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A data appendix with additional results and copies of the computer programs used to generate the results presented in the paper are available from Sean Safford at the Institute for Work and Employment Research, MIT-Sloan School of Management, Massachusetts Institute of Technology, 50 Memorial Drive, Suite 580, Cambridge, MA 02142. Email: ssafford@mit.edu

Abstract

This paper seeks to understand how US labor unions – once key institutions in American political and economic life – can re-emerge as important and viable organizations. Building on the extensive literature on the "social embeddedness" of economic activity as well as on union revitalization, we hypothesize that where local unions are able to rebuild linkages to other local groups, they should be successful at revitalizing themselves organizationally. Where unions fail to embed themselves in their broader communities – notwithstanding genuine efforts at launching new strategies and rebuilding their own organizations – they are likely to stagnate. The paper reports the results of two matched pair case studies of building trade locals in Boston, Massachusetts, and Portland, Oregon. One set of cases focuses on Pipetrades in the two cities. The other set of cases focuses on the cities' Carpenters unions. To gain more objective information on the unions' embeddedness in local networks we employed a survey that identified approximately 100 industry stakeholder organizations including builders, architects, engineers, major property owners, neighborhood and environmental groups, local and state governments, and banks and lenders. We received responses from 46% of the organizations we contacted from which we were able to conduct a series of network analyses that complement our qualitative research.

Introduction

This paper seeks to understand how US labor unions – once key institutions in American political and economic life – can re-emerge as important and viable organizations. Union membership has declined from a height of 35% in 1955 to just 11% today. The explanations for this decline are multiple and often contradictory. Union decline is portrayed alternatively as the by-product of various secular trends taking place in the economy (i.e., the shift from manufacturing to services, increased international competition) (Freeman 1985; Western 1997; Farber and Western 2001; Allen 1988) or the result of a concerted anti-union strategy by corporate interests and their political allies in Washington (Goldfield 1987; Fantasia 1988; Bronfenbrenner, et al 1998; Linder 1999). This paper does not seek to revisit or even to contribute to the debate on union decline in the US. Instead, we ask: Given the important role unions have played historically in this country, what (if anything) can be done to reverse this situation?

We answer this question through an analysis of two matched pair case studies in the construction industry. One set of cases focuses on Pipetrades[1] unions located in Boston and Portland, Oregon. The other set of cases focuses on Carpenters unions in the same two cities. Despite their similar challenges, economic contexts, factor endowments and use of tactics, these four local unions have experienced very different organizational trajectories in recent years. Whereas the Portland Pipetrades' local has gained membership, increased market share, and renewed its status as a significant contributor to the success of its community, its counterpart in Boston has continued to stagnate. Just the opposite occurred with respect to the two Carpenters' unions in these two cities. Notwithstanding efforts by several highly talented and energetic leaders, Portland's Carpenters have languished. Their counterparts in Boston, on the other hand, have fought back from the verge of collapse and are now enjoying increasing wages and strong employment levels as well as renewed political clout in both the industry and the region generally.

How do we understand these divergent outcomes in the face of remarkably similar challenges? How can we explain why unions situated in almost identical economic, political and social contexts respond so differently to the challenges (and opportunities) they face? Building on the extensive literature on the "social embeddedness" of economic activity as well as on union revitalization, we argue that whether or not unions can re-invigorate and re-launch themselves depends upon how successfully they embed themselves in their local social, political and economic contexts. During their hey-day of power and

[1] Local jurisdictions differ with respect to the combination of plumbing, pipefitting, sprinklerfitting and other mechanical trades. We include all of these crafts under the umbrella term "Pipetrades."

influence, unions were not simply membership organizations but rather central institutions in their communities. They were central vehicles for the social integration of immigrant workers and the political mobilization of working class citizens (Lichtenstein 1983, Schneirov and Suhrbur 1988, Kazin, 1989). They also played important roles in the economy, promoting industrial upgrading in certain sectors (e.g., garments), training and coordination functions in others (e.g., construction), and economic redistribution and benefit provision in most (Katz 1985, Fraser 1988, Jacoby 1991, Houlihan 1993). Their centrality in a whole network of organizational and institutional ties made them not only important and respected actors in their local communities but also well-informed and responsive organizations – responsive not just to their members but to the community at large. Over the course of the postwar period, however, many unions lost their centrality in the nexus of local organization linkages. As a result, they became increasingly insulated and isolated organizations, seen as representing "special interests" rather than broader societal goals.

Today, some unions are changing and re-emerging as vital and important organizations. These revitalized unions have been successful at changing because they have rebuilt not only their own organizational capacities (Piore, 1994; Grabelsky and Hurd 1994; Juravich and Bronfenbrenner, 1999; Turner 1999, Ganz 2000; Voss and Sherman, 2000; Frost, 2000, Katz, Batt and Keefe, 2001) but also their linkages to other organizations and groups in their communities. Being embedded in an articulated network of social and institutional ties has been shown to be important for the sharing of strategic information (Granovetter, 1985; Burt, 1992; Podolny 1993, 1994; Uzzi 1996, 1997), the ability to communicate across and identify with divergent groups (Padgett and Ansell, 1993; Dutton and Dukarich, 1991; Zukin and DiMaggio, 1990), and the capacity to build alliances and/or to engage in collective action (Locke, 1995; Locke and Jacoby, 1997).

Drawing on this literature, we argue that the rebuilding of multiple, cross-cutting ties to other groups and institutions in the local community provides unions with not just more but more varied and more timely information. This information is key to helping unions both understand and respond to changes in their economic and political environments. Increased communication with multiple actors also helps local unions better understand stakeholders vocabularies and concerns and thus transform in ways that reflect a more representative range of stakeholders' interests. Finally, embeddedness in the local community also provides unions with potential allies and/or mediators in future struggles and partners in future collective efforts. Applying this network theory to unions, we hypothesize that where local unions are able to rebuild linkages to other local groups, they should be successful at revitalizing themselves

organizationally. Where unions fail to embed themselves in their broader communities – notwithstanding genuine efforts at launching new strategies and rebuilding their own organizations – they are likely to stagnate.

Construction unions, like most other craft unions, have historically been closely tied to their communities given that both product and labor markets were coterminous with the communities within which building trades workers lived (Commons 1934, Ulman 1955). Building trades unions played active roles not just in the local economy but also in the social and political life of their communities (Kazin 1989, Schneirov and Suhrbur 1988, Jacoby 1991, Houlihan 1993). Since the late 1970s, however, economic and technological innovations have broadened the scope of the industry's product market beyond the local labor market/community while various political changes have altered the nature of competition within the industry by introducing a strong, non-union set of actors. Given these changes, building trades unions have had to reach out beyond their traditional interlocutors and build ties to a broader set of community and industry actors if they are to regain their prominence in the industry. Whether or not, and if so, how, they are able to do so is the central question of this paper. If even building trades unions, the most likely among American unions (given their historical, craft-based tradition) can not rebuild their ties to other actors in their communities, then what hope can there be for other unions in other sectors that are much less geographically bound? However, if building trades unions are successful at rebuilding their community linkages and developing new relationships with new actors in the industry, then what insights might their experience provide for other unions also struggling to redefine their place in the new economy?

Methods

This paper reports the results of two matched pair case studies of building trade locals in Boston, Massachusetts, and Portland, Oregon, in order to explore the role embeddedness plays in unions' ability to transform themselves. One set of cases focuses on Pipetrades in the two cities.[2] The other set of cases focuses on the cities' Carpenters unions. These locals were identified from a series of interviews conducted as part of a larger, ongoing, project on union revitalization. We interviewed the leadership of several national craft and industrial labor unions in the United States. These interviews yielded a list of

[2] Local jurisdictions differ with respect to the terminology and grouping of plumbing, pipefitting, steamfitting, sprinklerfitting and other mechanical crafts. For clarity, we include all of these trades under the umbrella term "pipetrades."

"innovative" local unions that included various craft locals in Boston, Chattanooga, Houston, Kansas City, Las Vegas, Long Island, Los Angeles, Mobile, New York City, Portland, Seattle and Toledo. After examining several of these unions, we chose to concentrate on two sets of locals in Boston and Portland, given the comparability of their economic, social and political contexts.[3]

In November 1999 and June 2000, we interviewed twenty union leaders, builders, government officials, neighborhood leaders and major property owners in Boston. We interviewed twenty-three industry actors in Boston between Fall 2000 and Spring 2001. Each interview lasted between one and three hours. (An appendix at the end of the paper lists individuals interviewed in both cities.) In addition, we read thirty years worth of the Labor Press, Portland's longstanding labor newspaper of record for background information. For the Boston cases, since there is no comparable labor newspaper, we relied on several first hand histories compiled by local trade unionists and conducted keyword searches of the cities' two major newspapers, the Boston Globe and the Boston Herald.

