p = 0.0509). Model 3 still shows that middle-status dyads (b = -4.982, p <0.001), low-status dyads

(-1.540 p <0.1), and one-status-difference dyads (b = -2.836, p <0.001) are less isomorphic than high-status dyads. Appendix B, which provides a representation of the latent (social) space derived from the fully-specified model, provides a graphical representation of the model fit to the data.

In terms of the control variables, Model 3 shows that log revenue difference (b= 1.079, p <0.001), pro bono hours difference (0.013, p <0.05), age difference (0.007, p <0.05), race difference (0.129 p <0.001), firms based in New York City (b= 11.527, p <0.001) and in the same city but not in New York City (b= 2.113, p <0.01) are each associated with higher levels of similarity. It is worth noting the size of the New York City effect. This coefficient suggests a process of homophily generated by geographic propinquity: if both firms in a given dyad are located in New York City, they tend to be more similar than firms whose headquarters are located in any other two different cities. On the other hand, Model 3 also indicates that differences in the number of practice areas (b= -0.042, p <0.05), and differences in terms of size (b= -0.002, p<0.001) are associated with lower levels of similarity.

In order to explore the robustness of these findings, Model 4 in Table 3 presents the results of a QAP regression (see Appendix A for an explanation of QAP regressions) using the same covariates as Model 3.[10] Results from this new model indicate that middle-status dyads (b = -19.615, p <0.001), low-status dyads (b= -13.834, p. < 0.01), one-status-difference dyads (b = -14.530, p <.001), and two-status-difference dyads (b= -6.494, p. < 0.01), are indeed consistently associated with lower levels of dyadic similarity when compared to high-status dyads. These

[10] QAP p-values can be interpreted as in a conventional test of significance with a null hypothesis of random assignment (i.e. independence) between the variables under analysis (Haney 2014). Results based on 10,000 permutations are identical to those based on 2,000 permutations (results available on request).

results mirror the main results of the latent space model, but among the control variables, only size difference and the New York City effect remain statistically significant.

Taken together, the evidence suggest that high-status dyads consistently have the highest level of similarity (i.e. conformity) in pro bono ties, a conclusion that does not appear to be mediated by any of the controls. These results are inconsistent with H1 and partially support H2. In particular, middle-status nonconformity consistently emerges as a critical finding to explain (dis)similarity in pro bono ties of elite corporate law firms in the U.S, which is evidence in favor of H2.

Network inequality

Given that the evidence suggesting prominent status-based network inequalities in the structure of pro bono ties, a key question remains: how does this map onto the opportunity structure for interorganizational exchange between elite law firms and pro bono organizations? To address this question, it should first be noted that public interest law organizations are heterogeneous in terms of their actions and scope. Indeed, Figure 3 plots four affiliation (two-mode) networks of law firms by social organizations based on the classification developed by IDENTIFYING AUTHOR: cultural clients (e.g., Boys Choir of Harlem), legal services clients (e.g., Legal Aid Society), cause-oriented clients (e.g., Lawyers for Children in America), and professional association clients (e.g., Women's Bar Foundation).[11] This is important because corporate law firms in the U.S. could be systematically tied to pro bono client organizations that tend to belong to specific sectors irrespectively of their status. We expect that the network inequalities reported in Table 3 are a systemic, rather than sector-based, phenomenon.

[11] For a thorough analysis and description of these four categories see IDENTIFYING AUTHOR. As shown in the next section, the Latent Space model results hold in the contexts of these subgraphs.

[FIGURE 3 ABOUT HERE]

Figure 3 clearly shows that legal service clients and cause-oriented clients are the two main types of pro bono organizations. Based on this information, Models 1 and 2 in Table 4 show results where the original fully-specified Latent Space model (Model 3, Table 3) was fitted to the one-mode projection of the legal services subgraph and the cause-oriented subgraph separately. In addition, we fitted these two new models using QAP regressions to make sure that our findings were not a mere artifact of the Latent Space modeling framework. Findings fully support the results reported in Table 3, validating our main conclusions based on the full network and the Latent Space modeling framework.

[TABLE 4 ABOUT HERE]

Based on this same 4-group classification of all pro-bono client organizations, Figure 4 plots the number of unique connections (i.e., degree) between the 84 elite law firms under analysis and the 328 pro bono organizations tied to them. The long tail that describes the number of connections in the full network (Figure 4, panel A), and in the legal services (Figure 4, panel B) and cause-oriented network (Figure 4, panel C), is indicative of the pervasiveness of the highly uneven opportunity structure for interorganizational exchange that the statistical analyses already uncover. Take two different organizations in each main (sub)network as an example. In the cause-oriented category, ACLU is paired with a total of 27 out of 84 law firms (10 high status, 13 middle-status, and 4 low-status), while organizations like the Detained Immigrant Children's Project is paired with only 1 low-status firm. Similarly, in the legal services category, an organization like the Legal Aid Society is paired with 33 law firms (11 high status, 15 middle-status, and 7 low-status), while the Neighborhood Christian Legal Clinic is paired with 1 middle-status law firm. These patterns are indicative of the main structure of the network: on the one

