An Examination of Organizational Resources’ Influence on the Hyperlink and Political Networks of Organizations

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Abstract
National housing social movement organizations transformed and publically reconstructed their network structures online and offline during two different political environments (pre-housing bubble and post-housing bubble). This study investigates how this process takes place in a changing political environment. This study uses two different network types: an online hyperlink network and a network of co-participation in congressional hearings. Through a comparison of resources deployed and resulting social solidarities gathered and lost, this study found that during the United States economic recession during 2007–2010, network centrality has decreased in the hyperlink network where organizations have more agency. The majority of ties in the network of co-participation in congressional hearings were attributed to organizations of similar age and housing focus. Implications are discussed from theoretical, methodological, and practical points of view.

Keywords: hyperlink network structure, nonprofit organizations, social network analysis, congressional hearing network


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1 Introduction
The Internet has brought about a networked society of conscience constituents and increasingly networked organizations. While researchers have examined the usefulness of online networks for mobilization of conscience constituents (Grossman, 2009; Williams, 2006); technology and networks (Barley, 1990; Castells, 2000; Monge & Fulk, 1999; Park, 2003; Rice, 1994); and political networks (Knoke, 1990), research comparing the patterns of offline political interactions of organizations to their online hyperlink networks remains in its infancy. Social movement organizations (SMOs)—i.e., groups of institutions working toward the same goals under the larger umbrella of a social movement—develop natural networks. These networks are often subject to transformation as political events transpire. While networks are necessary for mobilization of SMOs, connections among organizations are not always positive, especially as structural conditions, such as environmental changes increase the potential for competition. For example, limited funding at the national level could deter “Organization A” from increasing visibility for “Organization B,” which has similar goals and numerous accomplishments, if both organizations rely on the same grant dollars to maintain their operating budget. This study examines HSMOs hyperlink network structure and co-participation in the congressional hearings during two different time periods before and after the housing bubble burst.

The inter-organizational networks created through interactions in the political and economic environment form a context within which actors act strategically both online and offline. Within inter-organizational networks, interactions occur around policy and around issues. Marsh and Rhodes (1992) show how networks’ structures affects policy outcomes, and they created a typology of networks based on dimensions of membership, integration, resources, and power. Rhodes (1988) based her research on two of these typologies by contrasting policy communities and issue networks. Policy communities are described as communities involving powerful organizations that control key resources and tend to produce policy continuity (Marsh & Rhodes, 1992). Moreover, policy communities are based on common understandings of problems within a particular policy domain (such as the housing policy domain.) Ideas in a policy domain, must conform to the normative orientation of the group and cases of conflict are solved through general consensus of the group. In this case, networks of organizations that co-participate in congressional hearings are structured by the schedule and agenda of congressional hearings.

Issue networks are described as having more limited control over resources and are often faced with more open contests with interest groups outside the network (Marsh, 1988). Issue networks are often created around emerging issues, membership is not limited, participation is often diverse, and contrasting opinions are permitted without a need for general consensus. Hyperlink networks can be characterized in
this way because they are not reliant on a structure or schedule, and they are open to the diversity of the Internet as a whole.

This study examines the social solidarities among organizations in two networks: an issue network of hyperlinked organizations and a policy community of organizations that co-participate in congressional hearings. The emphasis remains on the issue network that represents choices made through the agency of the organization; however, adding another dimension to information gathered about the networked movement deepens understanding regarding the policy community and ability to participate in a structured environment. An organization brings the same resources deployed to both networks, but resources gained might differ depending on the structure of the network. These structural advantages and disadvantages are examined to describe two types of social solidarity networks utilized by 26 housing social movement organizations (HSMOs) (see also Kropczynski & Nah, 2011). While examining these two types of networks (the political community and the issue network) during two periods (pre- and post-housing bubble), this study asks whether the same resources deployed produce the same resources gained in both types of networks. Furthermore, does having more alliances in one network correlate with alliances in the other and/or between time periods?

