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Normative Influences on Network Structure in the Evolution of the Children's Rights NGO Network, 1977-2004

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Abstract

This study examines the impact of legitimacy on the dynamics of interorganizational networks within the nongovernmental organizations' children's rights community. The 27-year period of analysis included a critical community event: the ratification of the United Nations Convention on the Rights of the Child (UNCRC). Building on theories of organizational evolution, hypotheses proposed that (1) ratification of the UNCRC served to codify and more broadly communicate the legitimate norms of the community, and (2) dissemination of normative information made it easier (a) for less experienced organizations to form and maintain partnerships, and (b) for organizations to form partnerships without reference to shared third-party contacts or dominant organizations. Data analysis via a longitudinal network model supported the hypotheses. Further investigation via an event history analysis suggested that these effects were largely confined to links among organizations in the children's rights community and not to links made by these organizations to more general others.

Keywords

network evolution, legitimacy, codification, NGO communities, children's rights

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Undertaking complex, uncertain, and long-term tasks is typical for nongovernmental organizations (NGOs), which represent a rapidly growing segment of society (Castells, 1998; Sikkink & Smith, 2002). NGOs aim to create social change, address social and political inequities, and/or provide services not otherwise available through government or the private sector. The outcomes of these activities tend to be difficult to predict, making traditional cost/benefit calculations impossible or irrelevant (Bimber, Flanagin, & Stohl, 2005; Newman, 2005). In many cases NGOs work toward shared goals that can only be enacted through the collective participation of multiple organizations (Baldassarri & Diani, 2007; Ebrahim, 2009; Shumate, Fulk, & Monge, 2005). Furthermore, with a dramatic trend toward networking among NGOs in recent years (Sikkink & Smith, 2002), it has become difficult for NGOs to assess their actions strictly in terms of the likely impact on their individual long-term aims.

Thus NGOs face the challenge of acquiring resources and collaborators in an environment where outcomes are difficult to predict or observe. In such circumstances, organizations can rely on *logics of appropriateness* (March & Olsen, 1989, 1998; March & Simon, 1993). Organizations consider whether their activities conform to a set of a priori criteria established within an organizational field (DiMaggio & Powell, 1983; Fligstein & McAdam, 2011). These criteria have primarily been understood as stemming from *institutional logics* (Fligstein & McAdam, 2011; Friedland & Alford, 1991; Thornton & Ocasio, 1999, 2008), defined as "the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality" (Thornton & Ocasio, 1999, p. 804). Institutional logics can form a basis of shared understanding on which organizations can build common ideas about how to act in service of their cause (Benford & Snow, 2000).

The concept of institutional logics has been credited with furthering the symbolic and cultural understanding of NGOs and social movement organizations (SMOs; Diani & McAdam, 2003; Thornton & Ocasio, 2008). Yet the concept has been less frequently applied to specific, empirical predictions about how NGO communities evolve. In particular, despite the importance of interorganizational networks in the emergence and success of social movements and NGO communities (Atouba & Shumate, 2010; Baldassarri & Diani, 2007; Bryant & Monge, 2008; Shumate et al., 2005), research has not proposed a specific connection between logics and the formation of collaborative ties in NGO networks.

This article proposes one such connection through the application of two specific aspects of institutional logics: *legitimacy* (Carroll & Hannan, 2000; Pfeffer & Salancik, 1978) and the consistent application of legitimacy judgments in the form of *norms* (DiMaggio & Powell, 1983; Friedkin, 2001). Legitimacy denotes the acceptability or appropriateness of an organization's activities in the judgment of a larger community (Pfeffer & Salancik, 1978). While the broader concept of institutional logics extends to the cognitive and symbolic processes by which NGOs arrive at decisions, a focus on the legitimacy aspect brings attention to a question that bears most directly on the development of interorganizational networks: How do other members of the community judge an organization and will this judgment lead to an invitation to or withdrawal of collaboration? Although

legitimate actions may or may not result in successful outcomes (DiMaggio & Powell, 1983; Meyer & Rowan, 1977), organizations that are legitimated by their community are more likely to receive excess benefits when resources are in abundance and less likely to fail when resources are scarce (Aldrich, 1999; Baum & Oliver, 1991). Thus organizations that are judged to behave legitimately have an advantage in attracting and maintaining interorganizational ties, and organizations that can accurately anticipate these judgments will have a systematic advantage in doing so.

Anticipating the judgments of other organizations can be challenging for NGOs because it is difficult to calculate the outcomes of complex social actions aimed at large-scale social change. Traditional, for-profit organizations often can achieve legitimacy by using reliable techniques to produce outputs that meet specific input criteria of other organizations (Hannan & Freeman, 1984). NGOs are accountable to a broad range of goals and standards elicited by multiple stakeholders (Anheier & Hawkes, 2009). In particular, organizational actions that involve communication, such as the articulation of frames or specific messages, do not conform well to the input-output model of traditional organizational exchange (Bimber et al., 2005). For example, a frame that advantages a protest effort may be difficult to anticipate prior to the initiation of the protest itself (Osa, 2003). When NGOs design messages or release statements to the public, they do so partially blind (i.e., without complete information about how their statements will be interpreted in the context of new events or actions that other NGOs may take; Aldrich, 1999). Thus NGOs may find it difficult to develop processes or technologies that assure the production of usefully framed messages.

Norms, a second facet of institutional logics, also can be used in anticipating the judgments of others (Campbell, 1994; DiMaggio & Powell, 1983; Friedkin, 2001; Nelson & Winter, 1982). Norms compel not only actions but also the judgment of these actions (Campbell, 1994, Nelson & Winter, 1982). When adherence to a rule is considered normatively appropriate disapproval of such adherence is likely to be considered inappropriate (Centola, Willer, & Macy, 2005). It follows that when organizations have knowledge of and follow community norms they can act with confidence that they will be judged as legitimate. Organizations can anticipate that when they adhere to the rule others will feel pressure to judge these actions as appropriate. Knowledge of the rule and its normative status thus reduces the partial blindness that stems from the uncertainty of events and others' interpretative predilections.

This argument suggests that access to normative information is an important determinant of interorganizational linking patterns. Due to the complex nature of their work, most NGOs are unlikely to be able to precisely anticipate important events and the actions of all relevant stakeholders. On the other hand, those organizations with knowledge regarding how others in a community are *supposed to* react will have a substantial advantage.

A variety of research in organizational evolution and ecology models the acquisition of normative information through processes such as imitation (Haveman, 1993) and density dependence (Carroll & Hannan, 2000). Monge, Heiss, and Margolin (2008) argue that a similar approach could be applied to the evolution of interorganizational networks. This article extends this approach to form predictions regarding the linking patterns of organizations based on the manner in which their age and network position will influence their

access to normative information. We argue that organizations with better access to this information will more easily attract and maintain interorganizational linkages. Furthermore, when normative rules are *codified*, recorded in specific documents so they may be more broadly communicated (March, Schulz, & Zhou, 2000; Monge & Poole, 2008; Phillips, Lawrence, & Hardy, 2004), access to normative information becomes more equal and the advantages conferred by age and network position are reduced.

This study tests these arguments in a particular NGO community: the international movement to guarantee the rights of children. We begin by briefly describing an evolutionary theoretic approach to communities of interorganizational networks and describe the relationship of this approach to institutional logics through explication of the role of norms and legitimacy in the evolution of these communities. We then consider the role of normative information as a source of advantage in the formation and maintenance of interorganizational ties and develop a set of hypotheses regarding the impact of codification on the linking choices of organizations. Hypotheses are tested using two longitudinal methods: agent-based network modeling and event history analysis. In the discussion, we elaborate on the relationships between our results and legitimacy in networks of NGOs.