hand, there are a handful of clear pro bono client *winners* that have multiple collaborative relationships with several law firms. On the other hand, there are many pro bono client *losers* tied to a very low number of firms. Critically, these inequalities not only can be seen in the number of ties a given pro bono client organization has, they actually can be translated into the number of pro bono hours available to nonprofits. This is true since, on average, high-status firms devote a total of 48,155 hours in a given year to pro bono legal assistance, while middle-status law firms devote 30,297, and low-status firms only devote 22,839. In this sense, the network inequalities uncovered directly affect access to justice in contemporary America. PILOs with ties to high-status firms have much better chances of accessing more hours of pro bono legal assistance.

[FIGURE 4 ABOUT HERE]

The evidence presented in this article strongly suggests prominent inequalities in the access to pro bono legal assistance in contemporary America. The evidence also suggests that these inequalities are augmented by status-based dynamics since high-status dyads tend to be more isomorphic than any other type of dyad. This means that, above and beyond key confounding factors like firm size, class (i.e. revenue), or location, high-status firms tend to assist the same pro bono clients. This uneven opportunity structure for interorganizational collaboration is, therefore, a prominent force that shapes the structure of pro bono collaboration.

Sensitivity Analyses

We conducted additional sensitivity analyses to examine the robustness of our results. First, we employed an alternative specification of our dependent measure that is sensitive to degree-based effects. Here, the fully-specified model (Table 3, Model 3) was re-estimated using the inverse log-weighted dyadic similarity algorithm (Lada and Adar 2003). This measure of

similarity calculates the number of common neighbors of the two firms in a given dyad weighted by the inverse logarithm of the degrees of those two firms. This estimation "is based on the assumption that two vertices [e.g. two law firms] should be considered more similar if they share a low-degree common neighbor, since high-degree common neighbors are more likely to appear even by pure chance" (Nepusz and Csardi 2015:273). Results from this analysis, reported in Table 4, Model 3, show no qualitative difference when compared to the results in Table 3 Model 3, thus suggesting that the main findings of this paper are not a mere artifact of the particular specification of the dependent variable in general, or of degree-based constrains in the opportunity structure for exchange in particular.

Furthermore**,** a plausible argument against the results presented in this paper is related to the specific cut-off points used to distinguish between status categories. Results (available upon request) using the fully-specified model show that increasing (reducing) the size of the middle-status category, and therefore, reducing (increasing) the size of the high- and low-status categories does not affect the main conclusions of this paper. In other words, evidence based on different cut off points supports the main results of this paper. The sensitivity analyses that were performed changed the size of the three status categories by increasing or reducing the size of the middle-status category from their original configuration (1^{st} -25^{th} /26^{th} -75^{th} /76^{th} -100^{th}), to the four following ones: 1^{st} -30^{th} /31^{st} -70^{th} /71^{st} -100^{th} || 1^{st} -35^{th} /36^{th} -65^{th} /66^{th} -100^{th} || 1^{st} -20^{th} /21^{st} -80^{th} /81^{st} -100^{th} || 1^{st} -15^{th} /16^{th} -85^{th} /86^{th} -100^{th}. Finally, we used an alternative measure of status available in the 2005 *Am Law* rankings. In this context, the fully-specified model was re-estimated using data from the American Lawyer (*Am Law*) rankings of 2005. Using the *Am Law* rankings introduces two major changes. First, the sample size increased from 86 firms to 137 firms (i.e., from 3,486 to 9,316 dyads). Second, and more importantly, status is measured using

an entirely different approach: the *Am Law* firm rankings. As can be seen in Table 4 Model 4, the main findings reported in this paper holds: high-status dyads were consistently, and significantly, the most isomorphic dyads. Finally, it is also worth noting that middle-status dyads appear as the least isomorphic dyads in all but one of the five models we ran as part of the sensitivity analyses (see Table 3 Model 4, and the four models in Table 4).

DISCUSSION AND CONCLUSION

Collaboration is inherently a relational phenomenon shaped by different sets of organizational interests. These interests, when aligned, can foster productive relationships, greatly assisting the delivery of services and nonprofit activity. However, the different sets of actors involved in a collaborative relationship are also shaped by local organizational concerns, which shape their respective interests, choices, and activities. Local organizational concerns can create competing demands, ultimately shaping the structure of collaboration between actors, which are exacerbated when actors collaborate across different sectors because local field dynamics will greatly structure the collaborative choices of actors across distinct fields.

In the context of pro bono, when a law firm decides which PILOs to collaborate with, they must take into account their relationship to their peers within their organizational field. A law firm will undoubtedly consider its relative status among its peers when deciding which organizations to partner with, in addition to the signals that those choices have among various audiences. In this regard, collaborative decisions are not a mere function of demand or need, but rather are a product of organizational positioning around status. Thus, although collaboration has been suggested as an effective model for dealing with "wicked" problems (Head and Alford 2015; Bardach 1998), it is also a site rife with inequality between actors. Not all actors are

equally likely to garner the same partnerships as others. Collaboration entails bringing together actors that have varying degrees of power in the relationship, which will ultimately shape the effectiveness and form of the partnership (Hardy and Phillips 1998).