Finally, to gain more objective information on the unions' embeddedness in local networks we employed a survey that identified approximately 100 organizations representing important construction industry stakeholders in each city. These included builders, architects, engineers, major property owners, neighborhood and environmental groups, local and state governments, and banks and lenders. We received responses from 46% of the organizations we contacted from which we were able to conduct a series of network analyses that complement our qualitative research. We turn now to a brief discussion of the changing context of the construction industry before turning to the two case pairs.

The Construction Industry in Transition

The construction industry has evolved and changed along several important fronts over the course of the twentieth century. In this section, we outline, in highly stylized form, a few of the major dimensions along which this evolution has proceeded and how it has shaped union strength and strategy.

The modern construction industry, characterized by myriad contractors, sub-contractors and unions divided among various craft jurisdictions, emerged at the turn of the twentieth century as a by-product of the nation's industrialization and urbanization processes (Christie 1956; Fine 1953; Galenson 1983; Mills 1972a). Within the industry, a "system" developed in which property owners entered into agreements to construct new buildings with general contractors, and the contractors, in turn, entered into agreements with various sub-contractors who actually did the work. Initially, the union's role within the industry was

[3] See Cobb and Locke 2001 for a comparison of healthcare workers' unions in Boston and Los Angeles, another set

largely one of enforcing common wages and working conditions among the contractors of a given geographic region (Houlihan 1993). By the 1930s, however, the unions had developed several additional roles within the industry, including job placement and the provision of training and apprenticeships. Through union hiring halls contractors were able to maintain only a minimum permanent staff, and contract with workers on a project-by-project basis (Jacoby 1991; Mills 1972a; Ross 1972).

During the first 70 years of the twentieth century, the industry slowly evolved within this traditional craft-based structure. In the 1930s, massive federally funded public works projects gave rise to a second level of employers who competed for the largest projects on a national scale. By the Second World War, these contractors had developed relationships with the national unions and negotiated separate agreements that applied specifically to their projects (Mills 1972a; Wolf 1996). At the same time, the industry (which had previously been undifferentiated) sub-divided into four main categories: residential, commercial/institutional, industrial and heavy/high-way (Mills 1972a).

For the most part, the building trade unions' structure and strategy evolved to match the changes taking place in the industry. In response to the emergence of national level contractors, the national unions developed their own staff and organizational capacities to deal with both national contractors and to lobby politicians and regulators in Washington on issues concerning the industry (Mills 1972a; Gallenson 1983). National contracts emerged in the 1930s (Haber 1971). By the 1960s, however, the bifurcation of responsibilities between local and national unions had generated considerable tensions within the unions as local unions began to lose the autonomy and power they had previously enjoyed (Mills 1972a; Dunlop 1961). Nevertheless, with time, local unions learned to adapt to this change by ensuring continued control over local hiring halls which guaranteed their indispensability to national contractors. At the same time, the locals learned to exploit national contracts by shifting politically important members onto these lucrative jobs in the event of a strike. In many cases, this allowed them to outlast local employers at the bargaining table.

The segmentation of the industry also created problems for the unions. Before the Second World War, most construction unions were well represented in the residential market. But the union's grip on the residential segment declined significantly after the War (Erlich 1988; Northrup and Foster 1975). Within the segments in which the unions had maintained a strong presence—commercial, institutional, industrial and large-scale infrastructure projects—the unions remained essential as suppliers of skilled labor and coordinators of multiple project teams. The union hiring halls continued to provide

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of unions studied as part of this project.

contractors with flexible staffing arrangements and the unions continued to provide access to collective goods such as health care and pension benefits which were made available to employers and workers alike. Relations between the unions and contractors were strong, especially since most construction contractors had come up through the ranks and thus been socialized into the industry through union apprenticeship programs. These programs, in turn, provided a common ground for communication, information transfer and trust among the contractors and union leaders. In short, in spite of various changes in the construction industry, unions continued to occupy a central role in the governance of the industry for much of the twentieth century (Ichniowski and Preston 1989).

All of this began to change in the early 1970s. Although inflation rates increased for the US economy as a whole in the late 1960s and early 1970s, wages/prices in the construction industry rose even more. Between July 1969 and July 1971 construction workers' wages rose by 25% as compared to a 12% increase in the manufacturing sector. As a result, the federal government stepped in to control wages in 1971. According to government leaders, the structure of collective bargaining in the construction industry created "perverse incentives" for excessive wage-price increases. Both "featherbedding" labor contracts with extraneous work-related expenses and "leapfrogging" (i.e., unions in one jurisdiction seeking higher wages than their neighbors in another jurisdiction) were common practices in the industry (Mills 1972b; Galenson 1983). Higher wages were passed on to customers because there was little oversight by major property owners – the federal government included. Strike rates were also high in the industry in these years. Between 1968 and 1970, 3000 strikes took place in the industry, representing 36% of all strike activity in the United States. This was almost double the rate that had prevailed in the industry since the War (Linder 1999; Lipsky and Farber 1976). Altogether, the industry (and its unions) had developed a reputation for being unruly, expensive, unproductive, and in many cases, corrupt.

Partly in response to these issues, a committee of major national property owners convened in order to address what were perceived to be a set of "structural inefficiencies" that had crept into the industry over the course of its development. That committee, which eventually became incorporated into the Business Roundtable, issued a series of reports which recommended significant changes in the organization of the industry (Linder 1999). In addition to the industry's collective bargaining structure, the committee also identified an overall decline in productivity generated by the increasing complexity of major projects, inadequate management on the part of contractors and property owners, and inefficient use of technology. The Roundtable generated a number of recommendations in order to address these issues. These included the creation of university and college based training programs for managers and productivity related research and protocols for project managers' oversight of major projects. However,

among the most important changes advocated by the Business Roundtable was the development of a cohort of professional construction managers and construction management firms. Over the course of the last thirty years, these firms have largely replaced the system of general contractors in the industry. No longer do property owners of any size deal directly with contractors. Instead, construction managers act as agents of property owners during the construction process, administering every detail of a project's organization. They employ no construction workers of their own. Construction managers contract directly with both sub-contractors and suppliers to build structures.

This shift has generated several important consequences for unions in the industry. First, the advent of construction management, in conjunction with the introduction of new building technologies, has encouraged further specialization among sub-contractors. This specialization, in turn, has forced contractors to seek out projects on a wider geographic scale. Whereas in the past most contractors competed for work within their home geographic areas, today contractors increasingly bid for projects across several state lines. Conversely, construction management and technological innovations have also led to the erosion of specialization in certain parts of the industry. In the past, clear boundaries separated the different crafts. The work of carpenters, for example, was distinct from that of steelworkers and the work of pipefitters was distinguishable from that of sheet-metal workers. Today, both in an effort to drive down costs and because of changes in the way buildings are built, these craft boundaries are increasingly blurred. This has exacerbated tensions among the unions, which have found themselves fighting with one another over competing jurisdictions.

In the early 1970s, the Associated Builders and Contractors (ABC) emerged as a significant lobbying and education force within the industry with a mission to promote and support non-union or "open shop" construction (Northrup and Foster 1975). The ABC set out to dislodge the building trades unions from their prominence within the industry by undermining union legislation such as the Davis-Bacon Act, which sets a wage floor tied to the union scale for government projects. At the state level, the ABC attacked licensing laws that it saw as favoring union sponsored training programs. At the same time, the organization set out to create an alternative set of institutions to those in which the unions had become central. In many cities, the open shop created its own training programs, hiring hall mechanisms, jurisdictional and administrative boundaries, government lobbyists, and healthcare and pension plans.

Over the course of the 1970s and 1980s, this so-called "open shop movement" spread from city to city by establishing a foothold in suburban areas and then targeting union strongholds in the center cities (Northrup and Foster 1975; Northrup 1984; Erlich 1985). Contractors were forced to chose whether to

remain affiliated with the union-dominated set of institutions or shift to those offered by the open shop. Since 1970, in city after city, that decision has more often than not been in favor of the open shop. The ABC itself grew from a membership of 3,000 contractors and 17 chapters in 1970 (Erlich 1986) to 23,000 members today. More importantly, as Graph 1 shows, union coverage in the industry has plummeted over this same period from approximately 41% in 1970 to just over 18% nationally today.