2 Relevant background

The political event around which this study centers is the United States housing crisis a structural change that began to develop long before the housing bubble burst. The housing bubble is commonly defined as the time period wherein the United States experienced a sharp rise between 1998 and 2008 (Erickson, 2009). The bubble soon burst when a sudden and dramatic drop in home prices occurred in 2008 (Erickson, 2009). The political environment clearly shifted before and after 2008 in part due to the change in presidential administration. Many worldwide housing related organizations were forced to close with this shortage of resources, especially non-profit organizations and SMOs (Erickson, 2009).

During the two political eras discussed here (pre-housing bubble and post-housing bubble), the political and economic environment changed considerably. HSMOs have continued to influence housing policies related to affordable housing, but the way that organizations network with one another has been changed by increased competition (Erickson, 2009). For example, HSMOs have changed their approach to societal concerns to match societal needs as policy and grant dollars dictate. A typology of activities that HSMOs engage in was developed in a previous iteration of this study (Kropczynski & Nah, 2011) which includes: advocacy, assistance, research/informative, and oversight. While some HSMOs offer housing assistance directly through financial means, others focus indirectly on advocacy by lobbying for improvements in homeowners’ financial well-being through, while others offer housing assistance directly. Others engage in research to inform policymakers and practitioners or engage in informative practices, such as financial literacy for first time homeowners. Several HSMOs still include oversight of the Fair Housing Law of 1968 as part of their mission and goals. Different types of HSMOs are more or less dependent on the Web-based goals of the organization. Informative HSMOs tend to rely more heavily on their Websites to spread up-to-the-minute news to target audiences quickly and easily while lobbying groups will be more active. The structure and type of HSMO networks has also broadened in the digital age due to the increasing importance of online networks and resources to achieving the goals and missions of SMOs. These non-profit organizations often work on small budgets and are quite familiar with efficient mobilization on a budget.

Given the lack of comparative research on online and offline inter-organizational network structures through a longitudinal study, the present analysis contributes by presenting the structural transformation of an issue network of hyperlinked organizations and a political community of a co-participation in congressional hearings at two different time periods given changes in the political and economic environment. The pre-housing bubble time period was more abundant in resources, such as funding and less competition among housing organizations, but the focus on home purchases shifted to the present climate of fewer resources and more competition during post-housing bubble debt reforms. This study therefore assumes that HSMOs will maximize their exploitation of political opportunities (i.e. competition for fewer resources in a new political and economic environment) differently in order to gather resources given differing deployable resources. These political opportunities are measurable at two levels: (1) the node-level, which can be measured through degree centrality and quadratic assignment procedure (QAP) regression, and (2) the network-level, which is measurable using QAP correlation and testing for homophily in the network. At the node-level, degree centrality refers to the number of links that correspond to a particular node. In directional networks, indegree centrality refers to incoming links, while outdegree centrality refers to outgoing links (Scott, 2000). Correlation between networks will test for
similarity or dissimilarity between two periods or two network types, while network homophily examines the tendency for ties to form based on similarities between actors in a network (Scott, 2000).

The purpose of the study is to understand how resources deployed improve resources gathered by examining the changes in the network of HSMOs from two perspectives at two time periods. Shumate and Dewitt (2008) argue that the creation of hyperlink networks is best explained by collective action theory (Olson, 1968) which also highlights the potential for unequal effort by free-riders in the network. This argument is made by considering hyperlink networks to be a contribution to public goods.

Previous research shows that participation in online hyperlink networks by organizations increases the relevance of those organizations. Shumate (2012) examined the evolution of a hyperlinked issue network including nongovernmental organizations over one year; she found that indegree centrality and issue network participation by organizations are related to the selection of hyperlinks by conscience constituents. Weber (2012) studied the effects of hyperlinks on inter-organizational network structure among newspaper organizations over time, finding that early actions in the inter-organizational online community had measurable effects on the entire industry. While literature exists comparing hyperlink networks to themselves over time, few studies have compared hyperlink networks to the network structure of the same organizations participation in the policy domain.