It is here where we depart from much of the normative policy and management literature on collaboration. We are less concerned on whether collaboration is an effective model for solving policy problems, but rather on the social dynamics shaping why collaboration takes the form it does and the resulting inequality that collaboration generates. A functional view of collaboration might suggest that firms choose to partner with PILOs that are most in need for resources or whose missions provide the most value for society. Accordingly, most firms would work with similar sets of nonprofit partners or areas that are most in need, generating a highly homogenous interorganizational field of collaboration. However, this is often not the case. Firms choose which nonprofits to partner with for a variety of reasons, not always functional or rational, leading to a highly heterogeneous field (Boutcher 2013).

Although collaboration might appear highly heterogeneous, it is not a completely random process. Firms and nonprofits choose which partnerships to engage in an effort to bolster their positions within their respective fields, as well as to facilitate effective outcomes. In this paper, we focus on the role that organizational status plays in shaping collaboration. Drawing from theories of status and conformity, we find that a law firm's relative position within its field greatly influences the types of collaboration it engages. Specifically, our analyses show that firms that co-occupy similar status positions within their organizational field has a strong effect on conformity, but where firms are located in the status hierarchy of their field influences the level of conformity with other firms.

Our main finding is that law firms that co-occupy the highest status positions within the field are the most conforming in their pro bono relationships. These findings are true above and beyond key controls like organizational size and revenue (class). The findings also remain consistent to alternative specifications of the dependent variable that takes into account degree-related effects based on the specific number of ties exhibited by firms in a given dyad. These results, therefore, support our status-signaling hypothesis where we argue that high-status actors will be most likely to build collaborative ties that mimic other high-status firms. Why is this the case? Drawing from signaling theory, high status firms may use their collaborative ties to PILOs as an imperfect, but symbolic signal for firm quality. Moreover, high-status firms may mimic the pro bono collaborative ties of their high-status peers as a means to reinforce their position within the field. Furthermore, high-status actors may be more "free" to select a wide range of relationships to nonprofits without taking a hit to their status. Actors farther down the status hierarchy may be less discerning in their ties, or lack access to particular partnerships. This may be why we find that middle-status firms are the least similar to each other. It is possible that these firms are the most heterogeneous in their ability to secure relationships to nonprofits. Some middle-status firms may have access to the same organizations as high-status firms while others may lack access, leading this group to be diverse in their collaborations relative to each other. In other words, middle-status firms may have more status uncertainty, leading to heterogeneous collaborations among each other. Why are low-status firms more similar than middle-status firms? Lower-status firms may be the most constrained in whom they can partner with. This group may lack access to many of the nonprofits that higher-status firms collaborate with.

Although we do not include a direct measure of status for the PILOs in our dataset, we believe that the structure of collaboration documented here is a result of status hierarchies that

also exist across the nonprofit sector. For instance, high-status PILOs may be able to secure highly sought after ties with firms, whereas others may struggle to get whatever they can. This relates to why lower-status firms are more similar than middle-status firms. They can only access nonprofits of a particular status, leading to more conformity among each other. Unfortunately, we cannot test this explanation in the current study, but it is plausible that the structure of collaboration uncovered here on the firm side, may be a function of a mutual status exchange network, where status on both sides of the exchange shapes the underlying structure. Future research could shed light on whether this is the case.

In addition to our contribution to scholarship on status and conformity, our paper also has implications for scholarship on networks and interorganizational exchange. First, this paper makes a unique contribution to the study of the emergence of collaborative networks from a status-based perspective. On the one hand, the existent literature focuses on intrasectoral networks (one-mode, many-to-one) or intersectoral networks where the interactions are relatively limited (two-mode, many-to-one). The present study, on the other hand, analyses complex intersectoral collaborative networks (two-mode, many-to-many). This is critical since these networks are highly prevalent from an empirical point view (Saavedra et al. 2009). In this context, we make a second contribution to the literature on networks and interorganizational exchange. We provide consistent evidence of status-signaling dynamics in which status homophily, especially among high-status law firms, helps explain structural inequalities in the provision of legal pro bono assistance in contemporary America. A key scope condition of this finding is based on the fact that our theory is motivated by the assumption that public rankings carry relevant status signals that help coordinate actors' actions, including their collaborative efforts. Importantly, however, we argue that public rankings are not only relevant for actors

within a specific industry or sector. On the contrary, we argue that status signals in general, and public rankings in particular, can affect actors' partner selection across sectors. In this regard, an empirical test of how and why public rankings are observed is beyond the scope of this paper.