An Evolutionary Approach to Interorganizational Linkages

As a general theory of organizational change, evolutionary theory (Baum & Singh, 1994) has been applied to the analysis of individual organizations (Nelson & Winter, 1982), populations of organizations (Carroll & Hannan, 2000; Hannan & Freeman, 1977), and communities of organizations within common environments (Astley, 1985; Bryant & Monge, 2008; Shumate et al., 2005). According to evolutionary theory, differential instantiation of behaviors by or traits of individual entities can lead to the emergence of complex yet stable phenomena within higher level collections of these entities, such as populations or communities (Baum & Singh, 1994; Hawley, 1986; Kauffman, 1993). This description appears to fit many NGO communities and their relationships with their constituents (Flanagin, Stohl, & Bimber, 2006). Such communities can be activated and quickly organize responses to events as well as sustain long-term, cooperative efforts for change through dyadic relationships and without recourse to central governing bodies (Baldassarri & Diani, 2007; Osa, 2003; Provan, Fish, & Sydow, 2007).

Given the focus on community, evolutionary predictions are made at the aggregate level (Monge et al., 2008; Thagard & Findlay, 2009). Evolutionary theory predicts the relative probability that some traits or actions taken by a set of entities will have an advantage over others and thus, over time, come to proliferate in the community (Darwin, 1859). Traditionally, evolutionary analysis has focused on *selection*—the likelihood that a trait or behavior survives in an environment (Darwin, 1859). More recently, research has emphasized the role of *variation* and *retention* (Campbell, 1965; Kauffman, 1993). These processes address the likelihood that a trait or behavior is identified as a candidate prior to its implementation, either through processes of invention (variation) or through repetition of the past (retention; Kauffman, 1993).

An important principle of evolution is the differential distribution of information regarding what will be successful in the environment (Hannan & Freeman, 1989). If variation and

retention processes provided perfect information regarding the selection demands of an organization's environment, all would conform equally well to those demands and there would be few organizational failures (Hannan & Freeman, 1977). Evidence suggests that the acquisition of this information can be arduous, however (Campbell, 1960), and many organizations fail over time (Aldrich, 1999; Carroll & Hannan, 2000).

Similar dynamics apply to interorganizational linkages (Monge et al., 2008). Certain kinds of linkages may thrive in a community while others perish (Bryant & Monge, 2008; Shumate et al., 2005). While some interorganizational ties may end by design or mutual agreement, ties can also fail because one partner fails to meet the expectations of another (Ebrahim, 2009). Furthermore, many ties that may have been useful to organizations may never be attempted as variations in the first place (Lusthaus & Milton-Feasby, 2006). These organizations lose out on the mutual benefits they did not know existed between them.

Information is incomplete because the consequences of activities are not truly known until they are undertaken. This incompleteness or "partial blindness" is distinct from the intentions and processes that generate organizational activities. As Aldrich states,

> Evolutionary theory posits that a great deal of sociocultural variation is blind with respect to individuals' or organizations' needs. People's needs may well explain their reasons for generating variations as they engage in search behavior, trying to solve problems, but "need" does not explain the solution. Blind variations can be as effective as deliberate ones. Selection of variations follows from their consequences, not from the intentions of those who generated the variations (Langton, 1979). As such, evolutionary theory for social entities builds on the work of Thorndike, Skinner, Watson, and Bandura. Those theorists developed the law of effect: the recurrence, proliferation, or extinction of a particular pattern of behavior or cognition is determined by its consequences, which may well have been unforeseen or even unknown when the acts first occurred. (Aldrich, 1999, p. 23)

Although all organizations may intend, or plan, to act prudently, there is a limit to their foresight. Even thorough, deliberative processes rely on participants' having access to important baseline knowledge to reach useful conclusions (Sunstein, 2006).

Evolutionary approaches to organizations recognize two sources of selection: alignment and legitimacy (Carroll & Hannan, 2000). These sources of selection imply two kinds of information that organizations can possess to a greater or lesser degree. Organizational *alignment* refers to the extent to which an organization's technologies and outputs are consistent with material constraints imposed by the external environment (Carroll & Hannan, 2000). Consistent with institutional theories, and in contrast to more traditional theories of the firm (Hannan & Freeman, 1977), evolutionary approaches also recognize the importance of *legitimacy* in supporting the survival of organizations, their activities, and their linkages. In adverse material conditions where alignment is difficult to achieve or maintain, organizations with greater legitimacy can draw resource contributions from others to survive (Baum & Oliver, 1991). Similarly, others' withdrawal of resources in response to illegitimate actions can overwhelm the benefits drawn from strong alignment (Boyd & Richerson, 1992; Carroll &

Hannan, 2000). Thus, when knowledge of one set of criteria is limited, organizations may rely on knowledge of the other to improve their chances of survival.

Alignment is a challenge for NGOs. It can be quite difficult for NGOs to assess the alignment of their activities because it is difficult to infer the extent to which their actions will bring about the material changes they seek. For example, for organizations working to protect the rights of children, it may be difficult to assess the impact of a particular campaign or activity on concrete, material facets of children's lives such as their health or emotional well-being. This difficulty does not release these organizations from the pressure to align with their environment, but it suggests that there will be few systematic community-wide trends in doing so. The community will instead emphasize the acquisition of legitimacy, where information can be more easily obtained. Hannan and Freeman (1989) argue that the more an organization concentrates on political or symbolic outputs, such as is the case with many NGOs, the greater its concern with obtaining legitimacy to meet selection pressures. The need to obtain information about what is legitimate is thus particularly important in these communities.

The Role of Legitimacy in NGO Cooperation and Collective Action

Interorganizational linkages require organizations to coordinate activities across organizational boundaries (Eisenberg et al., 1985; Kogut & Zander, 1996). Among NGOs, coordination of joint action rarely occurs through accountability to formal hierarchies (Anheier & Hawkes, 2009). Instead, NGOs rely on shared understandings to guide actions in a coordinated manner (Benford & Snow, 2000), often within a community in which organizations interact, exchange resources, and work toward common purposes (Bryant & Monge, 2008; Shumate et al., 2005). Where these shared understandings extend to the manner in which actions are judged appropriate or inappropriate, the community can be said to share norms of legitimate behavior (March & Simon, 1993; Pfeffer & Salancik, 1978).

Such norms can play an important role in the way that organizations decide with whom to partner and which partnerships are meeting their needs. Although individual organizations develop their own standards and procedures for evaluating the quality of their links (Reuer, Zollo, & Singh, 2002), these standards evolve in concert with the norms followed by other organizations in the community (Powell, Packalen, & Whittington, 2010; Powell, White, Koput, & Owen-Smith, 2005).

With a shared set of norms to which organizations conform, actions are predictable and comprehensible (Zucker & Kreft, 1994). For organizations involved in advocacy work, such as those supporting the promotion of children's rights, this kind of a priori predictability may be particularly important. For issue advocates within a social movement, one desired collective outcome is the formation and communication of a coherent, persuasive argument on behalf of a particular view (Ebrahim, 2009). The coherence of an argument depends on reliable coordination in messages and activities among multiple advocates across time and space (Bennett & Segerberg, 2009; Osa, 2003). A movement that achieves such coherence has a better chance of moving beyond individual protests and sustaining a campaign for change (Osa, 2003).