Barry Wellman declared that “the proliferation of computer-supported social networks has afforded changes in the way people use community: community is becoming defined socially not spatially” (p. 53, 2005). The direct psychosocial effects of Internet communication can vary depending on the individual who uses this form of communication and how he or she uses it. For this reason, Williams (2006) echoes to distinguish between online and offline forms of social capital rather than assuming they have the same value. Through the expansion of SMO networks, online social capital might translate directly into offline social capital, building more reciprocal ties and density in networks (Davis, 2005; della Porta & Diani, 2006; Hensmans, 2003). In the case of HSMOs in this study, the implication is that the hyperlink network structure that they share (i.e., their online social capital) bears some evidence of their efforts for organizational collaborations or assistance in their offline social capital. Therefore, online and offline networks are distinct but interrelated through networked communities (Nah, 2010b).

The networks of HSMOs should be evaluated considering digital communication technologies as new types of resources (technological opportunity), as well as different political and economic opportunities before and after the bursting of the housing bubble. These changing social relations can be examined in many ways. For this study, changes in the hyperlink network structure and co-participation in Congressional testimony will be the focus. A study of the social housing sector in the Netherlands by Van Bortel and Elsinga (2007) examined the housing political environment as a network of players and used three key concepts to describe these inter-organizational networks. The first concept they used was multiformity, which can manifest itself within and between organizations. Similar to bridging social capital between organizations, the housing sector illustrates multiformity by being comprised of numerous parties with differing interests, values, and organizational characteristics. Organizations could differ as drastically as housing associations, municipalities, and project developers or as simply as housing associations with different size, financial position, and strategy. Multiformity takes place in organizations when network players represent several department or organizational units, such as federated organizations. Multiformity in this case can refer to differences in network structure or the agency of SMOs in the same network as they interact in either the information network and political community.

A second characteristic of political networks described by Van Bortel and Elsinga (2007) is “closed-ness.” De Bruijn and Ten Heuvelhof (1999) originally used this concept to describe organizations’ sensitivity to “steering signals” (p. 38) that align with their own frame of reference, while they dismiss those that are not. If a steering signal is contrary to the frame of reference, it will provoke active resistance, while if the steering signal is not related, it will simply be ignored. De Bruijn and Ten Heuvelhof (1999) argue that organizations must be closed to a certain degree, as a response to all signals would be overwhelming. Closed-ness can be problematic when organizations ignore beneficial steering signals that fall outside of their frame of reference. Building on McAdams (1982), the structural potential of HSMO networks to maximize ability to exploit political opportunities increases indigenous inter-organizational strength. Increased competition among organizations, however, could lead to increased closed-ness in 2010 compared to 2007 which would lead to an indigenous inter-organizational weakness in the housing movement.

The third characteristic used by Van Bortel and Elsinga (2007) is interdependency. Interdependencies occur between different players typically through the distribution of resources among a large number of players. Interdependencies can lead to lower transparency in a network, they can temper actions of conflicting players, and they can lead to important steering opportunities. Two parties are not
always mutually dependent on dependencies; for example, in the hyperlink network, a tie might be one directional, but in the network of co-participation, each tie is labeled as reciprocal. These three types of characteristics in complex networks can be present in both the hyperlink network and the network of co-participation. Interdependencies can be characterized by either a link between two organizations in a hyperlink network over time or two organizations that co-participate in Congressional hearings and rely upon one another. It is difficult to determine if interdependencies exist without directly asking the organizations; however, sustained contact between organizations or predominance of bonding ties (see Kropczynski & Nah, 2011) based on common attributes might indicate that interdependencies exist in the network.