*** Graph 1 here ***

The Unions' Response

National construction unions and their local affiliates have responded to these changes and to the open-shop challenge in a variety of ways. The unions initially reacted to their losses with concessionary bargaining in the late 1970s and early 1980s. Yet, these had little effect on their decline. Some unions pursued a different tack by intensifying "bottom up" organizing which brings non-union workers directly into the unions' ranks rather than focusing on the more traditional "top down" approach that attempts to convince contractors to sign union contracts. As part of this effort, the unions implemented the COMET program, an innovative attempt to educate rank-and-file members about both the unions' history of exclusion – which is portrayed as the underlying causes of the unions' decline – and on ways the unions could use organizing to remedy its past mistakes. Others, have sought to respond by reducing their costs and offering contractors a variety of concessions or even subsidies for their projects. These "targeted funds" set aside a portion of workers' wages in order to subsidize union contractors facing significant non-union competition. Still others have sought to combine both approaches as well as use various labor and OSHA regulations to pressure contractors into signing union contracts. Finally, many unions have simply redoubled their emphasis on superior training as an inducement to contractors.

Regardless of the particular mix of strategies employed, the results of these efforts have been, at best, mixed. While the unions' coverage in the industry increased briefly at the height of the construction boom in the late 1990s, as graph 1 shows, membership density has again started to decline. Notwithstanding this generally dismal picture, however, a more disaggregated examination of construction union activity and membership rates reveals significant variation at the *local level.* In fact, some local construction unions have successfully rebounded in recent years. Facing the same pattern of declining market share and diminished political presence, these few unions show signs of organizational renewal. We now turn to an examination of four local cases in order to account for these different outcomes.

Pipetrades in Boston and Portland: A Tale of Two Locals

Plumbers and Fitters' Local 290 in Portland, Oregon

With the onset of the Great Depression, Portland became the site of several major public works projects including the massive Booneville Dam located eighty miles east of Portland on the Columbia River. As the U.S. entered the Second World War, industrialist Henry J. Kaiser was awarded major contracts from the federal government to build ships for the war effort. Kaiser located his operations just outside the city of Portland at the juncture of the Columbia and Willamette Rivers. Over the course of the War, the Kaiser ship yards along with a few other smaller operations produced over 1,000 liberty ships. Membership in the building trades, which had been strong before the war, skyrocketed as a result of this massive effort. At the height of the war, for example, Portland's electrical workers union was the largest in the country with over 10,000 members (Kesselman 1990; Wollner 1990; Abbott 1983). After the War, Portland area lumber mills and factories absorbed the thousands of workers who had relocated to the area seeking work in the ship yards. Building and maintaining these facilities formed the core of the building trades' work in the post-War years. By the 1950s and 1960s, Portland's building trades had become economic and political leaders in the community (Abbot 1983).

In the 1970s, however, the open shop movement began to establish a foothold in the region. Much of the competition from the open shop movement took place outside of Portland, in the outlying areas. As a result, the unions' leadership ignored this challenge and focused instead on several major projects that allowed the unions to maintain employment levels for their existing membership in the major cities. The largest of these projects was the $400 million dollar Trojan nuclear power plant located outside Portland.

Events took a serious turn for the worse in 1981 as the region descended into the deepest recession it had seen since the 1930s. The open shop, which had been gathering strength in the state for several years, took advantage of the crisis (Wollner 1990). As the open shop entrenched itself more deeply into Portland's construction economy, major contractors were faced with the stark choice between maintaining their union affiliation and shifting to the open shop. Some split the bill by creating "double-breasted" operations with both union-signatory and open shop subsidiaries. This allowed contractors to selectively bid on work depending on the location and politics of the project (Northrup 1995). Nevertheless, union contractor's share of the market plunged from 91% of non-residential projects in 1979 to just 61% in 1981 (Northrup 1984).

Coincident with the recession of the early 1980s and the rise of the open shop, the local plumbers' and pipefitters' unions were engaged in a bitter jurisdictional fight. Plumbers traditionally work on potable water systems. Pipefitters generally handle heating and cooling. The changing nature of the industry began to blur the boundaries between these two crafts. This was especially true in the area of high tech manufacturing which requires special plumbing systems for delivering purified water to clean rooms. Manufacturing, of all kinds, had traditionally been the province of the fitters. The plumbers, however, laid claim to lucrative high-technology related work arguing that "clean rooms" requiring special plumbing systems were within their jurisdiction. When the state descended into deep recession in the early 1980s, the rift between the two factions turned into an open turf war. The two groups, which until then had jointly bargained a single statewide wage rate, negotiated separately in 1983. The plumbers' settled for $0.74 less than the fitters and thus threatened to lure contractors away from their fitter counterparts. Faced with the prospect of dramatic losses, the fitters' began to picket plumbers' work sites with violence erupting on a number of occasions.

In 1982, the national union stepped in to resolve the situation. The plan called for a complete consolidation of the state's various locals under the auspices of the newly created Local 290. Interim leadership, mainly taken from the existing plumbers union leadership, set out to mend relationships with contractors. Frightened by the growing number of defections, the union engaged in ad hoc bargaining with individual contractors to strike more lucrative arrangements. Eventually, these ad hoc agreements extended to individual projects and included non-signatory contractors. However, these agreements created greater problems for the unions as contractors threatened to defect from the union contract unless they received more favorable terms.

In 1988, a new leader, Matt Walters, took over the local's reigns. He immediately rescinded all ad hoc agreements and set about introducing a new set of internal rules that consolidated power in the office of the business manager. At the same time, the local loosened work practices that were thought to restrict contractors' profit making abilities. Finally, Walters approached contractors with a plan to create a training fund fueled by an unusually large contribution of $0.10 per hour worked. The fund initiated a series of showcase apprenticeship training facilities in the Portland area and around the state. In addition to rebuilding ties to traditional contractors and cleaning up internal union practices, Walters set out to build relationships with key leaders in the industry in various parts of the state. These contacts included major contractors and government officials, many of whom had been alienated by the union's many years of insularity and decline. However, Walters was also careful to cultivate relationships with a whole

new set stakeholders, including property owners, architects and engineers, and building materials suppliers.

In 1993, the Intel Corporation announced it had decided to locate a new plant – the largest computer chip manufacturing facility in the world at the time – in the Portland suburbs. The company had several facilities in the area already. However, the multi-billion dollar facility the company had just announced promised to bring a new level of economic activity to the region. The company, however, had typically used non-union contractors on its Portland area construction sites. After the announcement, Walters flew to San Jose, where Intel's headquarters are located, to personally make the case for using union contractors on this massive project. Prior to his meeting with Intel, Walters met with a chemical engineering consultant named Reinhardt Hanselka. Hanselka had worked for several years on quality control and had acquired both inside knowledge of Intel's decision-making processes and in depth understanding of the specific knowledge, skills and capabilities required to construct the most sophisticated manufacturing facilities. Walters learned that Intel was particularly concerned with its workers' safety and carried those concerns over to its construction projects. The company expected exceptional safety compliance measures of its contractors. At the same time, he learned that the company was receptive to ideas that would portray it in a favorable light within the communities in which its operations were located. Economic well-being and quality of life played important roles in securing the tax-abatements that had been responsible for luring Intel in the first place. To gain approval for its project, Intel had to make the case that it was in the community's best interests to invite the company to build there.

Walters used this information in his pitch to Intel's construction management team. The message was simple: using union contractors would ensure Intel access to the most highly skilled – and hence safety inclined – craftsmen in the region. In addition, by allying with the union, Walters argued that Intel would be contributing to improving community standards by teaching building-trades workers valuable high-tech related construction skills. In short, it would be a perfect match.

The company agreed to build its facility with union plumbers and fitters. In the process the union established a direct relationship with a major property owner, by-passing the typical arrangement in which the building contractor (and more recently, construction managers) stood between the union and the customer. In doing so, the union gained direct access to information about technological innovations and new building requirements while at the same time developing new relationships with

property owners, consultants, engineers and architects – actors with whom it had previously not interacted.

These new relationships had positive spill over effects for the union. By the mid-1990s, fifteen other major chip-manufacturing related projects were launched in the Portland area bringing nearly $16 billion of building and construction investments (Ertel 1996). Although each of these projects could theoretically have been built with non-union labors – and prior to the Intel project, about 50% were – Local 290 used its new ties to the architects, engineers, and consultants specialized in high-tech construction to convince these companies to work with the union. By embedding itself into the team of local and regional companies specializing in high tech construction, Local 290 reinvented itself as an essential player in this segment of the local industry. The results were impressive: since 1993 all new chip manufacturing projects in the Portland area have employed union plumbers and fitters. By the mid-1990s Portland became a major destination for traveling plumbers and fitters nationally. At the same time, the capabilities the union had developed in the course of staffing increasingly sophisticated projects helped transform its training program—already among the best funded in the country—into a model for other plumbers' and fitters' locals nationwide. Today, a majority of plumbers and fitters in the region—both union and non-union workers alike — receive ongoing training at the union's training facilities, financed by a $0.86 hourly levy against members' wages.