This paper also has important implications for the delivery of legal services and the "access to justice gap." Large law firms have become an important source of pro bono assistance to PILOs in an era of increasing resource scarcity. This is unlikely to go away as states and local communities continue to face an uncertain economic future. At the same time, increasing economic uncertainty may also lead to increased legal needs. Most likely, this will lead PILOs to seek out even more collaborative relationships with firms, though not necessarily of their own choosing or level of need. Although large firms have collectively mobilized millions of pro bono hours to assist a large number of PILOs, our findings raises important concerns with this model of legal assistance. Not all PILOs can generate the same number of collaborative ties with elite law firms. This generates a cumulative-advantage dynamic in which a reduced set of high-status law firms gets to collaborate with the same PILOs. This selected number of PILOs, in turn, can secure a significant amount of hours of free labor since high-status firms deliver, on average, substantially more hours of pro bono work than middle- and low-status firms. These patterns are the basis of a highly unequal playing field in which a reduced number of PILOs are clearly favored over many other of their peer organizations. Importantly, this may affect the types of substantive legal issues and social groups that get assistance. To the extent that the current structure of collaboration generates inequality, then continuing this model without reflection and accountability may only lead to increased inequality and, ironically, increase the "access to justice" gap in perverse ways.

Finally, this paper has some limitations. First, since we employ cross-sectional data, a causal test of the processes described in this paper would need to rely on longitudinal network data. This limitation is particularly salient due to the lack of sufficiently developed methodological tools. For instance, Exponential Random Graph models and Latent Space models currently lack the ability to incorporate weighted longitudinal networks. It should be noted, however, that a recent paper uses the Stochastic Actor Based (SAB) model of Snijders et al. (2010) to study two-mode collaborative networks over time (Simpson 2016). Second, the present paper is also limited in its analysis of the diversity and complexity of both pro bono organizations and law firms. Even though we control for the number of practice areas each law firm has and we also conducted sensitivity analyses based on the two main pro bono (sub)networks (i.e. cause-oriented and legal assistance networks), future work should scrutinize the diversity and complexity of the organizations under analysis. It is possible, for example, that status-signaling dynamics are different depending on the organizational aims of pro bono organizations. Finally, our findings are limited to the United States. Not all countries have a *pro bono publico* norm and not all countries have well-established public rankings to classify corporate law firms. Empirical analysis of contexts in which these conditions are not met would certainly be beyond the scope conditions of the theory developed in this paper.

Taken together, our results demonstrate that status signals can be a cross-field organizing principle. We found that systematic patterns in terms of network isomorphism, and more precisely, in the similarity of intersectoral collaborative partnerships, can be traced to the relative status of the organizations under analysis. Indeed, our findings consistently show that status beliefs in the form of public law firm rankings are predictive of the partnerships of these firms with an ample variety of PILOs. The substantive impact of these findings is that access to pro

bono legal assistance, a critical resource for public interest organizations, is partially determined by status dynamics *outside* the sector of public interest organizations (i.e. PILOs) *per se*. More generally, this implies that trying to understand the emergence of networks of collaboration among organizations necessarily means paying close attention to intersectoral status-based dynamics. Focusing only on intrasectoral status dynamics – a ubiquitous practice in the literature – necessarily means misrecognizing the full breadth of status as an organizing force behind collaboration.

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Figure 1. Archetypical Interorganizational Networks

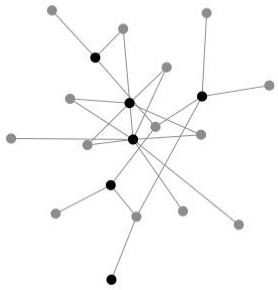
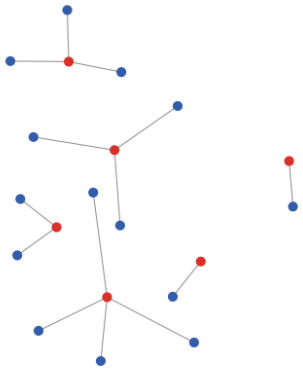
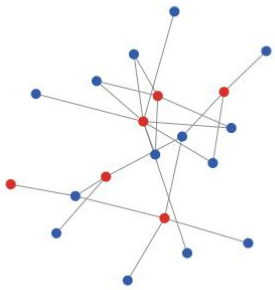
One-Mode Many-to-One	Two-Mode Many-to-One	Two-Mode Many-to-May
		
Firms that adopted (black nodes) and did not adopt (gray nodes) an innovation.	Client firms (blue nodes) tied to auditors (red nodes)	Nonprofits (blue nodes) tied to law firms (red nodes)

Figure 2. Two-Mode Network Visualization of Law Firms (purple) and Pro Bono Client Organizations (red).