There are three traditional factors influencing participation and outcomes of a social movement (Fligstein & McAdam, 2011; McAdam, McCarthy, & Zald, 1996): resource mobilization (McCarthy & Zald, 1977), framing processes (Snow, Rochford, Worden, & Benford, 1986), and seizure of political opportunity (Tarrow, 1998). Space constraints prevent a comprehensive review of these factors; nonetheless, the relationship between these concepts and the role of norms is substantial.

Resource mobilization refers to the ability of organizations to direct organizational capabilities, volunteers, financial resources, or other means of taking action toward the achievement of movement goals. Organizations may mobilize resources by calling on other organizations in their network or by activating individuals to contribute to an action (Baldasarri & Diani, 2007; Buechler, 1995; Diani & McAdam, 2003; Flanagin et al., 2006). Activating these resources generally relies on an established basis, such as an existing tie or communication channel (Flanagin et al., 2006). To the extent to which norms of conduct, or their codification, influences the extent or location of the ties that can be formed within a field of movement organizations, the scope and intensity of these organizations' ability to mobilize resources also will be affected.

Mobilizing resources relies not only on a structure or channel for communication but also on the presentation of a compelling *frame* that justifies and motivates action. Benford and Snow (2000) state that "collective action frames are action-oriented sets of beliefs and meanings that inspire and legitimate the activities and campaigns of social movement organizations" (p. 614). Frames provide a symbolic basis for connecting and coordinating the actions of geographically dispersed individuals under a common shared, larger purpose (Weber, Heinze, & DeSoucey, 2008). Advocates of common goals that do not share frames can view one another with suspicion, leading to conflict rather than cooperation (Brummans et al., 2008). The establishment of norms that identify and encourage the use of legitimate frames and discourage the use of illegitimate or dubious frames is thus likely to foster more sustainable cooperation.

The ability of NGOs to use frames to recruit resources into sustained action is also influenced by the political opportunity for the movement's success. Political opportunity is explained as "the dimensions of the political environment that provide incentives for collective action by affecting people's expectations for success or failure" (Osa, 2003, p. 172). Participating in a collective action that challenges the dominant order can be risky, since governments and other powerful organizations can punish participants or otherwise hinder their efforts (Tarrow, 1998). In the absence of political opportunity, extensive networks and motivated constituents may not be sufficient to sustain action. Fligstein and McAdam (2011) argue that the interorganizational pressures on governments to maintain legitimacy are an important source of political opportunity. If organizations can anticipate how others will judge a particular government's response to a movement's protest or call for change, they are better able to decide whether there is sufficient political opportunity for success.

These arguments suggest that access to information regarding legitimate norms is critical not only to the effectiveness of individual NGOs but also to the development of the links that comprise their communities and support their coordinative efforts. Organizations that are aware of a community's norms will have many advantages in attracting, forming,

and sustaining cooperative linkages. It follows that the incidence of linkages in a community can be inferred, at least in part, from models of the distribution of normative knowledge and the means of communication of that knowledge. The following sections focus on a key mechanism influencing this distribution: the codification of normative rules. First, three mechanisms of accessing normative knowledge are described: experience, network structure, and network position. After each is described, it is argued that codification works to reduce the influence of these particular mechanisms, broadening the candidates for sustainable ties in the community.

Learning norms via experience. Research suggests that age is a critical variable in predicting the sustainability of an organization or organizational activity. The importance of identifying, acquiring, and maintaining routines and procedures that reliably produce legitimate actions is reflected in the concept of *liability of newness* (Aldrich, 1999; Carroll & Hannan, 2000). The liability of newness refers to an increased likelihood that new ideas, actions, and routines will fail when compared with more established ones. In evolutionary terms, this likelihood can be explained as the probabilistic result of trial and error learning (Campbell, 1960). It is common to consult successes and failures from the past as a source of information regarding what will succeed in the future. Organisms do this through inheritance (Darwin, 1859), whereas organizations do it through routines (Hannan & Freeman, 1984; Nelson & Winter, 1982) as well as communication (Monge & Poole, 2008).

Since new organizations have experienced fewer successes and failures than their older counterparts they have had fewer chances to identify legitimate actions and eliminate illegitimate ones. Without experience as a guide, young organizations require information to narrow the set of choices for action (Shannon & Weaver, 1964). For NGOs that lack experience regarding how others behave, it may take many trials to find something that a sufficient number of other organizations will judge as appropriate (Campbell, 1965). Once discovered, however, the probability that a behavior that was legitimate in the past will be legitimate in the present is relatively higher (Tushman & Romanelli, 1985). In the case of norms, where there is a mutual expectation of appropriate recognition, an action that has been tacitly accepted can be inferred to have some legitimacy (Nelson & Winter, 1982). Thus, whereas new organizations must try activities to see how they are judged, established organizations have accumulated knowledge of successful, legitimate actions through their experiences over time. Esterling, Lazer, and Neblo (2011) find that the offices of established congress-people consult their own, narrow history in making decisions regarding their website design, whereas offices of new congress-people tend to draw at random from a broader distribution of choices observed in the field.

The liability of newness also will influence the partner choices that are sustainable. Since younger partners lack routines and procedures that consistently produce legitimate action, they face important legitimacy challenges. Many younger organizations will gain knowledge of what is legitimate through the imitation of older, more established partners. King and Havemen (2008) find that churches supporting the abolition movement in the antebellum United States appear to have played a role in helping and training new abolitionist organizations. The churches provided the new organizations with already legitimate

"templates for organizing" (King & Havemen, 2008, p. 493) through which to promote their activities, including framing strategies and protocols for organization.

Although some organizations may seek out young organizations to train in this way, the overall effect of this liability to linking with young organizations should be negative. Some organizations may actively choose to avoid linking to young organizations in the first place. Others may find it is difficult to sustain ties that have been initiated. In either case, the community of links in aggregate should reflect the greater sustainability of ties to older, more established organizations.

The impact of codification. As described in the previous section, an older organization has gained knowledge of the community's normative expectations over the years. While some of this knowledge may be readily observable in organizational procedures and routines, much of it may be tacit (Polanyi, 1966). Thus, one way that knowledge of normative rules can be made more accessible to younger organizations is through their explicit articulation (Lammers & Barbour, 2006).

The explicit articulation and storage of rules is often referred to as institutional *codification* (March et al., 2000). Codified norms are often stored as official rules and enforced by governance structures (Hawley, 1986; March et al., 2000; Provan et al., 2007). Alternatively, they are encoded in texts through which norms are diffused and maintained (Monge & Poole, 2008; Phillips et al., 2004). Normative conformity may then follow naturally from widely shared background knowledge and beliefs (Strang & Meyer, 1993). Codification is likely to have an important impact on the relationships between organizational age and interorganizational structure. Knowledge encoded in codified rules is easier to communicate (Schulz, 2001). Many new organizations can learn rules from the code rather than starting fresh with their own trial and error processes (Campbell, 1965).

These arguments suggest that once norms are explicitly communicated in a formal code the age-based learning effect of the liability of newness will be mitigated. When the knowledge of what is legitimate that older organizations have acquired is easily communicated to younger organizations, the gap between their abilities to form and maintain interorganizational linkages should narrow. At the same time, organizations need be less concerned that they will have to endure potential normative failures of the younger organization or use their own resources to "train" them. This should make younger organizations more attractive as potential partners.

In a sense, codification serves as a means of "equalizing" organizations' abilities to meet a community's expectations for legitimate behavior. Prior to codification, only organizations with experience trying, testing, and refining their routines and procedures are likely to be able to reliably function as legitimate partners. After codification, the knowledge of community norms that these organizations have gained through experience is disseminated to anyone interested in reading the code. Thus,

Hypothesis 1 (H1): After the codification of normative standards within a community, the tendency for older organizations to maintain more ties than younger organizations will be reduced.