As follows from the above review, political opportunity is a key to mobilization. That is, different political opportunities and a structural change in the environment will lead to different organizational activities. For example, the goal of pre-housing bubble politics for an ownership society differs from the post-housing bubble political climate, which focuses on financial education and loan reform (Becker, Stolberg, & Labaton, 2008; Hunnicut, 2009). Prior to the wave of foreclosures in the pre-housing bubble HSMOs held more resources in the form of government grants incentivizing construction of single-family housing. Then, due to economic recession, HSMOs found themselves with fewer resources during the post-housing bubble time period with a focus on financial institutions. Changes in the hyperlink network during the two different time periods indicates that organizations had no alternative, but to respond to the changing political environment. This calls for a need to examine how organizations and their network of hyperlinks mobilize resources in conjunction with external political changes. Based on the above background and literature review, examination of the hyperlinked network of national HSMOs both before and after the housing bubble burst should reveal changes in this network over time. Considering different political opportunities and discretionary resources in the time of the pre-housing bubble time period versus the post-housing bubble time period, several research questions and hypotheses have been proposed.

3 Research Questions and Hypotheses

The following research questions explore changes structure in the political community and the issue network due to the housing crisis.

RQ1. Do the same resources deployed produce the same resources gained in both networks and between periods?
  o Hypothesis 1. Due to multiformity (i.e. differences of age, type, and revenue of organizations) and agency to choose ties in the hyperlink network, the same resources deployed will not yield similar resources gained in both networks.
  o Hypothesis 2. Interdependencies (in the form of bonding ties) based on similarity in resources will exist in 2007 and 2010.

RQ2. Does having more alliances in one network correlate with alliances in the other and/or between periods?
  o Hypothesis 3. Due to multiformity in organizations and agency to choose in the hyperlink network, alliances in political community will not correlate with alliances in the issue network, and vice versa.
  o Hypothesis 4. Due to differing political opportunities in 2010 and closed-ness in ability to choose ties in the political community, resources deployed in 2007 will yield more social solidarities than those deployed in 2010.

4 Method

4.1 Data collection of issue network

This study adopts a hyperlink network analysis and networks of co-participation in Congressional hearings to examine and compare the network structures of housing movement groups during two political eras (pre- and post- housing bubble). Hyperlink network analysis maps the network structure of incoming and outgoing hyperlinks from Websites. Park (2003, 2006) has indicated that these network structures are often representative of interactions (or lack of interactions) among organizations, and through Web visibility hyperlinks, promote trust, prestige, credibility, and authority of organizations to Web surfers (Bae, & Lee, 2005). The sample consists of 26 national housing organizations (see Appendix). No comprehensive list is available of all national fair housing social movement groups. Thus, a sample was
manually collected using a variation of a snowball sample with a crawl depth to redundancy (Kropczynski & Nah, 2011).

Specifically, beginning with a non-comprehensive list of national organizations found through a Google search for “Housing Organization,” each organization’s Website was visited and all of the linked organizations were recorded. Each time an organization that was not on the list appeared in a link, the new organization was added to a matrix of their relationships to one another until no redundancy and no new organizations appeared. Housing organizations’ Websites were evaluated to limit the list to those organizations that could be defined as SMOs by excluding organizations that were not non-profit organizations (e.g., those that were government or profit-based). Limiting the sample to non-profit organizations eliminated for-profit non-bank lending agencies. Outgoing links were collected from the individual Websites themselves by visiting the Website and links listed on a “links” or “resources” page were recorded; incoming links were identified using a tool on Google’s search engine. Starting with Google’s main page, each organization’s name was entered into the search bar using Google’s search for incoming links (e.g., LINK: “www.habitatforhumanity.com”). All Websites that were either no longer active or listed with a file type (e.g., .doc or .pdf) were excluded from the list of incoming links.

Through a longitudinal hyperlink analysis, the hyperlink network and other Website characteristics were recorded at two periods. Time one was 2007 pre-housing bubble and time two was 2010 post-housing bubble. The same list of 26 national housing organization Websites were re-visited and the same information was recorded for the post-housing bubble time period of financial reform.