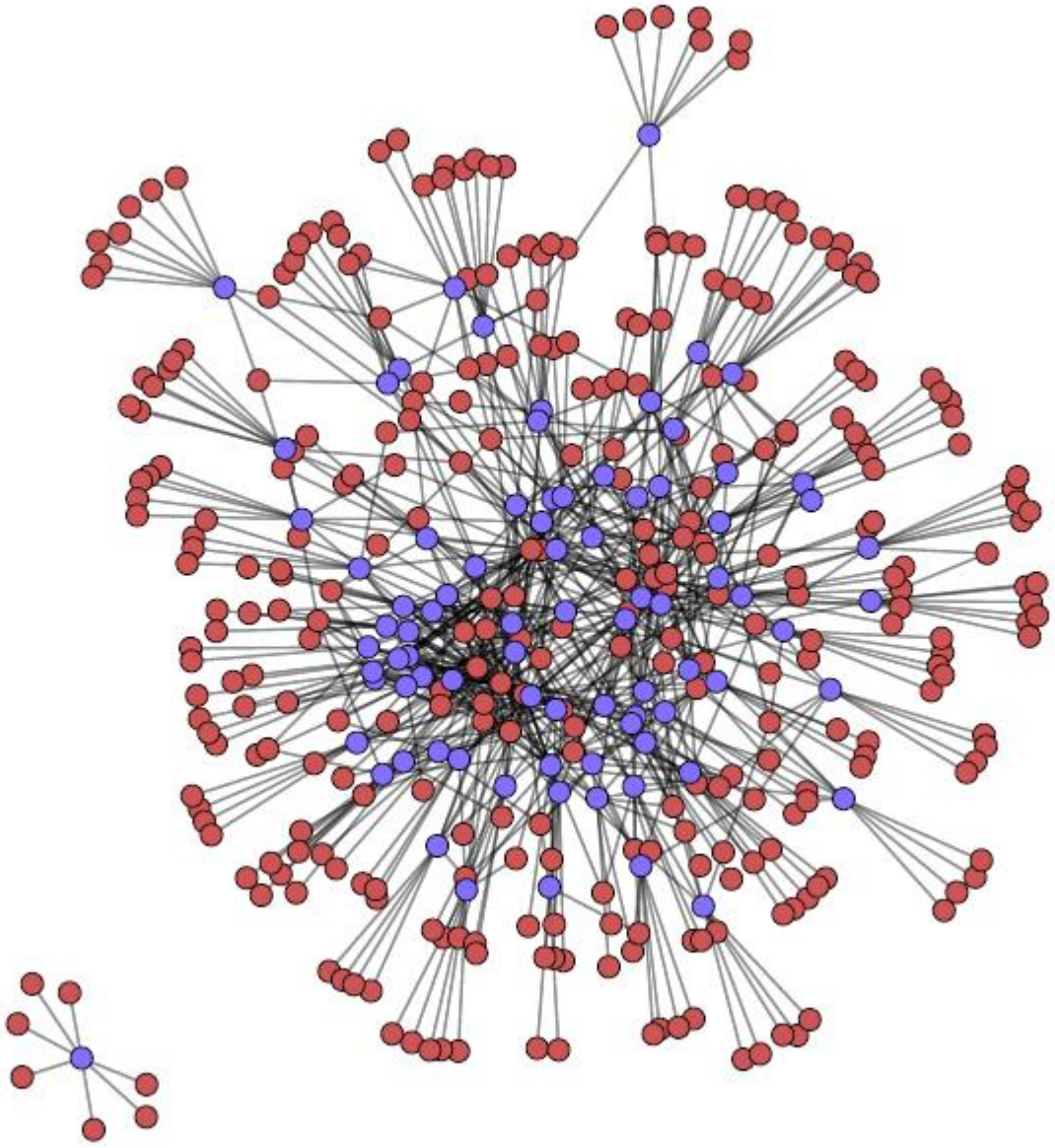


Figure 3. Network Visualization of Law Firms (purple) and Pro Bono Client Organizations (red) by Client Category