Hypothesis 2 (H2): After the codification of normative standards within a community, the preference for partnering with older organizations will be reduced.

Sharing norms via structure. Interorganizational linkages entail risk. Organizations may fail to fulfill promises or may act in a manner that damages the reputation of their partners. Once the damage is done, however, it may be difficult for the offended organizations to assess the losses or damages, obtain compensation, or enforce a meaningful consequence at a dyadic level (Reuer et al., 2002). This difficulty is exacerbated when the interorganizational collaboration is in service of complex social goals rather than concrete technologies, products, or services (Hannan, Polos, & Carroll, 2007). An advantage of monitoring organizational performance as adherence to legitimate norms is that the resources of multiple organizations can be brought to bear on these failures (Coleman, 1988). For example, sometimes organizations may support a political position that undermines the goals of one or more of their partners (Bennett & Segerberg, 2009). It would be difficult for an aggrieved organization to assess the losses or damages caused by this action and thus difficult to specify how such a case might be treated in a dyadic contract (Reuer, et al., 2002). By contrast, if these organizations are part of a larger community, and this political position is illegitimate within that community, then the offending organization can expect a coordinated resource withdrawal or other sanction. For example, recently the Susan G. Komen for the Cure Foundation, an organization that promotes woman's health by combating breast cancer, reported that it would defund another woman's health organization, Planned Parenthood (MSNBC, 2012). This led to the resignation of some affiliates of the organization, in particular, heads of local affiliate chapters (MSNBC, 2012). In this example, transgression of community norms resulted in significant consequences; although this is not always the case, it demonstrates the importance being aware of community wide norms and values.

Network scholars have identified two simple structural signatures that can assist in retaining normative consistency: network embeddedness and network centralization. Network theory suggests that shared norms emerge and are maintained in *embedded communities* in which organizations share a dense network of ties between each other (Monge & Contractor, 2003). In embedded communities, information regarding the behaviors and transgressions of others is more easily communicated to and obtained by community members (Coleman, 1988). This leads to the ability to coordinate punishment for transgression, facilitating the maintenance of consistent behavior (Corten & Buskens, 2010; Uzzi, 1997). Boyd and Richerson (1992) show that norms can be much more easily sustained within evolving communities when punishment of transgressors is itself considered normative. Uzzi (1997) also found that embedded organizations engaged in appropriate behavior because violating the norms of their embedded network would mean the loss of all or most of their relationships, even if the violation did not directly impact a significant number of their partners.

Network embeddedness is often measured by the degree to which nodes in a network form closed transitive triangles (Monge & Contractor, 2003). Closed transitive triangles are formed when organizations that share links to other organizations also link to each another (Wasserman & Faust, 1994). Networks with many transitive triangles contain dense, embedded clusters of organizations. Preexisting links to a third organization serve as a means of

informing and stabilizing new relationships. The common third party can provide information about what the other parties find acceptable. For example, an important point of debate in the children's rights community is the use of age to define childhood (Cantwell, 1992). Different cultures have different demarcation points for childhood and adulthood, and thus the appropriate distinction is not obvious in a given locale. With a transitive tie to a common third organization, two organizations can adopt the definition used by the common partner with the assumption that this will be acceptable to their new partner.

The third party can also assist in enforcing norms when one party is tempted to deviate (Stephens, Fulk, & Monge, 2009). New contexts may emerge which cause one organization to believe that the legitimate norms of interaction ought to be renegotiated. The presence of ties to a third party reduce the chances of successful renegotiation of the rules, making organizations more likely to stick with them as they are (Nelson & Winter, 1982). While foregoing such negotiations may cause the parties to lose out on useful activities, their ability to perform legitimately remains intact. For example, political turmoil in a particular nation may lead the government to deploy young, vulnerable individuals as soldiers. An organization that relies on the government for support or resources may feel pressure to recast its definition of a child by lowering the cutoff age for adulthood so that these soldiers do not qualify, permitting the organization to accept the government's actions (Fligstein & McAdam, 2011). If this organization is in a closed triad with two other organizations where all three share a common definition, such a shift would require persuading both partners that this new definition is appropriate. This situation arises because the additional bond between the two partners of the organization would be in jeopardy if only one chose to defect (Centola et al., 2005). Furthermore, should one organization simply behave according to a different standard, the offended organization has recourse to the third party for support or potential enforcement.

Normative consistency also can be maintained through the presence of and links to dominant organizations. Dominant organizations can serve as global reference points for what is acceptable (DiMaggio & Powell, 1983). For example, organizations can infer that if they imitate the definition of "child" used by a prominent, well-known organization it is likely that this definition is acceptable to the larger community. In addition, cooperation with dominant organizations can serve to legitimate the organization in the eyes of others through the reflected reputation of the dominant organization (Flanagin, 2007). For instance, Osa (2003) showed that interorganizational networks surrounding the Polish social movement expanded to a great extent in response to a key event in 1980: the founding of a new worker's organization, Solidarity. The Solidarity trade union became a hub coordinating a variety of protests and spreading normative frames regarding anticommunism and worker's rights, resulting in the building of a society-wide coalition.

The network term for a partiality to link to a dominant node is *preferential attachment* (Barabasi & Albert, 1999). Preferential attachment refers to a mechanism by which organizations link to form a network in which there are a small number of highly central "stars." In this case, the network evolves such that the number of links an organization has already received is a positive predictor of the number it will receive.

The impact of codification. As described above, codification can make normative content more accessible to organizations. Codification also makes norms more stable (March et al.,

2000). This means that legitimate judgments should be more consistent over time and across contexts. This information and stability make it easier to form reliable partnerships even when third parties are not present as well as reduce the need to partner with dominant organizations.

First, the codified rules can serve as a common reference point, replacing the need for a third organization to serve this purpose. For example, in the case of defining the age of a child, two organizations considering a partnership can each infer that the other uses the standard, codified age. They do not need to share a third party relationship in which the definition used by the third party implies the standard used by the potential partner. As an evolutionary retention process, codification also can grant norms a special status according to which it is more difficult to modify them in the future (March et al., 2000). This resistance to change substitutes for the safeguard against ad hoc normative redefinition that third party organizations provide. When norms are codified, they are more or less locked in place. Appeals to change must be directed to governance structures rather than negotiated within individual dyads (Provan et al., 2007). Thus,

Hypothesis 3 (H3): After the codification of normative standards within a community, transitivity in the network will decrease.

Codification also should reduce pressure to obtain information and approval from highly central organizations. With codification of norms, not only can knowledge of appropriate behavior be obtained from the code, rather than through a link to a central organization, but also interpretations of the norms can be justified through the use of argument or the citation of texts that stand independently of the pronouncements of the few, dominant organizations (Phillips et al., 2004). These arguments suggest that with the codification of standards, the community need rely less directly and uniquely on dominant organizations to define and enforce the norms necessary to maintain cooperation:

Hypothesis 4 (H4): After the codification of normative standards within a community, preferential attachment in the network will decrease.

Impact of codification on links to outside organizations. As articulated above, the influence of normative codification relies on the presence of an underlying community. One concern is whether the actions facilitated or prohibited by the norms within the community bear as strongly on linkages to organizations outside of the community. On the one hand, the impact of codification may be strong if external organizations share similar views of what is legitimate, and thus younger organizations receive a similar boon in clarity and support in dealing with these external organizations. On the other hand, it is also possible that external organizations share only a limited set of norms with the community, such that codification does not provide a substantial guide for action outside of the community boundaries. Thus, while normative codification may support young organizations in their ability to form and maintain linkages to other organizations within the community, it is unclear whether it will help them form and maintain linkages to organizations outside of the community to the same degree.