4.2 Data collection of political community

Co-participation in Congressional hearings was collected using the same 26 national organizations used in the issue network. A sample of legislation was selected using the LexisNexis Congressional Search Database. A search was performed under the name of each of the 26 HSMOs, and all hearings that the HSMO participated in in 2007 and 2010 were recorded. Participation in hearings was used to create a 2-mode network with organizations/affiliations as one mode and hearings as the second mode. This matrix was then used to create a 1-mode matrix of organizations affiliated by hearings for each time period. Another way to state this, is that in the 1-mode network, the nodes are exclusively represented by HSMOs, which are linked directly to one another by ties of co-attendance. The 1-mode network is deduced from information in the 2-mode (actor-by-event) matrix.

4.3 Data collection of HSMO attributes

Several attributes were acquired using the National Center for Charitable Statistics online database of data that organizations report to the Internal Revenue Service. Variables assigned as network attributes are described in the next paragraph. The ruling date of an organization is the year that the organization first filed with the IRS. The National Taxonomy of Exempt Entities (NTEE) is a classification system of non-profit organizations. Most of the HSMOs were classified as community improvement, housing/shelter, or did not have an NTEE code. For this reason, two dummy attributes were created for the NTEE code: housing/shelter and community improvement. Total revenue is the total yearly revenue reported to the IRS. The last attribute added is whether the organization is federated and is a national organization that encompasses regional/local organizations.

For this methodology several attributes may be considered true resources of an organization that may be gathered in order to benefit organizational success, for example total revenue. Other attributes have been added to simply assess homophily among organizations, for example age and type of organization.

4.4 Measurement, Analytical Techniques and Results

Research question 1, asks if the same resources deployed will produce the same resources gained across networks and time periods. Incidence of multiformity (Hypothesis 1) and interdependencies (Hypothesis 2) is addressed by performing a regression of attributes in a random permutation test and testing for homophily. Testing for autocorrelation based on attributes of the network is the most effective way to test for homophily in each network. Moran/Geary statistics were used to account for continuous variables. The results in Table 1 show that homophily is present in the 2007 and 2010 political communities based on ruling date and having an NTEE code that categorizes the organization as Housing/Shelter (as opposed to Community Improvement).
Table 1. Randomization test of autocorrelation using Moran/Geary Statistics (Data presented include mean ± 1 SE)

<table>
<thead>
<tr>
<th>Variable</th>
<th>2007</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Issue Network</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ruling date</td>
<td>1.003</td>
<td>1.120</td>
</tr>
<tr>
<td>Community Improvement</td>
<td>1.021</td>
<td>1.392</td>
</tr>
<tr>
<td>Housing/Shelter</td>
<td>1.142</td>
<td>1.180</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>1.303</td>
<td>1.127</td>
</tr>
<tr>
<td>Federated</td>
<td>1.135</td>
<td>1.430</td>
</tr>
<tr>
<td><strong>Political Community</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ruling date</td>
<td>0.099**</td>
<td>0.088***</td>
</tr>
<tr>
<td>Community Improvement</td>
<td>0.820</td>
<td>0.923</td>
</tr>
<tr>
<td>Housing/Shelter</td>
<td>0.420*</td>
<td>1.00 ± .225</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>3.416</td>
<td>2.123</td>
</tr>
<tr>
<td>Federated</td>
<td>1.430</td>
<td>1.335</td>
</tr>
</tbody>
</table>

Smaller values indicate positive autocorrelation. A value of 1.0 indicates perfect independence. AC denotes autocorrelation. \( \bar{x} \) denotes mean number of permutations.