Walters reputation in the community today is that of a progressive and effective labor leader, as the following representative comment from an area contractor suggests:

> All this goes back to a group of contractors fifteen years ago that started a dialogue about the industry. We wanted to focus on education and things that would keep us on the leading edge. As a contractor, you go into bargaining with great ideas about getting that kind of stuff into an agreement. [UA Local 290 Business Manager] Matt [Walters] is unique. He has built a culture where that kind of thing is possible. If I was a union guy, he'd be someone I want representing me.

In 1998, union signatory contractors had captured 89% of the region's large projects, matching the levels the had existed prior to the open shop offensive (Bureau of Labor and Industries 1999).

Plumbers' Local 12 in Boston, Massachusetts

By the Second World War, Boston was widely recognized as a major center of education, commerce, shipping, and naval operations. Manufacturing, however, had been on the decline both in the city and more generally in New England for many years. The post-War years brought significant demographic

shifts in the region as the construction of suburban highways and tax incentives that encouraged development in outlying areas began drawing people and jobs out of the city.

Notwithstanding construction sector growth in the 1960s, union membership stagnated. Building tradesmen in the city of Boston were working at or near full employment in these years, bolstered by government led efforts to generate investment in the city with the construction of large scale projects including the Prudential Center and Government Center complexes (Boston Redevelopment Authority 1999). At the same time, however, a cadre of non-union contractors had set up shop and began to challenge union shops for the most lucrative work outside the city limits where new housing and some commercial development were locating (Erlich 1990).

After suffering along with the rest of the country through the stagflation of the 1970s, the Massachusetts economy boomed in the early 1980s. High-tech giants such as Digital Computer, Wang Laboratories and the Raytheon Corporation located in the outlying areas of Lexington, Concord and Newton, along the Route 128 Corridor. In the city of Boston itself, the financial, insurance, real estate and professional services sectors saw tremendous growth. Union contractors built most of the downtown skyscrapers that sprouted up in these years while non-union companies built the vast majority of the high-tech-related structures. As a result, the "Massachusetts Miracle" kept both union and non-union workers employed in their respective geographic domains. Nevertheless, the suburbs grew much faster than the city and thus the gap between the city based unions and the open shop in the suburbs increased. By the middle of the 1980s, 70 percent of the state's construction workers were working non-union (Erlich 1990).

In 1989, the area's economic fortunes took a turn for the worse as the Route 128 corridor was hit hard by the downturn in the computer industry (Saxenian 1994). At the same time, the recession of the early 1990s had a particularly heavy impact on the financial and real estate related firms located in the city. Unemployment soared as the Massachusetts Miracle crumbled. Downtown vacancy rates climbed to 17% and construction both in the city and in the suburbs ground to a halt.

Like other unions in the area, Plumbers Local 12 had been losing strength in the Boston suburbs for several years. When Kevin Cotter took the reigns of Local 12 in 1985, he hired two more Business Agents and set out to restructure the union's governance by consolidating management and financial responsibilities under the office of the business manager. During the short-lived "Massachusetts Miracle" the local's main tactic for securing work was to ensure they were well integrated into the

regulatory processes that govern land use planning in Massachusetts. Property owners often approached the building trades for support in the planning process in return for a commitment to complete the project with union contractors. Cotter, by all accounts, became comfortable in the halls of government and forged strong relationships with many of the area's prominent politicians. These relationships were instrumental in maintaining the union's presence in the city of Boston.

Unfortunately, however, these relationships were not successful at expanding the fortunes of the union outside the city, to the suburbs where the majority of work was being performed. As a result, the local was forced to negotiate ad hoc arrangements with contractors in order to keep them in the union fold. Notwithstanding these efforts, signatory contractors continued to leave the union, especially if their work was located outside of the city's urban core and its immediate suburbs. In 1994, the union implemented a joint labor-management trust fund used to subsidize contractors bids on targeted projects. The labor-management project funded contractors' participation in trade shows in order to keep pro-union contractors in contact with owners, suppliers and architects. It also allowed the local to provide funds to contractors engaged in head-to- head bids against open shop contractors.

Despite their efforts, the local (which represents only Plumbers, the Pipefitters and Sprinklerfitters are separate locals and enjoy even less favorable reputations in the community) did not escape its image as somewhat backward and ineffective. Area contractors believe that the local union did not learn from its prior mistakes. As one contractor from a rural part of the state put it:

> When the economy was poor [in the early 1990s] a lot of mechanical guys went to work in the open shop. As the economy started to pick up, they all came back to the union. Now they don't have enough apprentices and so, up go the wages. They are headed in the same direction in terms of organizing. PLAs [Project Labor Agreements, employed on major infrastructure projects such as the Big Dig, Deer Island and reconstruction at Logan Airport] are their last hurrah. The [plumbers and fitters unions] have seen that in downtown there are some fairly large contractors coming in to do downtown work. But, they can't get their people interested in pay cuts. [As a result] they are still doing lots of side agreements.

The local union, in turn, sees contractors in equally critical terms. "They are busy servicing customers," Cotter explained, "but they don't go outside their clique." In short, unlike their counterparts in Portland, the Boston union did not actively seek to redefine old relationships with existing contractors while at the same time build new relationships with new actors, outside the narrow group of contractors and politicians that had been the union's traditional allies. Cotter himself reports he has few occasions to

interact with property owners. In general, he is mainly concerned with finding out which construction manager the owner plans to use in order to figure out a strategy to secure the work for his members.

The contrast with the Pipetrades in Portland is best illustrated by the decision of several high tech companies to go non union. In 1994, Sun Microsystems and the Cisco Company announced plans to expand their facilities in the Boston suburb of Boxborough. The structures were the first of many plant expansions planned over several years; expansions that the manufacturers would eventually accelerate in order to meet the increasing demand for their products during the high tech boom of the late 1990s. Both companies had previously used union contractors on such major projects. However, for these particular projects each selected non-union contractors. Cotter felt that the decisions by these two major firms threatened to undermine the union's standing among all Boston area major property owners. As a result, he sought to change the companies' plans by using the unions' leverage both on the various local planning boards as well as a major shareholder (through the union pension plans) in these two companies. Cotter ultimately succeeded in reversing the decision by Sun and Cisco to employ non-union contractors, but the basic message was clear: the local Pipetrades unions had lost their standing among key contractors in the area. Only through old-style pressure tactics could the union reverse the situation. In contrast to Portland, there was none of the sharing of information and close linkages with property owners, engineers, architects or consultants that could have helped the Boston local regain its centrality in the local construction industry.

Notwithstanding a booming market led by public works projects such as a massive new sewage treatment plant and by high-tech and hospital related construction – all of which demand significant numbers of skilled plumbers and fitters – wages for these workers in and around Boston have stagnated (see table 1, below). At the same time, plumbers' and fitters' union membership has merely held steady despite the overall growth in the area's demand for construction workers (see graph 2, below). In short, notwithstanding similar overall trends in the local economies and similar use of tactics, the Boston local was not able to reverse its organizational fortunes while the Portland local was successful at re-launching itself as a key player in the local construction industry. How do we account for these differences?

Explaining the Different Outcomes

One's first instinct would suggest that the outcomes observed between the two locals are, in fact, reflections of deeper, more structural differences between the two cities. In other words, the Portland local fared better than its Boston peer because Portland's economy was stronger and or the demand for

skilled plumbers and fitters greater. Or, perhaps, Portland is a more union friendly environment and thus the challenges faced by its local unions were not as great. Closer examination of these possible explanations, however, reveals their inability to sufficiently account for the divergent outcomes discussed above.

Differences in Demand

Periods of increasing employment are thought to favor unions since tight labor market conditions are believed to strengthen unions and weaken employer resistance to them (Farber and Western 2001; Ashenfelter and Pencavel 1969; McKersie and Brown 1963). In the construction industry, one would expect employers concerned about securing a sufficient supply of skilled tradesmen would turn to the unions more readily, thus strengthening the union's position (Mills 1972a). Were labor market conditions significantly different in these two cities?

Graph 3 shows that unemployment rates in the 1980s for construction workers in general were high in both Massachusetts and Oregon.[4] However, in both areas, construction employment grew in the 1990s as a result of the technology led building boom so that by 1998, the last date for which reliable information is available, unemployment rates in the construction industries in both Portland and Boston were identical at just 7.5%. Anecdotal evidence suggests that historically low unemployment rates have continued through 2000. Yet, it is important to note that construction unemployment rates *were* lower in Oregon by about 4% between 1994 and 1996, two key years for our narrative. Although this 4% difference in unemployment rates surely had some impact on the divergent outcomes of our two locals, it alone can not explain the very significant differences between these two unions in membership growth that took place in these same years. Whereas membership in Portland's local grew by over 50% between 1994 and 1999, growth is the Boston local was just 8%. Moreover, as we will see later, other Portland construction unions (e.g., the Carpenters), also enjoying these same favorable labor-market conditions, were not able to revitalize themselves in these same years.