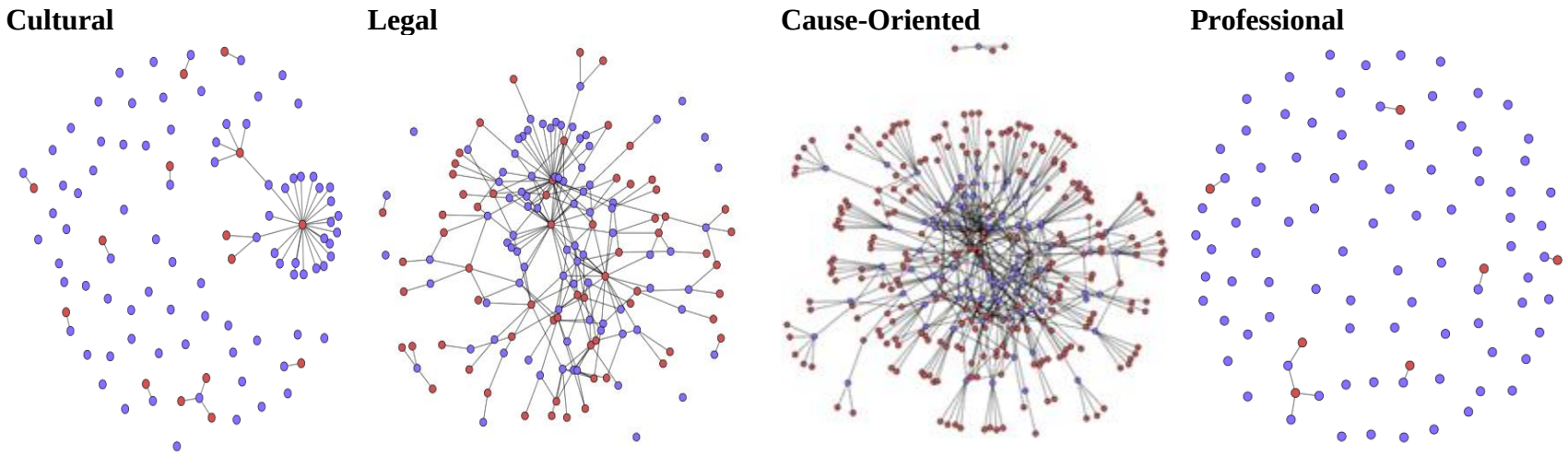


Figure 4. Number of Connections of Pro Bono Client Organizations to Law Firms

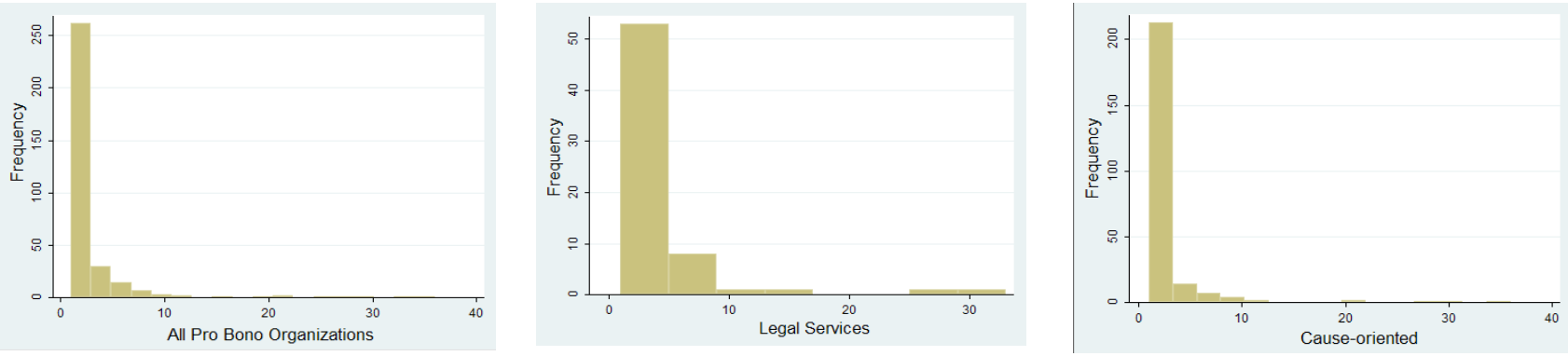


Table 1. Dyad-Level and Firm-Level Descriptive Statistics

Dyads				Firms		
	Mean/Percent	**SD**			**Mean/Percent**	**SD**
Jaccard index	42.37	(20.17)				
Status				Status		
High	6.57%			High	25.0% (21)	
Middle	24.70%			Middle	50.0% (42)	
Low	6.02%			High	25.0% (21)	
One status difference	50.06%			*Total*	100.0% (84)	
Two status difference	12.65%					
Pro bono hours difference	25.22	(20.94)		Avg. pro bono hours per lawyer	54.82	(23.48)
Revenue difference (ln)	19.16	(1.26)		Revenue (ln)	19.91	(0.60)
Size difference	456.63	(461.11)		Size	702.01	(461.23)
Age difference	48.93	(35.70)		Age	103.07	(42.39)
Gender difference	5.57	(4.18)		Percent female	36.54	(4.93)
Race difference	4.34	(3.55)		Percent minority	13.79	(3.94)
Differen. in number of practice areas	9.91	(8.41)		Number of practice areas	15.84	(9.19)
Headquarter location				Headquarter location		
Different cities	88.38%			Not in New York City	70.93%	
Same cities	3.70%			New York City	28.57%	
New York City	7.92%					

Table 2. Network-Level Descriptive Statistics

	Statistic	SD
Number of nodes	84	
Number of ties	2,103	
Number of isolates	1	
Graph density	0.60	
Mean geodesic distance*	1.37	
Maximum geodesic distance*	3	
Mean degree	50.07	(16.69)
Normalized degree centralization	0.27	

*Isolate (Baker & Daniels,) is excluded

Table 3. Latent Space Models and Double Semi-Partialing QAP Regression for Dyadic Similarity (Isomorphism) in Pro Bono Ties