* p < .05

** p < .01

*** p < .001

The second hypothesis is tested using multiple regression of degree centrality with permutation based significance tests. The coefficients are generated by standard OLS linear modeling techniques and are based on comparing scores on independent and dependent attributes of individual actors. What differs with this particular type of regression calculated in UCINET is the recognition that actors are not independent; therefore, estimation of standard errors by simulation, rather than by standard formula, is necessary. The correlation matrix shows a very high collinearity between total assets and total revenue. This suggests a possible difficulty in separating the effects of these two groups. The variables in this model were therefore reduced to the ruling date of the organization and the total revenue. The R-squared is rather low for both models (.342) for 2007 and (.274) for 2010; nonetheless, it is highly significant (p=.015) in 2007 and significant (p=.028) in 2010.

HSMOs that have a more current ruling date appear to have a higher degree centrality in the political community in 2007 (.3347, p = .043) and even higher degree centrality in the political community in 2010 (.4347, p = .012). This corresponds with these organizations mission statements based on advocacy, which may have led to increased political testimonies post-housing bubble. HSMOs that have a higher total annual revenue appear to have a higher degree centrality in the political community in 2007 (.4206, p = .050), although this decreases in 2010 (.2202, p = .170); however, this result is not significant and may be random.

Research question 2 is addressed using quadratic assignment procedure (QAP) correlation and QAP regression. QAP correlation calculates measures of nominal, ordinal, and interval association between the relations in two matrices and uses quadratic assignment procedures to develop standard errors to test for the significance of association. Correlation between types of networks and two time periods were examined using QAP correlation. The results show significant correlations between types of networks during two different time periods, but no significant correlations between two different types of networks (the issue network and the political community) during the same time period. A moderate correlation (.375) exists between the two time periods of the issue network (p = .0002), and a strong correlation (.781) exists between the two time periods of the political community (p = .0002). The results between different networks during the same time period are not statistically significant and could be due to random error. A weak negative correlation (-.053) resulted between the 2007 issue network and 2007 political community (p = .2841). A weak negative correlation (-.059) also exists between the 2007 issue network and 2010 political community (p = .1436). These results show that the political community has a higher correlation before and after the bursting of the housing bubble than the issue network. No correlation exists between the issue network and the political community before or after the bursting of the housing bubble.

Rather than correlating one relation with another, predicting one relation knowing the other might be preferable. That is, rather than symmetric association between relations, asymmetric associations
should be examined. The standard tool for this question is a QAP regression, which might use more than one independent variable so that both the two different types of networks and time periods can be examined more closely. This analysis will test for increased open-ness to solidarities in 2007 (Hypothesis 4) using two models. The issue network of 2007 is the dependent variable of the first, and the political community of 2007 is the dependent variable in the second model.

In the first model there are two independent variables, the first independent variable tests if the presence of a tie in the issue network in 2007 will increase the likelihood of a tie in the issue network in 2010. Furthermore, the second independent variable tests if the presence of a tie in the issue network in 2007 will increase likelihood of a tie in the political community in 2007. Quadratic assignment has been used again to estimate standard errors for R-squared and for the regression coefficients. The 2007 issue network model R-square (.222) indicates that knowing whether an organization has a hyperlink tie in 2010, and whether the two organizations have a tie in the political community in 2007, reduces uncertainty of the tie having already existed in the 2007 issue network by only 22%. The significance level (by the QAP method) is .0001; therefore, the observed result is non-random. The intercept indicates that if two organizations are not hyperlinked in 2010 and are not linked in the political community in 2007, an increased probability exists that they will be linked in the issue network in 2007 by .18. If the two organizations are hyperlinked in 2010, the probability of having been hyperlinked in 2007 increases by .594 (p = .0001).

The 2007 political community model R-square (.611) indicates that knowing whether an organization co-participates in the political community in 2010, and whether the two organizations have a hyperlink in 2007, reduces uncertainty in co-participation in the political community before the housing bubble burst in 2007 by 61%. The significance level (by the QAP method) is .0001; therefore, the observed result is non-random. The intercept indicates that if two organizations are not hyperlinked in 2007, and they do not co-participate in the political community in 2010, an increased probability exists that they co-participated in the political community before the housing bubble burst in 2007 by .12. If the two organizations co-participated in the political community in 2010, the probability of having co-participated in hearings in 2007 increases by 1.148 (p = .0001).