Legal and Regulatory Context

Another important alternative explanation would hold that changes in the legal and regulatory context might explain differences between the two locals (Freeman 1985; Fantasia 1993; Goldfield 1987; Erlich 1988; Northrup 1991; Allen 1988, 1994, 1995; Linder 1999). In other words, unions

[4] Data on unemployment rates for plumbers and fitters in both cities does not exist. This measure is the best available proxy.

situated in more union-friendly environments will face less severe challenges and thus perform better than their peers in other, more hostile political environments. If anything, however, Oregon could be considered a less favorable political and regulatory environment than Massachusetts. Whereas in Massachussetts, prevailing wage legislation applies across the state, in Oregon, prevailing wages are set at the union scale only where union contractors are in the majority. This makes it easier for non-union contractors to compete in outlying parts of the state. At the same time, barriers to entry into the industry are lower in Oregon since pipefitting is not a licensed trade in that state. Massachusetts requires licenses for both plumbers and fitters. Finally, while both states have a history of electing government officials at both the state and local level that are generally favorable to unions, Oregon's strong environmentalist movement has generated significant political conflicts for pro-labor politicians. Similar pressures have not emerged as strongly in Massachusetts. Political and regulatory contexts do not appear to be a significant determinant of the different outcomes.

Strategies and Union Capacities

In contrast to the economic and political explanations above—both of which generally attempt to explain union decline and the possibilities for renewal as a function of the external environment in which unions are embedded—organizational and social movement accounts focus on union capacities, leadership and strategies to explain the rise and fall of unions in the U.S. (Katz, Batt and Keefe, 2001; Voss and Sherman 2000; Ganz 2000; Frost 2000; Turner 1999; Bronfenbrenner, at al 1998; Graebelsky and Hurd 1994; Goldfield 1987). However, careful analysis of the two cases reveals that strategies and tactics alone also fail to adequately explain the observed differences between our two locals. In both Portland and Boston, the unions responded to the initial surge of the open shop in the 1970s and early 1980s with similar rounds of wage concessions. These had little to no effect on the emigration of contractors to the ranks of the open shop. Both locals then turned to ad hoc, one-on-one bargaining with union and non-union contractors. Essentially, this signaled the unions' willingness to undermine the union scale in exchange for a contractor's promise to staff individual projects with union workers. Ad hoc bargaining only served to further undermine the unions' position as long time signatory contractors became upset with the special treatment afforded their competitors and workers grew increasingly frustrated with the unpredictable wages and working conditions they found from one job to the next.

In the late 1980s, the unions turned to more innovative and even radical approaches. Both unions created targeted funding arrangements that taxed union members' wages to create an endowment that essentially was used to subsidize signatory contractors when bidding against lower-cost open shop contractors. Both unions reformed their internal structures giving their top leaders more decision making authority. Finally, the Pipetrades locals in both cities redoubled their training programs which, in each case, involved the construction of impressive showcase training facilities stocked with the latest equipment. Portland's facilities focus on the needs of high technology manufacturing—especially the clean rooms required for chip manufacturing—while Boston's facilities concentrates on large scale institutional construction projects such as hospitals and university research facilities. In short, both unions employed similar tactics but, as we saw, with very different results.

Social Embeddedness and Its Impact on Union Strategy

Our field research suggests that the key difference between these two local unions is the degree to which they are embedded in their local communities. Indeed, the degree of embeddedness appears to explain the effectiveness of the tactics each union employed. Our many interviews with local union leaders and other local stakeholders revealed that Portland's local purposefully reached out in the late 1980s and early 1990s to a set of actors – in particular, to major property owners, architects, engineers, and building materials suppliers – with whom the union had not previously been in close contact. In Boston, our interviews indicated that although the local Pipetrades unions had strong ties both within the regulatory establishment as well as among major contractors, it did not actively seek to develop ties outside of the narrow group of industry actors with whom it had been dealing for decades. Moreover, the unions' relations with other stakeholders all took place within official arenas: within the context of bargaining, as a result of joint membership on governance committees or as allies before community planning boards. In Portland, interactions between the local union and other actors occurred not just within official arenas but also within a context of cooperative interaction either in developing new skills or with the union playing an intermediary role between community environmental groups and builders.

In order to obtain a more objective picture of the nature and character of these ties, we conducted a survey of major construction industry stakeholders in both Portland and Massachusetts. Specifically, we identified three separate communities of stakeholders: (1) property owners (consisting of organizations that stand to profit from the ownership of developed properties), (2) neighborhoods and communities (those who live and work in the built environment), and (3) builders (organizations that are responsible

for constructing the built environment). Within each of these major stakeholder groups, we identified the following categories of industry participants in order to determine the appropriate sample space based on Burt's (1992) formulation of structural equivalence:

(1) Building trade unions, sub-divided for the purposes of the study into:
    (a) carpenters locals;
    (b) pipetrade locals; and,
    (c) other building trade locals including state and local building trade councils;

(2) Building contractors (including construction managers, general contractors, sub-contractors and specialty contractors);

(3) Government (including state and local government agencies responsible for regulating construction as well as agencies that demand large amounts of construction services such as highway departments);

(4) Major property owners, sub-divided into:
    (a) property managers and developers,
    (b) manufacturers; and,
    (c) universities and health care providers;

(5) Utilities;

(6) Environmental, community planning and neighborhood organizations;

(7) Architects and Engineers; and, finally,

(8) Banks and Lenders.

We compiled a list of the most prominent organizations within each category for each city.[5] Each list contained approximately 200 organizations. We then contacted all of these organizations and ultimately identified 101 of these organizations in Portland and 103 in Boston (204 in total) that were suitable for inclusion within our network analysis. Suitability was determined by whether or not an organization had an actual and on-going relationship to the industry. The list of these organizations became both the survey instrument and the survey universe. Of these, we received 41 responses in Boston and about 52 responses in Portland, for a total of 93 organizations in all – a response rate of 46%.

Respondents within each organization were personally contacted by telephone to request their participation. They were asked to indicate – either over the telephone, though an on-line survey or on a survey delivered through regular mail – which among the organizations listed would they consider to be "in their organization's network." Specifically, they were asked to identify, "which organizations on the list do you or someone else in your organization communicate with on a regular basis." We entered

[5] An in depth discussion of methodology used in defining the boundaries of the network, the design and administration of the survey appears in the methods appendix found at the end of the paper.

these data into Ucinet 5 (Borgatti, Everett and Freeman 1999), a computer program that produces a matrix representing ties within the network. A one (1) indicates the existence of a tie and a zero (0) is given for the absence of a possible tie. The resulting matrix allows us to make several inferences from the data as well as to present the entire "map" of network ties graphically.

Table 2 shows several measures of network centrality for the two Plumbers and Fitters unions. The two reported centrality measures gauge the degree to which actors in a network are connected to one another in different ways. The first, "degree" centrality, is simply a measure of the number of ties to and from the organizations. Our data allow us to measure both "in-ties" and "out-ties", that is, ties that are sent from organizations and those that are received from others. This asymmetry allows us to interpret the degree of centrality in terms of prestige or prominence. The higher the score, the more prestigious the organization is among actors in the network. The second measure, "betweeness", computes the shortest distance information must travel between different actors in the network. Here we are interested in seeing whether or not this information travels *through* the unions in question in order to assess whether or not these unions control or broker the flow of information among actors in the network. The scores are reported as standard deviation units, anchored to the mean score in each city and then divided by the standard deviation, allowing us to make comparisons between the two cities. The results indicate that the Pipetrades in Portland are considerably more prominent and are a more important conduit of information to and from other actors in their city than their counterparts in Boston by at least two standard deviations from the mean.

*** Table 2 here***

Expressed graphically, the differences are even more evident. The responses were pooled into the twelve categories indicated above from which we derived the density of ties among the various groups of organizations in the network. Two groups in the network were considered tied if the density of contacts between the groups was at least 0.5. This indicates that at least 50% of the respondents within one category of actors regularly communicates with organizations in the other category. These data were entered asymmetrically in order to differentiate between sending and receiving ties. Figures 1 and 2 show the "in-ties" to the two unions side-by-side. The figure shows the ties reported by other organizations in the network to the two unions, excluding all other ties in the network in order to highlight the unions in question. The Plumbers and Fitters in Portland receive by far the larger number of in-ties including, importantly, significant levels of communication from major property owners. The locals in Boston, on the other hand, were snubbed by all of the actors other than their fellow building

trades unions. Figures 3 and 4 show ties going in the other direction, from the unions to others in the network. Here too, the differences are apparent. The Portland local reports ties to a much more diverse set of actors in the network compared to the narrow set of contacts reported by the Boston locals.