	Status Only LSM Model (1)	Controls Only LSM Model (2)	Unrestricted LSM Model (3)	Unrestricted QAP Model (4)
Status (ref = high)				
Middle	-6.471 ***		-4.982 ***	-19.615 ***
	[-7.916 , -5.005]		[-6.318 , -3.647]	
Low	-3.506 ***		-1.540 †	-13.834 *
	[-5.140 , -1.902]		[-3.157 , 0.114]	
One status difference	-2.986 ***		-2.836 ***	-14.530 ***
	[-2.986 , -4.178]		[-3.951 , -1.719]	
Two status difference	-0.848		-1.201 †	-6.494 *
	[-2.087 , 0.399]		[-2.397 , 0.002]	
Controls				
Pro bono hours difference		0.019 ***	0.013 *	-0.051
		[0.006 , 0.031]	[0.001 , 0.025]	
Revenue difference (ln)		1.058 **	1.079 ***	0.836
		[0.895 , 1.220]	[0.913 , 1.244]	
Size difference		-0.001 ***	-0.002 ***	-0.009 *
		[-0.002 , -0.001]	[-0.003 , -0.001]	
Age difference		0.006 †	0.007 *	0.009
		[-0.001 , 0.013]	[0.001 , 0.014]	
Gender difference		0.011	0.050	0.127
		[-0.052 , 0.075]	[-0.012 , 0.112]	
Race difference		0.18 ***	0.129 **	-0.419
		[0.103 , 0.257]	[0.051 , 0.206]	
Diff in # of practice areas		-0.042 *	-0.051 **	0.211
		[-0.081 -0.004]	[-0.089 , -0.013]	
Headquarter (ref = diff city)				
New York City		11.895 ***	11.527 ***	23.792 ***
		[10.870 , 12.926]	[10.503 , 12.539]	
Same cities		2.025 **	2.113 **	1.033
		[0.692 , 3.371]	[0.832 , 3.421]	
Constant	35.24 ***	22.052 ***	23.497 ***	46.753 ***
	[34.652 , 35.827]	[20.517 , 23.581]	[21.896 , 25.096]	
N (dyads)	3,486	3,486	3,486	3,486
Number of permutations	--	--	--	2,000
BIC (LSM) or Adj R^2 (QAP)	24894.760	24567.130	24448.650	0.2481

† p<0.1, * p<0.05, ** p<0.01, *** p<0.001. QAP Estimation performed in sna 2.4; LSM estimation performed in latentnet 2.7.1

Table 4. Robustness Checks: Double Semi-Partialing QAP for Dyadic Similarity (Isomorphism) in Pro Bono Ties

	Cause-Oriented Model (1)	Legal Services Model (2)	Inverse Log-Weigh. Model (3)	American Lawyer Model (4)
Status (ref = high)				
Middle	-22.218 ***	-14.239 ***	-551.917 ***	-19.927 ***
Low	-11.685 *	-12.312 *	-421.663 **	-26.280 ***
One status difference	-15.654 ***	-9.935 *	-408.332 ***	-17.128 ***
Two status difference	-5.407 *	-4.999 †	-211.987 **	-20.232 ***
Controls				
Pro bono hours difference	0.024	-0.023	-1.296	-0.049 †
Revenue difference (ln)	0.566	-0.374	23.944 †	2.111
Size difference	-0.008 **	-0.003	-0.199 **	-0.005 **
Age difference	0.011	0.042 †	0.369	0.005
Gender difference	0.300†	-0.227	0.851	0.009
Race difference	-0.359	0.001	-9.826†	-0.005
Diff in # of practice areas	-0.199	-0.018	-5.060	-0.118†
Headquarter (ref = diff city)				
New York City	24.519 ***	39.277 ***	455.223 ***	30.006***
Same cities	0.66	2.671	29.296	8.866
Constant	43.130 ***	40.200 ***	1046.464	7.588***
N (dyads)	3,486	3,486	3,486	9,316
Number of permutations	2,000	2,000	2,000	2,000
Adjusted R^2	0.208	0.211	0.214	0.249

† p<0.1, * p<0.05, ** p<0.01, *** p<0.001. QAP Estimation performed in UCINET 6.137

Appendix A. QAP Regressions

Using the notation of Cranmer et al. (2017), a linear model for square matrices like $\mathbf{J}_{f \times f}$ can be said to take the following general form:

$$N = \beta X + \Upsilon Z + E \quad \text{eq. (4),}$$

Where **N**, **X**, **Z**, and **E** are all n x n matrices (n is the number of nodes –e.g. firms– in the network), **X** and **Z** are any two different predictors, **N** is the outcome network, **E** is the error term, and β and ϒ are coefficients to be estimated. In this paper, statistical tests of the linear coefficients in equation 4 were based on the approach known as Double Semi-Partialling for QAP regressions (Dekker, Krackhardt and Snijders 2007). The QAP hypothesis test using the Double Semi-Partialling procedure has been shown to be robust to network autocorrelated data, even in the presence of multicollinearity between covariates like β and ϒ in eq. 4 (Dekker et al. 2007).