The QAP regressions show an increased open-ness to social solidarities before the housing bubble burst. However, while there is a significant difference among time periods, none of the effects between the two types of networks (the issue network and policy community) during the same time period are different from zero at conventional (e.g. p< .05) levels.

5 Discussion and Concluding Remarks

In essence, the results show that the answer to research question 1—which asks if the same resources (age, type, and revenue of HSMO) deployed produce the same resources (age, type, and revenue of HSMO) gathered in both networks—is that they do tend to have higher social solidarities based on the age of the organization. The multiple regression of degree centrality across networks showed that in 2007 organizations with higher total revenue and more recent ruling dates were more likely to have increased social solidarities in the network. In 2010, only organizations with recent ruling dates were likely to have increased social solidarities in the network. This finding might be due, in part, to changing political environments. While organizations with higher total revenue had increased social solidarities in 2007, the change in political and economic environments in 2010 changed the social structure of the network and created a more erratic distribution of total revenue.

When using the same test of autocorrelation, there were no significant attributes tested in the issue network. In the political community, a tendency exists for the majority of ties to be based on similarity in ruling date and housing/shelter organizations. This showed a similarity across two time periods, but not across network types. This might be due to increased agency in the issue network that creates more unstructured patterning of networks. On the other hand, the structure of the political community might lend itself better to homophily based on similar organizational attributes. Therefore, hypothesis 1, that multiformity among organizations in different networks does not yield similar resources gained, can be accepted. Hypothesis 2 can also be accepted; it states that interdependencies based on similarity in resources will exist in 2007 and 2010 was only true of the political community based on age of organization and housing/shelter mission.

Research question 2 asked if having more alliances in one network correlated with alliances in the other network and/or time period. While the QAP correlation and regressions showed strong similarities across time periods, it did not show similarities between the two types of networks (political community and issue network). While similarities existed between time periods, the results of the QAP regression also showed a stronger tendency for HSMOs to have ties to one another before the housing
bubble than after it. This tendency to no longer link to one another could be due, in part, to more competition for scarce resources in 2010, compared to 2007. Hypothesis 3—that due to multiformity in organizations and increased agency in the hyperlink network, alliances in one network will not correlate with alliances in the other—can also be accepted. Hypothesis 4, which states that due to differing political opportunities and increased closed-ness in 2010, resources deployed in 2007 will yield more social solidarities in 2010, can also be accepted.

Newly emerging digital communication technologies have become available for HSMOs to mobilize resources through new online tools that send messages to conscience constituents (and, to a lesser extent, to organizations). The hyperlink network is known to increase visibility and Web traffic. Moreover, it provides a method of maintaining relationships that exist offline, which can be considered a collective good gained from membership in the online network (Shumate & Dewitt, 2008). Because an organization can benefit just from incoming links (i.e., having indegree centrality) without reciprocating to the network with outgoing links to other organizations, organizations with only incoming links can be considered free-riding organizations within the issue network. In this case, an organization in a hyperlink network received the collective goods traveling through the hyperlink network without actively participating in any type of hyperlinking. However, Hindman, Tsioutsouliklis, and Johnson (2003) described the Internet as having a few websites that receive the bulk of Internet traffic. Thus, organizations might continue to interact regularly offline, so an organization that does not participate in hyperlinking is not necessarily a true free-ruider within the wider movement. This might be another approach to the power-law distribution that Hindman, Tsioutsouliklis, and Johnson (2003) discussed in their anti-egalitarian discussion of Web traffic; several organizations are gathering and/or creating the majority of hyperlinks. The analysis presented in this paper offers insight into the changing network structures in times of limited resources.