It is also possible that normative codification within the community is influenced by a set of larger normative shifts within a larger community of which the focal community is a part. If this is the case, then codification may appear to be an important explanatory variable when it is in fact a covariate of a larger normative shift. Thus it is useful to consider the changes in linking patterns made by organizations to those outside of the community in which the codifying event has occurred:

Research Question 1(RQ1): After the codification of normative standards within a community, how do linkage patterns to organizations outside the community change?

Background: Children's Rights Community

Stohl and Stohl (2005) provide a detailed account of the emergence of human rights NGOs. NGOs have played a central role in the human rights community connecting nation states as well as intergovernmental organizations (IGOs). Furthermore, several recent studies have emphasized the role of networks in the communities of NGOs, government organizations (GOs), and IGOs dedicated to world development (e.g., Atouba & Shumate, 2010; Lee & Monge, 2011). These studies have emphasized NGOs as important collaboration partners in the achievement of collective goals and the survival of the organizational community as a whole.

The current study examines an NGO community that comprises a specific human rights issue, children's rights. The children's rights NGO community coalesced around advocacy for the ratification of the UN Convention on the Rights of the Child (UNCRC). Advocacy on behalf of ratification began in 1978 and continued in earnest until the ratification of the UNCRC in 1989 (Cantwell, 1992). The articles of the convention define "a child" and outline a core set of principles in respect to children: "non-discrimination; devotion to the best interests of the child; the right to life, survival and development; and respect for the views of the child" (United Nations Children's Fund [UNICEF], 2011). The articles also spell out principles through which international organizations, such as UNICEF, and national governments should work together.

As evident from its content the role of the UNCRC is to set normative standards. The convention states and defines a set of standards for the recognition and promotion of children's rights; these standards are legally binding for the governments that ratified the convention (193 countries as of April 2011; United Nations Treaty Collection, 2011) Thus the convention creates an immediate political opportunity for organizations that can claim to advocate or provide service consistent with these standards and a substantial threat to legitimacy and survival for those that cannot.

NGO networks played a crucial role in the development of the conception of children's rights (Edmonds & Fernekes, 1996). The period from 1979, when drafting began, to 1989, when the convention was ratified, was a period of intense collaboration among the children's rights NGOs. According to Cantwell (1992), during this period NGOs whose representatives attended the negotiations over the standards made explicit and substantial efforts to work with one another to form a unified voice through which to lobby the governments in the convention. These organizations worked to identify and negotiate the impending

normative commitment to the code. After ratification, Cantwell (1992) reported that organizations' foci shifted to providing services and advocating for children as supported by the rules. Hänggli and Kriesi (2010) found evidence that UNCRC operated as predicted by the theory of normative codification outlined above. In a study of organizational campaigns for and against immigration legislation in Switzerland, they found that the UNCRC stood out in drawing the attention of organizations to a common frame for justifying their positions.

Method

Data Collection

Interorganizational network data were collected from the Yearbook of International Organizations (YIO) published by the Union of International Associations (UIA). As Shumate et al. (2005, p. 493) note, "the *YIO* provides the most extensive coverage of nonprofit organizations by any source, public or private." The goal was to identify organizations that were members of the children's rights community and to trace their linking behavior over time. This data source has been employed in other studies on NGO networks (Atouba & Shumate, 2010; Keck & Sikkink, 1998; Smith, 1996, 1997). The YIO provides data on approximately 40,000 NGOs that have some sort of international presence. Data for each yearbook were derived from monitoring of web documents, governments publications, and NGO publications by UIA as well as a voluntary survey sent to organizations by UIA (Union of International Associations, 2011). Keck and Sikkink (1998) reported that the YIO published information about most organizations relatively soon (within a few years) after their founding. Data collection for this study began with the year 1977 and continued through 2004 so as to reflect organizational linking prior to, during, and after the major developmental period of the children's rights community. A typical entry in the Yearbook includes attributes of the organization such as its name, address, when it was founded, and its aims, as well as the links it maintains with other organizations. Though some entries provide details regarding the nature of a relationship between two organizations (e.g., financial, "collaborates with," or "links with"), most entries only contain the linking partners without the detail of the nature of the link. This is largely because the linking data rely predominantly on organizations' voluntary response to the UIA survey. Thus any relationship to another organization reported in the Yearbook entry for a particular organization constituted a link.

The selection of child rights NGOs and their surrounding community was performed in three steps as described in Gould (2009). First, an initial seed group of international NGOs active in the area of child rights was identified based on the 2004/2005 Yearbook. All organizations containing the terms "child" and "rights" in the organization name, description, or activity fields were identified. This procedure yielded 20 organizations. Yearbooks were accessible for 1977, 1981, 1983/1984, and every other year from 1984 to 2004 (e.g., 1984/1985, 1986/1987, . . ., 2004/2005). To avoid double-counting links from year 1984 and to obtain consistent, evenly spaced data points starting from the earliest possible year, linkage data were coded from the following yearbook editions: 1977, 1981, and from 1984/1985

throughout 2004/2005. Therefore, the Yearbook's report of interorganizational linkages of the initial 20 organizations was coded from a total of 13 observation points. Data were then collected utilizing a snowball sample as the basis for selecting organizations. When using a snowball method, researchers utilize an initial sample as a starting point and crawl outwards a set number of steps to collect a complete data set (Erickson, 1979). In this case, organizations receiving nomination as a partner by at least two seed organizations in both the 1990/1991 and 2004/2005 Yearbooks were selected and added. By using this criterion, the sample included children's rights NGOs as well as members of other organizational populations that are linked to children's rights NGOs. For an organization to be included in the expanded sample, it had to have partnered with at least two of the seed organizations. This step yielded 18 organizations, bringing the total pool at this stage to 38. The links of these 38 organizations were then examined using the 1998/1999 and 2004/2005 Yearbooks. Again, those organizations that partnered with more than one of the 38 organizations were then included; this yielded an additional 81 NGOs. The above three steps resulted in the final community of 119 organizations that was examined in the present study.

The children's rights community has grown substantially over the last 30 years. Because of the multitude of issues that children's rights encompasses, there is no official list of organizations that categorically states which organizations are members of this community. One rough indicator of the community's size is given by the number of organizations that are members in the Children's Rights Information Network (CRIN). CRIN maintains a list of 1752 NGOs. Of our 119 organizations, 42 participate in CRIN. Since we only considered NGOs that are internationally oriented, the sample is a relatively small subset of the overall children's rights community.

Identifying an appropriate sample in studies of interorganizational networks involves some judgment as the scope of potential data is enormous. The standard solution is to find a consistent set of criteria for inclusion in the network and then to tailor knowledge claims to appropriately reflect the logic of these criteria. For example, Baldassarri and Diani (2007) constructed a network of civic associations using a subset of organizations that excluded service organizations. Powell et al. (2005) used a technique very similar to that employed in this study in gathering data on interorganizational linkages in the biotechnology industry. As they argue, the advantage of this approach is in the consistency in the sample between time periods.

> The advantages of 12 years of fine-grained data reside in capturing the length of relationships, the dissolution of ties to particular partners and the forging of ties to others, as well as the deepening of some ties. Issues of scale are assumed to be constant while we examine duration of ties and the extent to which the parties involved in a relationship share other partners in common at specific points in time. (Powell et al., 2005, p. 1150)

This consistency permits the justification of knowledge claims regarding changes in linking logics and in the relative features of its structure in comparison to itself rather than an absolute picture of the network structure.