In general terms, QAP is a nonparametric, permutation-based hypothesis test useful to analyze the statistical significance of coefficients from the linear regression model since β and ϒ are typically biased because the observations (dyads) within **N** are not independent of each other (Krackhardt 1987; Krackhardt 1988; Dekker et al. 2007; Cranmer et al. 2017). QAP is known to be superior to traditional multiple linear regressions for testing statistical associations in the context of dyadic data since this type of data typically exhibits network autocorrelation (Krackhardt 1988). Network autocorrelation occurs when observations – like the law firm dyads analyzed in this article –, and their corresponding error structure, are not independent of one another (Krackhardt 1987). QAP addresses network interdependencies by permuting the order of row and columns in the outcome network simultaneously in the same way, which effectively

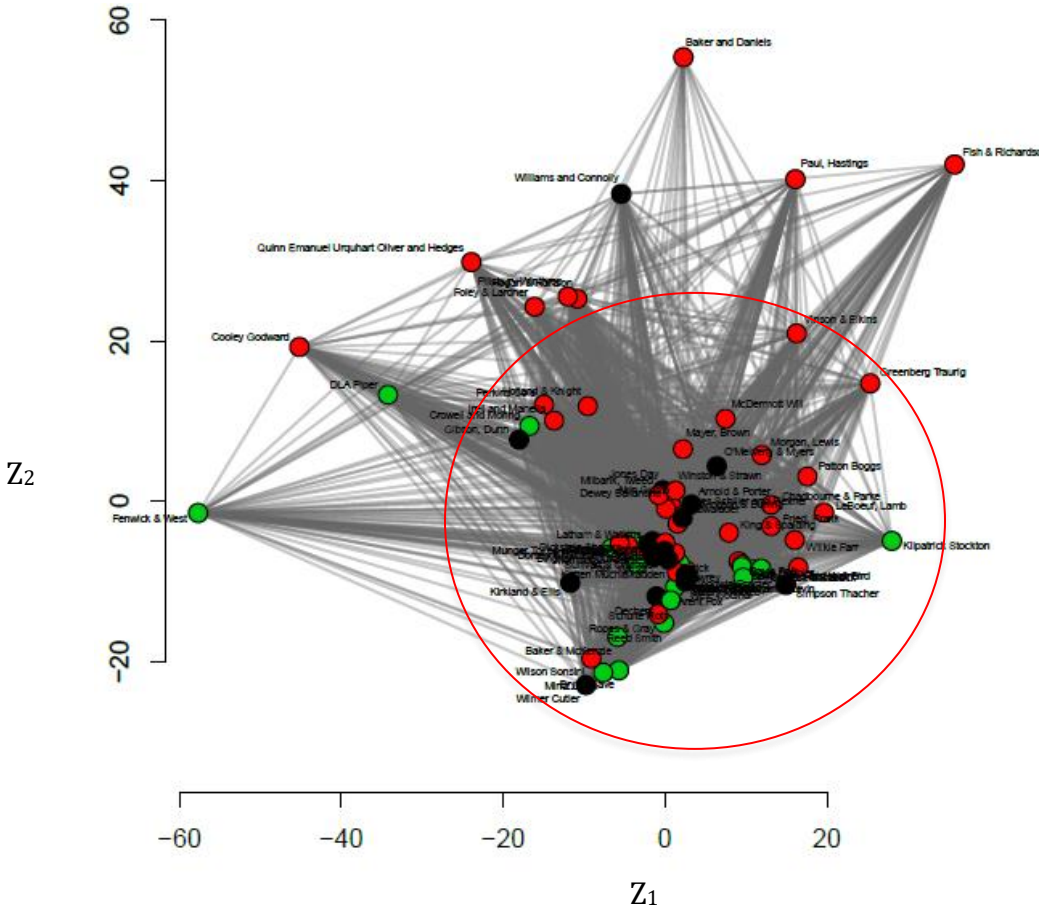
keeps intact the structure of the outcome network matrix **N** under every single permutation (Cranmer et al. 2017).[13]

More specifically, under the standard null hypothesis of no association between **N** and **X**, in a QAP test each new observed association derived from randomly permuting **N** (e.g. the new β that describes the association between **N** with **X** after re-estimating equation 4), is assumed to be obtained by chance from the same underlying distribution to which the original association (e.g. the original β that described the association between the non-permuted **N** and **X**) belongs. QAP thus effectively derives an empirical nonparametric distribution of β in a multiple regression context. Following exemplary work found in the specialized literature (Heaney 2014), all QAP results reported in this paper are based on 2,000 permutations of the original outcome network **N**.

[13] QAP assumes that the covariates are correctly specified and that there is no interaction between network and covariate effects (e.g. reciprocity is evenly distributed, not clustered in specific regions of the data space).

Appendix B. Latent Space MDS

Figure B.1. Latent Space Model: Euclidean Distance Model Mapped in 2 dimensions (Black = High Status Firm; Red = Middle Status Firm, Green = Low Status Firm).



Firms were color-coded based on their status (black = high status, red = middle status, green = low status). The plot does suggests a fair degree of clustering, especially of high-status dyads. It is important to remember that middle status nodes (red nodes) comprise the largest category in terms of size (see descriptive statistics in Table 1), which helps explain why these nodes seem to be more spread out across the 2-dimmensional space.