*** Figures 1, 2, 3 and 4 here ***

These data allow us to conclude that our two local unions were significantly different in the degree to which they were embedded within their local construction industry networks. Seen in light of the narratives presented above, it suggests that the Pipefitters in Oregon were not simply beneficiaries of the high tech building boom taking place around them.

The preceding analysis strongly suggests that embeddedness played a key role in explaining the divergent outcomes of the Pipetrades locals in Portland and Boston. However, a single matched pair case study can not entirely rule out that the differences observed between the two local unions is perhaps the product of some broader difference between Boston and Portland. In order to control for this "city effect", we conducted a second matched pair case study of the carpenters' unions in these two cities.

Carpenters Unions in Oregon and Massachusetts

Pacific-Northwest Council of Carpenters, Oregon District

In the late 1970s, Portland's Carpenters' unions, realizing they faced a significant challenge from open shop forces, attempted to shift to a more aggressive organizing posture. Marc Furman, a young organizer affiliated with the national union, headed up the new initiative.[6] Furman set out to target large rural contractors for organizing with one of the first uses of "bottom-up" organizing techniques that focused efforts on organizing workers directly, rather than starting with their employers first. However, as the state descended into recession in the early 1980s, the union was forced to abandon these innovative organizing efforts in order to focus exclusively on relieving the suffering of their existing membership. At the height of the recession of the early 1980s, several of Oregon's carpenter locals reported 80% unemployment rates. Carpenters were especially hard hit as the lumber industry—the major manufacturing presence in the area—fell into crisis (Wollner 1990).

[6] Furman would later become a pioneer of many of the innovative organizing tactics the union began to employ in the late 1980s and early 1990s.

Desperate to get their members back to work, Carpenters locals steeled themselves for a round of deep wage cuts. This had little effect on their declining membership numbers. As a result, the union began engaging in one-on-one ad hoc negotiations similar to those employed by the Pipetrades locals. Contractors took advantage of this strategy and manipulated wages by playing locals against each other in an effort to secure the best possible deal. As a result, the unions suffered significant losses and their membership grew increasingly frustrated with dramatically variable wages and working conditions. Long-time signatory contractors also chaffed at the favoritism unions manifest towards their former (disloyal) colleagues and current competitors.

By the mid-1980s, major contractors in the Portland area began contemplating a switch to the open shop. Several set up "double breasted" operations that allowed them to compete for work under whichever regime best suited their interests. This development prompted a bitter dispute with the city's main contractors' association leading to a split within that organization. A significant majority of the contractors sided with the open shop leading to a swift erosion in the union's position. The Carpenters union's market share declined from 90% of non-residential construction in 1980 to less than 60% in 1984 (Northrup 1984).

The national Carpenters union was forced to step in to remedy the situation. Marc Furman was asked to return to Portland to develop a new statewide structure intended to mitigate some of the problems the many separate locals within the state had generated. The new organization took full responsibility for organizing workers and coordinating wage rates in different parts of the state. In the early 1990s, the union was restructured once again, this time, as part of a major nationwide reorganization mandated by international union headquarters. This second reorganization shifted control of the Portland locals to a multi-state regional organization headquartered in Seattle, Washington. At the same time, direct representational responsibilities shifted away from local business managers and toward a new District Council director who was appointed by the national president. The new organization renegotiated collective bargaining agreements, incorporating them into a regional pact covering Washington State, Idaho, Oregon and a parts of Northern California.

In part, the regionalization of the union's structure was a response to the increasing regionalization of the industry itself. Whereas in the past carpenter contractors generally stayed within relatively narrow geographic areas, in more recent years, specialized contractors have begun bidding on work throughout the entire Pacific-Northwest. The union's regionalization strategy has been somewhat successful, particularly in the Seattle region where the union has maintained a strong political and economic

presence. However, it has not helped the union in securing work in outlying parts of Oregon or in stemming the union's decline in the Portland area. Instead, contractors and other stakeholders report that repeated changes in leadership and lack of strong decision making authority weakened the Carpenters' union in both Portland and the rest of the state.

Graph 5 shows the percentage of carpenters who identified themselves as members of the union in Bureau of Labor Statistics', Current Population Survey. The graph, which pools responses into several three year time frames, shows that Portland's Carpenters union actually lost market share during the heaviest years of the building boom, before finally gaining somewhat toward the tail end of the construction cycle. Table 3 confirms the erosion of the Portland Carpenters' position showing that carpenters' real wages actually declined during the years of heaviest demand. These data indicate that the building boom that Portland experienced in the mid-1990s did not benefit all Portland area construction unions. For the Portland Carpenters, it looks as if they were unable to take advantage of the market up-turn. To quote one Carpenter leader, Tim Degan, the union was "caught with its pants down."

Interviews with both the Carpenters' union leadership and other informants in Portland indicate that as a result of power battles and multiple internal restructuring processes, the union has alienated itself from many of their most important local partners. Discussions with contractors and union leaders indicate that the union developed a reputation for indecision, as all major decisions were subjected to review by higher levels of the organizational hierarchy. Ultimately, the union decided in the mid-1990s to seek work outside its traditional jurisdictional boundaries, wherever it became available. While potentially serving to bolster the employment prospects of its membership, this action served to further alienate the local union from other regional building trade unions who felt threatened by the Carpenters' encroachment of their jurisdictions.

***Graph 5 and Table 3 here ***

New England Council of Carpenters

The strategies of the Carpenter locals in and around Boston in the 1970s and early 1980s were firmly rooted in a "top down" philosophy of organizing that emphasized maximizing the incentives for contractors to sign-on to the union contract. However, as the union ran into trouble in the mid-1980s, it realized that it had lost its grip over the workforce. Workers openly floated between union and open shop contractors, accepting work with whatever firm offered

the best opportunity at any given moment. Dozens of locals dotted the state, surviving on a diet of public works projects. By the mid-1980s, several locals were embroiled in corruption scandals just as the open shop movement launched an assault on the state's prevailing rate law (Erlich 1990). The union geared up its formidable grass-roots political operation to defeat the measure and undertook significant efforts to root out criminal activity. But the events nevertheless exposed cracks in the Carpenters' public image. It became clear both to the unions' leadership and to other decision makers in the industry that the union's power, even in the city of Boston, had waned.

While the rest of the union was beginning to implement "bottom-up" organizing strategies, the union's Cambridge-based affiliate searched for a new strategy. Rocked by a particularly egregious corruption problem, which resulted in the incarceration of several of the union's leaders, the new leadership decided to engage in a few carefully chosen clashes with a major high-technology employer, Biogen. The company, a leader in bio-technology research and pharmaceuticals, had recently announced its decision to locate its new headquarters and its technology intensive research facilities in the city's new Technology Square neighborhood next to MIT.

The local challenged the company's request for a tax abatement on the grounds that they were not doing enough for the community as a whole. Simultaneously, the local increased its intake of apprentices and began to work closely with the city's many community groups on issues such as community housing and town-gown relations. The union began to ally with constituencies in the city regardless of whether the groups' agenda's had any direct bearing on pending construction projects. When later the carpenter's local decided to take on the city's two major academic institutions—MIT and Harvard, both major land owners and construction consumers in the city—the local could count on solid community support. In hearings before the city's planning board, the union successfully allied with community groups interested in ensuring the universities' buildings were better integrated into surrounding neighborhoods both architecturally and in terms of noise and traffic. At the same time, the union incorporated a call for the universities to use their construction budgets in ways that improved community standards by using highly trained and well paid union carpenters. As a result, the union won commitments from Harvard and MIT to build major projects using union contractors.

When the national union stepped in to implement a new regional structure covering the six New England states under one unified agreement in the early 1990s, the union employed the lessons learned from its prior experiences to its new regional strategy. As regional union official Mark Erlich explained:

> We had enough political leverage so there was an informal message to developers not to pick on us. But, we started to develop that perception early. The owners' only decision is whether to use a union or open shop general contractor... Its all about perception of what is legitimately union and what isn't. It has to do with perception of the strength of the market. We had a few people in the union who realized earlier than most that you had to pay close attention to those perceptions.

The new regional organization has since actively taken steps to ensure that the perception of the union's strength remains embedded in the minds of property owners and contractors alike. Building its reputation of strength in Boston, the union structured its new regional agreement in such a way as to entice contractors in outlying areas into signing the union contract. In addition to loosening restrictions on geographic mobility and blurring strict craft lines, the union requires signatory contractors working outside of Boston to use union labor on all projects regardless of their location. This undermines the practice of "double-breasting" that has hampered unions' efforts in other parts of the country.