Measures

Interorganizational links represent partnerships as listed by the 119 organizations in the UIA Yearbooks. Partnerships were coded as directed ties as many ties were not reciprocally reported. Partnerships were coded into two types based on the organization to which they referred: "intracommunity" links (Hypotheses 1-4) and "general" links (RQ1). An "intracommunity" link refers to any partnership reported by an organization to another member of the 119 organizations in the identified community. A "general" link refers to any partnership reported by an organization in a given year, regardless of whether the partner was also a member of the children's rights community. Because the majority of organizations that receive general links are not in the community, their out-degree ties are not captured. Thus general links do not represent a complete network and were not treated as such. Intracommunity links represent ties reported between organizations that qualified, based on our criteria above, as participants in the children's rights community. Thus these intracommunity links represent a full network of the defined subpopulation. Information on organizational attributes of the 119 organizations was coded from the Yearbook as well. The current study used the organization's founding year to calculate the organization's age at each observation period.

Analyses

Intracommunity Links. Hypotheses 1 to 4 were tested using the complete, intracommunity network among 119 organizations for each observation period. The network was analyzed using the SIENA computer program (Snijders, Steglich, Schweinberger, & Huisman, 2009; Snijders, van de Bunt, & Steglich, 2010). SIENA uses agent-based modeling to estimate the objective function used by nodes in the network to choose their links (Snijders et al., 2009, 2010). The objective function represents the kinds of ties that nodes value, such as ties to older organizations, transitive ties, or ties to popular organizations (those that already have many ties). The program uses Markov Chain Monte Carlo (MCMC) simulation to produce a distribution of networks that would likely form if nodes used a particular objective function in choosing their ties. The structure of the networks formed by the simulation is then compared to the actual network on each preferred (or disfavored) network feature. If a substantial portion of the simulated networks differs from the observed network, the objective function is updated in the direction that is likely to improve the fit and the simulation repeated. For example, if nodes were assumed to prefer transitive ties, but the corresponding objective function produced a simulated network with far more transitive triads than the observed network, the program would reduce this preference in the objective function in the next round of simulations.

The goal of the simulations is to obtain a "converged," well-fitting model. A model is converged when the objective function settles in a small region of the parameter space such that only small updates to the objective function are recommended and most consecutive updates show negative auto-correlation, suggesting that each adjustment is a slight overcorrection around a small set of central values (Snijders et al., 2009, 2010). A model is well fitting if the converged objective function values lead the simulated networks to closely

approximate the observed network structures. The inference that can be drawn from a converged, well-fitting model is that if nodes did use the objective function identified by the model, the observed network structure would be highly likely.

The logic of the SIENA algorithm makes some important assumptions. SIENA assumes that links between any two nodes in the network are a theoretical possibility (Snijders et al., 2009, 2010). SIENA thus requires that data comprise a complete network in which possible links between each node are observed. Since link behavior was not recorded for the thousands of alters present in the general link data set, no links were theoretically possible from these nodes and thus a SIENA analysis could not be performed on these data. Thus the SIENA analysis was only performed on the intracommunity network.

SIENA also assumes homogeneity of structuring logics across time periods included in a single model. Since it is expected that there will be a significant change in the linking logics following the passage of the UNCRC, this assumption must be tested. The Jaccard Index is a general measure of network change, and it is calculated as the number of ties retained over a period divided by the sum of the number of ties retained, the number of ties added, and the number of ties dropped during that period. Snijders et al. (2009) note that when the Jaccard Index is below .3 this indicates that the assumption of period homogeneity is violated, implying that nodal logics are likely to have shifted between periods. The estimated rate parameter for each period reflects the number of attempts that nodes used to find tie choices that fit the observed network at this point in time using the generic, time invariant objective function. If a particular observation period shows a substantially higher rate parameter, this suggests that the generic, time invariant objective function was particularly inappropriate for that period.

The intracommunity network data were arranged as a set of 119 × 119 asymmetric, binary matrices. Each matrix represented one of the 13 observation points (thus comprising 12 time periods). The networks were aligned in UCINET 6 (Borgatti, Everett, & Freeman, 2002) using the Stack function so that all organizations appear in each network. Organizations that are inactive in a given time period because the time period is prior to their founding or subsequent to their demise thus appear as isolates. These inactive organizations each received "structural zeroes" in the network rows and columns (Snijders et al., 2009) so that optimization algorithms would not consider these organizations as candidates for links in these periods.

The Jaccard Index was calculated for each time period. As predicted, the coefficient for the time window from 1988 to 1990 showed a low coefficient (.28). The remaining coefficients were greater than .3. These results suggest that 1988-1990 was a period of tumultuous, unpredictable change in the network. Thus SIENA models were run individually for the period 1977-1988 and 1990-2004. Hypotheses 1 to 4 address the impact of normative codification and thus require the comparison of network structuring parameters between two time periods: before and after the ratification of the UNCRC in 1989. After parameters were estimated for each time period, parameters were compared for overlap in their confidence intervals to determine if there was a significant increase or decrease.

As specified in the guidelines for use of SIENA (Snijders et al., 2009, 2010), the models included a control for network density through the use of the out-degree parameter. Network

density is a measure of the total number of links in a network. Many parameters that describe structural tendencies of network formation are nominally associated with network density. In particular, parameters such as transitivity or other measures of network clustering will become increasingly prominent as the network becomes denser. If every node links to every other node, all transitive triangles will be closed by definition. To parse the influence of density from the influence of other structural tendencies an out-degree parameter is estimated in the model. This parameter reflects the degree to which nodes establish links in a given period. Research suggests this general tendency for linking can vary with a variety of factors, including resource availability and environmental uncertainty, which were not measurable for each time period (Koka, Madhavan, & Prescott, 2006). Thus other parameters are estimated with the effect of this general tendency controlled.

General links. RQ1 was explored with event history analyses (Allison, 1984; Tuma, Hannan, & Groeneveld, 1979). In event history models the dependent variable is the likelihood, or hazard, of an event (in the present case, dissolution of links). Event history analysis is particularly suitable for estimating the occurrence of events because it adjusts for the right censoring problem and incorporates time-varying covariates (Allison, 1984; Monge et al., 2011). The research question was explored using discrete-time parametric models of link failure. The hazard of link failure $r_j(t)$was specified in terms of an instantaneous rate:

$$r_j(t) = \lim[p_j(t, t+\Delta_t)/\Delta_t]$$

where p_j is the discrete probability of link j experiencing failure between t and $(t + 1)$, conditional on being at risk at time t (link j still exists). These models were specified in the following form:

$$r_j(t) = \exp[\beta X_t]$$

Where X_t is a vector of time-varying covariates, and β is a vector of coefficients indicating the effect of each variable on the instantaneous rate of link failure.

Two time-varying covariates were included in the model: the age of the organization at each time period and the age of the link itself at each time period. Because link data of each organization were collected over 13 observation points from UIA Yearbooks, 12 time periods were used to generate event history data for organizational links. For example, a link that was first observed in 1990/1991 but disappeared in 1996/1997 would have five records (1990/1991-1992/1993, 1992/1993-1994/1995, 1994/1995-1996/1997). To control for period-specific effects, a dummy variable for each of the 11 periods starting from 1981 to 1984/1985 was included (the 1977-1981 period was the comparison group).