Although this study contributes to theoretical, methodological, and practical knowledge on this topic, several limitations exist. First, the transformation of the network could be due to factors other than the political opportunities of the pre- and post-bubble time periods. For example, physical collaborative ties might have transformed due to resource allocations and reconfigurations among HSMOs. Second, a comprehensive analysis of the presence of the housing social movement could include local, regional, and federated SMOs as well as non-SMOS to paint a full picture of network influence. Third, it follows that an in-depth interview would allow for the comparison of the issue network to the political community, which could be drastically different from what shows here. Lastly, a network analysis using information about these organizations on social networking sites could tell a story about the transition from Web 1.0 (e.g., the Internet/WWW/hyperlinks) to Web 2.0 (e.g., social networking and micro blogging). These additions would benefit future research in this area.

References


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Appendix. List of 26 Housing Social Movement Organizations

<table>
<thead>
<tr>
<th>Name</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Fair Housing Advocate Online</td>
<td><a href="http://www.FairHousing.com">www.FairHousing.com</a></td>
</tr>
<tr>
<td>National Fair Housing Alliance</td>
<td><a href="http://www.NationalFairHousing.org">www.NationalFairHousing.org</a></td>
</tr>
<tr>
<td>National Housing Law Program</td>
<td><a href="http://www.nhlp.org/">http://www.nhlp.org/</a></td>
</tr>
<tr>
<td>Housing Assistance Council</td>
<td><a href="http://www.ruralhome.org/">http://www.ruralhome.org/</a></td>
</tr>
<tr>
<td>Knowledgeplex</td>
<td><a href="http://www.knowledgeplex.org/">http://www.knowledgeplex.org/</a></td>
</tr>
<tr>
<td>Local Initiatives Support Corporation</td>
<td><a href="http://www.lisc.org/section/resources">http://www.lisc.org/section/resources</a></td>
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<td>National Council of State Housing Agencies (NCSHA)</td>
<td><a href="http://www.ncsha.org">www.ncsha.org</a></td>
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<td>National Housing Conference (NHC)</td>
<td><a href="http://www.nhc.org">www.nhc.org</a></td>
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<td>National Low Income Housing Coalition (NLIHC)</td>
<td><a href="http://www.nlihc.org">www.nlihc.org</a></td>
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<td>National Multi Housing Council (NMHC)</td>
<td><a href="http://www.nmhc.org">www.nmhc.org</a></td>
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<td>Fair Housing Accessibility First</td>
<td><a href="http://www.fairhousingfirst.org/">http://www.fairhousingfirst.org/</a></td>
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<td>The National Homeownership Sustainability Fund</td>
<td><a href="http://fairlending.com/">http://fairlending.com/</a></td>
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<td>Center for Urban Community Services</td>
<td><a href="http://www.cucs.org/">http://www.cucs.org/</a></td>
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<td>Citizens' Housing and Planning Association</td>
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<td>Community Associations Institute</td>
<td><a href="http://www.caionline.org/">http://www.caionline.org/</a></td>
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<td><a href="http://www.habitat.org/">http://www.habitat.org/</a></td>
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<td><a href="http://housingresearchorg.blogspot.com/">http://housingresearchorg.blogspot.com/</a></td>
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<td>Innovative Housing Institute</td>
<td><a href="http://www.inhousing.org/">http://www.inhousing.org/</a></td>
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<td>National Affordable Housing Network</td>
<td><a href="http://www.nahn.com/">http://www.nahn.com/</a></td>
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<td>National Housing Institute</td>
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<td>National Housing Trust</td>
<td><a href="http://www.nhtinc.org/">http://www.nhtinc.org/</a></td>
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<td>Youth Build USA</td>
<td><a href="http://www.youthbuild.org/">http://www.youthbuild.org/</a></td>
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<td>National Rural Housing Coalition</td>
<td><a href="http://www.nrhcweb.org/">http://www.nrhcweb.org/</a></td>
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<td>Alliance for Healthy Homes</td>
<td><a href="http://www.afhh.org/">http://www.afhh.org/</a></td>
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<td>Council for Affordable and Rural Housing</td>
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<td>The Campaign for Affordable Housing</td>
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