At the same time, the regional leadership has carefully cultivated a wide range of relationships outside of the narrow confines of the industry including the state's many universities, community organizations and major property owners. As a result, it is now generally agreed that the Carpenters union in and around Boston is an organization one needs to take seriously if one hopes to build a major project in the area. According to one area contractor:

> If you are going top to bottom, the Carpenters are the most effective union in Boston. In the last seven years the Carpenters have gone through huge changes. There just wasn't the same effort in the 1980s. Then, they didn't care at all about organizing. Dave [Bergeron, Executive Secretary-Treasurer of the New England Council of Carpenters] is an organizing fanatic. He'll do what ever it takes to get someone wrapped up. Boston is locked up for Carpenters, but not the other trades.

Graph 4 (above) confirms this assertion showing that the Carpenters union's market share has increased steadily throughout the 1990s. Table 3 (above) shows that carpenters' wages have reached historically high rates after recovering from the deep recession of the early 1990s. Between July 1999 and June 2001, 466 new contractors signed the union's regional agreement.

The Carpenters Cases in Comparative Perspective

Again, the dominant explanations concerning union decline and renewal do not seem to explain the Carpenters union's divergent outcomes. Unlike plumbing and pipefitting, carpentry is not a licensed trade and thus fewer barriers to workers' entry for this industry exist. This makes it easier for workers to move between industries depending on where their skills are best rewarded. Graph 6 shows construction industry employment as a percentage of total employment in both

Portland and Massachusetts from 1978 to 1999. A high proportion of Oregon's workforce was employed in the construction industry just prior to the crash of the early 1980s. Later, however, the sector gained workers culminating in historically high industry labor force participation in the late 1990s. Boston, on the other hand, starts off with relatively little employment in construction, but builds up as the area enters its economic boom in the 1980s. Labor force participation plunges in the late 1980s before regaining strength in the later 1990s. Taken as an indicator of demand, this chart would suggest that carpenters in both states were in high demand in the late 1990s. However, demand in Oregon was particularly high. In light of these facts, the greater success of the Boston local is especially impressive.

*** Graph 6 here ***

Tactics alone also do not adequately explain the different outcomes between these two cases. In the early 1980s as the significance of the open shop threat became clear, each of the cities' Carpenters unions conceded wage and working conditions in an effort to stem the flight of contractors to the open shop. As the futility of these efforts became evident, both unions made a decision to break away from strong identification with the other building trades in their areas. Previously, the building trades, as a whole, had bargained according to longstanding differentials and patterns and combined forces with respect to government lobbying. Officially, coordination was accomplished through joint membership in an area's Building Trades Council. Informally, however, the unions and contractors' associations had developed pattern bargaining norms that maintained accepted wage differentials among the different crafts and bound locals to strike in defense of maintaining jurisdictional boundaries. In both cities, however, the Carpenters unions walked away from membership in Building Trades Councils and announced their intention to bargain wages separately.

This move away from the other trades reflected changes that had been taking place in the structure of the industry itself. Traditionally, building trade unions have vehemently defended craft boundaries as sacrosanct. A carpenter caught doing work that was considered to be within another union's jurisdiction could expect a bitter protest from the other union's local. The open shop, in contrast, profited from blurring craft boundaries and eliminating some of the inefficiencies that strict craft jurisdictions could generate. Non-union contractors employed lower skilled laborers to accomplish mundane tasks on the work site while maintaining divisions among the most skilled trades for more complicated work. By backing away from their close association with the other trades, the Carpenters in both cities had decided

to meet the open shop on its own terms while, at the same time, tacitly challenging other unions' complacency.

The Carpenters locals in both Boston and Portland also joined the front line of building trade unions throughout the country employing innovative organizing tactics. Among the most important of these tactics was the practice of "salting" in which a local sent out-of-work union members to seek employment at a non-union contractor in an effort to convince the contractors' workers to sign on with the union. The tactic forced the contractor into signing the union contract by threatening him with the loss of its best workers, the chief source of a contractors competitive advantage. The union's organizing efforts reflected a "bottom-up" philosophy that emphasized the importance of organizing the work force as a whole rather than focusing on full employment for existing membership. These tactics found some success. However, neither local has ignored the more generally accepted "top-down" process of attracting contractors to voluntarily sign-on to the union contract. Toward this end, both of the Carpenters unions have implemented policies designed to assist contractors by restructuring hiring hall processes and loosening rules that restrict access to pension and health care benefits for new contractors.

Finally, both unions have undertaken significant internal restructuring efforts. The new structure has made it possible to implement contracts that apply throughout the multi-state geographic regions covered by the regional council. These contracts offer different wage rates for different parts of the region depending on local conditions. More importantly, however, they make it possible for a contractor to take his or her crew with them onto projects that are outside of their immediate geographic location. This should help to attract non-union contractors located in outlying areas that want to break into the lucrative city-based construction markets while at the same time allowing the union's existing contractors to travel with their crews intact as they bid on work outside their typical geographic confines.

Analyzing the network data helps to explain why the various innovations implemented in both locals have been especially successful in Boston. Table 4 presents the centrality data for the two locals derived from methods identical to those reported on above for the plumbers and fitters unions. These data show that the Carpenters in Boston enjoy much greater centrality within the overall network of construction industry stakeholders. On average, the Massachusetts Carpenters are more central to the network of construction industry stakeholders than are their counterparts in Oregon by about one standard deviation. Here too, the graphical representation provides a clear picture of what this centrality looks like in terms of social structure. Figures 5 and 6 indicate that in-ties to the Boston Carpenters include developers, major property owners, community groups and utilities. In-ties to their counterparts

in Portland came only from other unions. Similarly, figures 7 and 8 show that out-ties from the two Carpenters locals differ significantly with the union in Massachusetts reaching out to the entire network while the union in Portland maintains a very restricted set of relationships.

*** Table 4, Figures 5, 6, 7 and 8 here ***

These data, read in conjunction with the cases, indicate that Massachusetts's Carpenters union was not merely lucky, "in the right place at the right time." Rather, as the process of regionalization unfolded within the industry, a new set of important stakeholders emerged. The union's embeddedness gave it access to and information on these emerging stakeholder interests and thus opened up new opportunities for the local to re-position itself as central to the emerging needs of the industry's players. At the same time, the Carpenters' embeddedness has allowed it to negotiate a distinct identity among the roles and identities that are emerging as the industry regionalized throughout New England. Similar processes of regionalization have taken place in the Pacific-Northwest. However, the Carpenters' lack of embeddedness there has kept the union from fully integration into the industry's new configuration. In addition, and perhaps more importantly, the unions' embeddedness has contributed to its new mission of organizing unorganized carpenters. In the 1970s and 1980s both unions gained reputations in their communities as crony organizations whose leadership controlled access in ways that served only to further the narrow interests of themselves and their membership. As both unions turned toward an organizing posture in the late 1980s and early 1990s, they each encountered resistance from communities and from potential workers. By more effectively reaching out to those communities, the Massachusetts carpenters have been able to rehabilitate their image in the community. This has brought them allies in their efforts to secure lucrative projects as evidenced by the union's success at MIT and Harvard. At the same time, carpenters and employers alike are more willing to accept the unions' claims of transformation.

Conclusion

This paper has argued that the ability of building trades unions to reform and re-launch themselves as vibrant organizations depends upon how successful they are at (re-)embedding themselves in their respective social, political and economic contexts. Through an analysis of two matched pair cases of building trades unions in Boston and Portland, we have sought to show that faced with similar challenges and employing analogous tactics, those locals that truly succeeded in re-inventing themselves

(the Pipefitters in Portland and the Carpenters in Boston) did so because they were able to rely on their central position within a dense network of local ties. Their embeddedness in an articulated network of social and institutional ties provided these more successful local unions with strategic information, a better understanding of other local stakeholders' needs, and numerous allies in their struggles to adapt to changes in their industry. The other two local unions (Plumbers in Boston and Carpenters in Portland) were less successful at renewing themselves – notwithstanding genuine efforts at launching new strategies and rebuilding their own organizations – because they had failed to broaden their embeddness within their local communities.

The importance of embeddedness is not unique to our two sets of local unions, nor is it restricted to industries with local, geographic scopes. Its importance has been illustrated for other US unions in other industrial settings (Cobble 1992, Voss 1993, Rubinstein and Kochan 2001, Cobb and Locke 2001, Rubinstein and Hechscher, 2001) as well for unions elsewhere (Locke 1990, Streeck 1997). In other words, regardless of whether the union is operating in a locally bound industry or even a more global market, occupying a central position within an industry's expanded network of stakeholders is key to the union's on-going strength and vibrancy.