To examine the research question a dummy variable was included to represent whether a link was created before or after codification of normative standards, the passage of UNCRC in 1989. Three models were estimated, with the first one including only the control variables. Link age and organizational age at link initiation were added to Model 2,

Table 1. Parameter Estimates, Standard Errors, and Confidence Intervals for SIENA Models

		Precodification 1977-1988			Postcodification 1990-2004		
Hypothesis	Parameter	Est.	*SE*	95% CI	Est.	*SE*	95% CI
	Rate of change 1977-1981	0.72	0.16*	[0.39, 1.04]			
	Rate of change 1981-1984	0.76	0.15*	[0.45, 1.06]			
	Rate of change 1984-1986	0.56	0.11*	[0.33, 0.79]			
	Rate of change 1986-1988	2.86	0.42*	[2.02, 3.70]			
	Rate of change 1990-1992				4.20	0.37*	[3.46, 4.95]
	Rate of change 1992-1994				5.46	0.41*	[4.63, 6.28]
	Rate of change 1994-1996				3.67	0.26*	[3.15, 4.20]
	Rate of change 1996-1998				6.34	0.39*	[5.55, 7.13]
	Rate of change 1998-2000				5.96	0.41*	[5.13, 6.79]
	Rate of change 2000-2002				1.60	0.15*	[1.30, 1.90]
	Rate of change 2002-2004				1.43	0.13*	[1.16, 1.69]
	Density	–6.00	0.40*	[–6.80, –5.20]	–3.16	0.06*	[–3.29, –3.03]
H1	Age of ego	1.30	0.23*	[0.84, 1.75]	0.29	0.04*	[0.21, 0.36]
H2	Age of alter	0.25	0.14	[–0.04, 0.53]	–0.10	0.03*	[–0.17, –0.04]
H3	Transitive triplets	0.37	0.10*	[0.16, 0.57]	0.09	0.01*	[0.07, 0.10]
H4	Popularity of alter (sqrt)	0.72	0.07*	[0.58, 0.86]	0.37	0.02*	[0.33, 0.41]

Note: CI = confidence interval = Mean +/- 2 *SE*; * indicates *t* ratio, mean divided by *SE*, > 2, suggesting $p < .05$.

while the interaction between the passage of UNCRC and organizational age and the interaction between the passage of UNCRC and link age were added in Model 3.

Results

Intracommunity Links: Hypotheses 1 to 4

Results for the separate models for 1977-1988 and 1990-2004 are presented in Table 1. For each hypothesis the estimates for the relevant parameters of the separate models must be compared. For each hypothesis, the expected result is a significantly lower parameter value for the 1990-2004 model as compared with the 1977-1988 model. Statistical significance is indicated by any difference between the lower bound of one confidence interval and the upper bound of the confidence interval of the same parameter in the second model. Hypothesis 1 predicted that, after codification, the degree to which older organizations were more active or successful in establishing and maintaining links would be reduced. The coefficients for the 1977-1988 and the 1990-2004 models were 1.3 and .29, respectively, and were tested via the examination of the 95% confidence intervals for the Age of Ego parameter in both periods. Since the minimum of the interval for the 1977-1988 parameter (0.84) was greater than the maximum of the interval for the 1990-2004 parameter (0.36), Hypothesis 1 was supported.

Hypothesis 2 predicted that the preference for organizations to tie to older organizations would be reduced after normative codification. The coefficient for the Age of Alter parameter in the 1977-1988 model was 0.25 and for the 1990-2004 model was –0.10. Since the minimum of the 95% confidence interval for the 1977-1988 parameter (–0.038) was greater than the maximum of the interval for the 1990-2004 parameter (–0.039), Hypothesis 2 was supported.

Hypothesis 3 predicted that, after codification, the degree to which organizations formed transitive ties would be reduced. The coefficient for the Transitive Triplets parameter was 0.37 for the 1977-1988 model and 0.09 for the 1990-2004 model. Since the minimum of the 95% confidence interval for the 1977-1988 parameter (0.16) was greater than the maximum of the interval for the 1990-2004 parameter (0.10), Hypothesis 3 was supported.

Hypothesis 4 predicted that, after codification, the degree to which organizations linked via preferential attachment would be reduced. The coefficient for the Popularity of Alter (sqrt) parameter was 0.72 for the 1977-1988 model and 0.37 for the 1990-2004 model. Since the minimum of the 95% confidence interval for the 1977-1988 parameter (0.58) was greater than the maximum of the interval for the 1990-2004 parameter (0.41), Hypothesis 4 was also supported.

General Links: RQ1

Table 2 presents the results of the three models that were fit to the data to explore RQ1. The first model contains only the dummy variables representing period-specific effects. Due to collinearity with other period-specific dummy variables, one dummy variable (representing 1981-1984/1985) was excluded from all models. Chi-square difference tests show that Model 2 has a better fit than Model 1 (χ^2 difference = 171.04, *df* difference = 2, $p < .001$) and that Model 3 has a better fit than Model 2 (χ^2 difference = 69.73, *df* difference = 3, $p < .001$).

Most periods had a negative impact on the log of the rate of link failure, that is, failure rate was lower in these periods than that of 1977-1984/1985. However, the periods of 1990/1991-1991/1992, 1994/1995-1996/1997 and 1996/1997-1998/1999 did not have significant impact, indicating that these time periods had about the same rate of link failure as that of 1977-1984/1985.

RQ1 considers the impact of codification on the risks to link decay due to the liability of newness among links from children's rights organizations to other organizations in general, rather than simply to other members of their community. To answer this question, it is first necessary to determine if liability of newness is present. The presence of this effect is supported by the data. Link age had a significant and negative impact on the log hazard ratio of link failure ($\beta = –.09$; $p < .001$). The liability of newness also suggests that the older the organization was at the time of link initiation, the less likely the link would be to decay. The presence of this effect was also supported. Ego age at link initiation displayed negative impact on the log hazard ratio of link failure ($\beta = – .003$; $p < .001$).

Table 2. Effects of Tie Age, Ego Age, and Time Periods on Link Failure

Predictor	Model 1	Model 2	Model 3
Constant	−1.82***	−1.52***	−1.68***
1984/1985-1986/1987	−1.37**	−1.33**	−1.35**
1986/1987-1988/1989	−1.82***	−1.66***	−1.74***
1988/1989-1990/1991	−1.19***	−1.05***	−1.12***
1990/1991-1992/1993	−0.20	−0.08	−0.21
1992/1993-1994/1995	−1.12***	−0.88**	−0.98**
1994/1995-1996/1997	0.02	0.26	0.18
1996/1997-1998/1999	0.16	0.55	0.56
1998/1999-2000/2001	−1.66***	−1.18***	−1.16***
2000/2001-2002/2003	−0.94***	−0.37	0.30
2002/2003-2004/2005	−19.13	−18.37	−18.19
Link age		−0.09***	−0.05**
Ego age at link initiation		−0.003***	−0.001
UNCRC			0.42*
UNCRC X link age			−0.11***
UNCRC X ego age at link initiation			−0.002
Chi-square	1465.68***	1636.72***	1706.45***
Log likelihood	−4495.65	−4407.20	−4372.34

*$p < .05$. **$p < .01$. ***$p < .001$.

The research question considers the impact of normative codification within the community on the linking of organizations to general others. To find evidence to answer this question, two interaction terms were added to the models respectively. The interaction between the codification event, the passage of UNCRC, and link age yielded a negative and significant coefficient ($\beta = -.11$, $p < .001$) indicating that compared to links created precodification, the likelihood of tie decay was more pronounced for younger links created postcodification. The interaction between the passage of UNCRC and organizational age did not yield a significant coefficient ($\beta = -.002$, $p = .20$). Therefore, the analysis shows that normative codification within the community did not appear to impact linking behavior by children's rights organizations to those outside the community in the same manner as their intracommunity links. Whereas codification reduced liability of newness within the community, it appeared to either increase it or have no significant effect on it for general links.

Discussion

This study examined the tendencies for NGOs to form links in the children's rights community over a 27-year period. Particular attention was given to the difference in the formation

logics between periods prior to and after the ratification of the UNCRC. Although causality cannot be confirmed, the data are consistent with the interpretation that the ratification of the UNCRC had a substantial impact on the community and its linking behavior. Preliminary inspection of the addition, retention, and deletion of ties using the Jaccard Index suggests that the network changed dramatically between 1988 and 1992. The results are statistically supported by SIENA models that confirm significant differences in linking rationales between the time periods. Powell et al. (2005) liken the analysis of the evolution of a community's network to that of observing how partners are chosen at a dance hall. Within this metaphor, it is clear that somewhere between 1988 and 1992 the music in the children's rights community changed, and with this change many dancers did substantial maneuvering to find new partners.

The codification argument gained support from the findings regarding the influence of UNCRC ratification on linkage patterns within the community. As predicted, at the single organization and dyadic levels, older organizations showed an advantage in maintaining linkages. This tendency was reduced after the explicit, formal articulation of community norms through the UNCRC. Furthermore, the preference for older organizations as linkage partners decreased after the ratification of the UNCRC. These findings suggest that while the accumulation of knowledge and experience are important to the maintenance of interorganizational relationships, formal communications that make information available regarding legitimate practices and understandings can narrow the gap between older, more experienced organizations and younger organizations.

Furthermore, at the subgroup and global levels, the ratification of the UNCRC was associated with a substantial decrease in the tendency for organizations to form ties based on two prevalent network formation tendencies favoring organizations with which they are already directly or indirectly familiar—transitivity and preferential attachment. These findings suggest that something in the process or achievement of ratification permitted organizations more freedom to branch out and partner with organizations with which they were likely to be less well acquainted. In particular, it was suggested that the ratification of the UNCRC codified the norms of the community, making experimentation less risky and more appealing. It should be noted, however, that other historical events such as the fall of Berlin Wall during the same period might have also contributed to the observed change; thus the analysis only suggests the possible impact of codification and it alone is not sufficient to rule out alternative explanations. However, the fact that the age-related effects were not supported for linkages made by children's rights organizations to outside organizations suggests that if alternative events are the explanation, these events apply specifically to the children's rights community.

Limitations

This study has several limitations. First, as with any study based on archival data that record interdependent interactions between individuals, organizations, or other entities, the influence of specific variables is difficult to isolate. It is not possible to experimentally manipulate the causes of historical events, and statistical controls can only isolate the influence of measured variables. This study attempted to mitigate this weakness through

the simultaneous testing of several, interrelated hypotheses, which together form a coherent, theoretical story to be tested against the available evidence. Nonetheless, such an analysis cannot rule out alternative or more proximate causes that may prove to be more reliable explanations in other contexts. One such alternative cause is the resource disparity between young and established organizations, which may have also contributed to the "liability of newness" phenomenon. Unfortunately, gathering data on the availability of resources for NGOs focused on a broad mission and working across a wide geographic range is difficult as each individual organization is likely to draw on a different set of specific resources (Carroll & Hannan, 2000). Furthermore, since the UNCRC does not explicitly specify that resources be directed toward younger organizations, it is likely that some of the resource advantages gained by young organizations after codification stem in part from the legitimacy gains theorized in this study.

The study relied exclusively on a particular kind of data: structural and time-based variables—organizational age, link age, transitivity, and preferential attachment. This restriction provides certain advantages but also brings important limitations. The advantage of this approach is the generalizability of its findings for research in other areas for the purpose of replication and further theoretical development. These variables can be easily observed and coded in many interorganization networks. The disadvantage of this approach, however, is the limited ability to explain the mechanisms of change in more detail. For example, it is not possible to infer how organizations may have specifically used or consulted the UNCRC, or whether the observed effects apply to a specific subset of interorganizational relations, which could be identified with access to more detailed data.

In addition, although this method for link collection yielded a substantive sample of organizations, it is possible that important organizations in the children's rights community were excluded from the sample. First, the UIA Yearbook only contains entries for internationally oriented organizations. Thus some organizations that work only on a domestic basis are likely to have been excluded. Second, the criterion for inclusion as a seed organization in the study was the use of "child" and "rights." A number of children's rights organizations do not use these terms in their mission, and so the seed organizations are likely to be a subset of the full community. However, organizations that use these terms are children's rights organizations in a broader, more neutral sense than those that choose to pursue their goals through particular associations or movements. Therefore, the sample used in the study is less influenced by political and ideological choices. Third, since the selection of initial seed organizations was based on the 2004/2005 Yearbook to make the search feasible, the study might have neglected organizations not recorded in this specific edition for various reasons.

Suggestions for Further Research

The findings and limitations of this study suggest two important avenues for further research. First, future effort should be invested in exploring the evolution of the children's rights community in more detail. The findings of this study present interesting questions regarding the community's development in response to the UNCRC. In particular, was the shift from transitive and preferential attachment–based ties consciously chosen as a

response to a particular set of actions or strategies, or was it an emergent artifact of other patterns in the community? That is, is this shift truly part of a conscious shift in link-making strategy or reflective of a larger change in organizational focus? Such questions could be investigated through interviews of participants and their attitudes toward their partners and the prominent organizations in their field.

The potential influence of the UNCRC on the degree to which organizations felt free to experiment or felt the need to branch out might also be pursued through a closer study of the participants in this community. Analysis of mission statements may indicate which organizations adopted elements of the UNCRC code in their own materials and operations. According to the arguments presented in this article, the diffusion of these norms through the UNCRC should assist in the formation of partnerships among new and/or otherwise unconnected organizations. These arguments suggest that those organizations that adopted the UNCRC codes would be those with the best chance of forming these previously difficult to maintain partnerships. The code may also have influenced political opportunity for action within particular nations or regions. By establishing a set of norms through which to judge organizational activities, governments may have more easily formed consensus regarding acceptable and unacceptable requests, making it easier for organizations to anticipate when and where their actions would be supported or suppressed.

The findings of this study also suggest further means of using evolutionary theory to explore change in interorganizational networks and the communities they comprise. Audia, Freeman, and Reynolds (2006) found that interorganizational networks influenced organizational founding rates. In this study, organizational age and structural position were found to influence link formation. Both sets of findings are articulated within the evolutionary framework and rely on the same variables, and so it should be possible to develop theoretical predictions that draw on these and related work (e.g. Powell et al., 2005). For example, if normative codification helps the network extend to include younger organizations, what is the impact on the organizational founding rate? If so, are such conditions important for network growth (Koka et al., 2006)? If not, what countervailing forces or conditions tend to intervene, holding the network close to its original size?

Scholars should also consider the conditions under which organizations adjust their linking strategies based on the emergence of codified norms in the community. Along the same lines, it would be prudent to examine how this codification influences organizational achievement of goals. Furthermore, it is currently unclear whether organizations are likely to have better capacity in terms of mobilizing resources by expanding the diversity of their network partners in terms of age and structure. At the community level, it is also important to consider how the distribution of resources is affected by changes in network structure, and how such changes affect the ability of a community to act in a collective manner. Examination of these outcomes can help identify factors behind successful NGO networks and suggest implications for effective network-based strategies.

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