This approach to understanding the shifting organizational fortunes of labor unions has significant implications for both union strategy and labor scholarship. For unions it implies a fundamental re-thinking of their current strategies. Rather than focus primarily on a tool-kit of tactics (organizing, lobbying, etc.), unions need also to work hard at rebuilding their place within the networks that define their industry – be they local or global. In other words, US unions need to rebuild their ties to an array of political, economic and social groups in order to regain their centrality within these networks. This is important not simply because it will provide unions with strategic information and potential allies but more importantly because more frequent and open communication/interaction with these groups will stimulate the unions to become more open and responsive organizations. Only in this way will they earn the central role they so desperately need to survive.

For labor scholars, the argument advance in this paper suggests that we too need to broaden our analytical perspective beyond the internal dynamics or vicissitudes of the unions themselves and focus more broadly on the contexts within which the unions are embedded. What unions do, how well they do it, depends as much upon the context in which they are embedded and the linkages they develop with other local organizations and institutions as it does on their own organizational capacities and tactics. This is perhaps even more so today, in a period of rapid technological change and globalization when the

contours of their industries are in constant flux. To paraphrase a line from Tennessee Williams's *A Streetcar Named Desire*, in today's turbulent world, unions, like the rest of us, can benefit for the kindness not just of strangers but of good neighbors as well.

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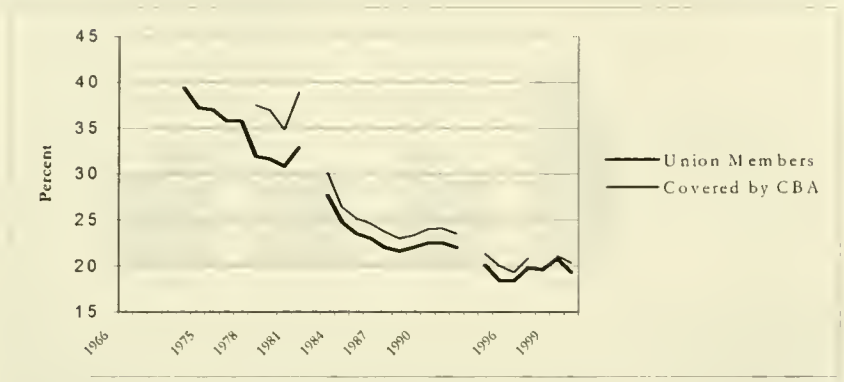
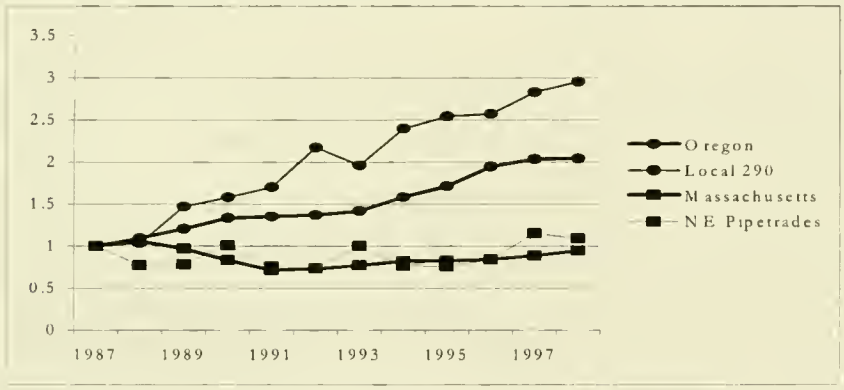
Graphs

Graph 1. Construction Industry Union Membership and Coverage, 1966-2000



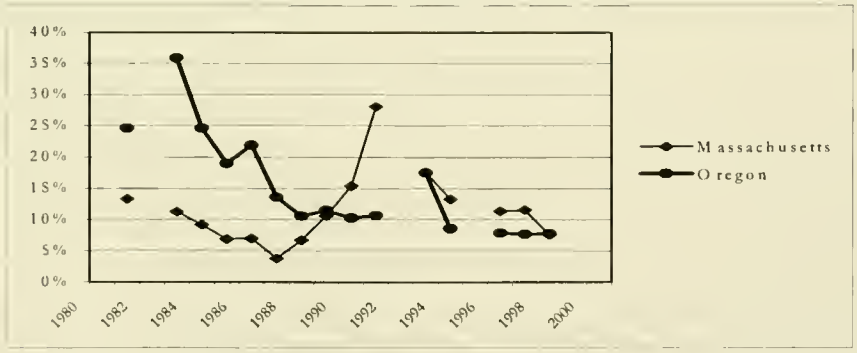
Sources: 1968-1981: Allen (1998); 1983-1992: Hirsch and MacPherson (1993); 1994-2000: Authors' Calculations from BLS data

Graph 2. Pipetrades' Membership Growth Relative to Construction Industry Employment Growth Index: Oregon and Massachusetts, 1987-1998 (1987=1)



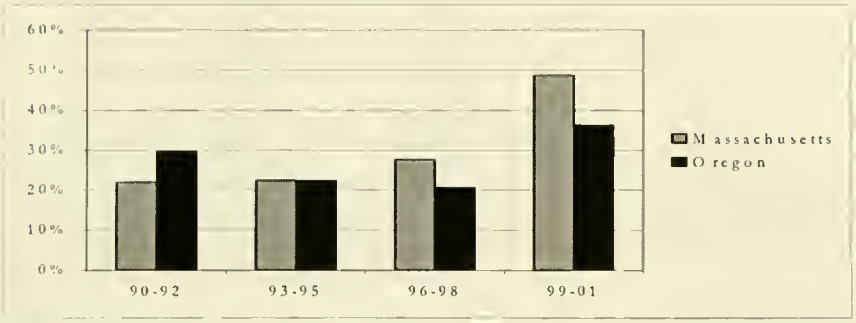
Statewide Employment data are taken from the Bureau of Labor Statistics. Local union membership data are estimates made from LM-2 reports to the U.S. Department of Labor. All data are reported as a growth index with 1987 as the reference year.

Graph 3. Construction Industry Unemployment: Oregon and Massachusetts, 1980-2000



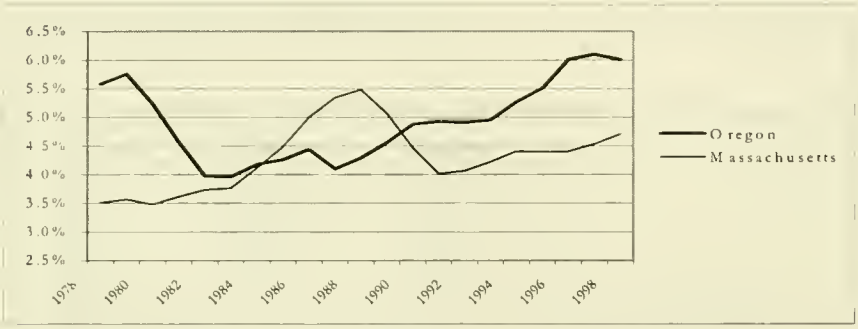
Source: Geographic Profile of Employment and Unemployment, Bureau of Labor Statistics for the years shown. Most recent data statistics can be found at http://www.bls.gov/opub/gp/laugp.htm

Graph 4. Carpenters' Market Share, Boston and Oregon, 1990-2001



Source: Current Population Survey basic monthly survey. The numbers are generated from raw monthly data aggregated into three year intervals (i.e., 36 months per category) with the exception of the "99-01" category which is based on 26 months (all of 1999, 2000 and the first two months of 2001).

Graph 5. Construction employment as a percent of total employment: Oregon and Massachusetts, 1978-1999



Source: Economic Census of the United States
http://www.census.gov/epcd/ec97/us/US000.HTM

Tables

Table 1. Plumber and Fitters' Wages, Massachusetts and Oregon, 1982-1997

Year	Mass.	Oregon
1997	$20,815	$24,330
1992	$20,457	$20,850
1987	$20,525	$20,842
1982	$19,596	$21,931

Source: 1997, 1992, 1987, 1982 Censuses of Construction, U.S. Bureau of the Census, the 1997 data is available at www.census.gov/const/www/index.html. Dollar amounts are constant 1982 dollars, deflated by the regional CPI available for Portland at http://146.142.4.24/cgi-bin/surveymost?r9 and for Boston at http://146.142.4.24/cgi-bin/surveymost?r1.

Table 2. Centrality Measures: Pipetrades Locals in Boston and Portland

Centrality Measure	Boston	Portland
Degree	-0.09	2.21
Betweenness	-0.36	3.35

Values are calculated in standard deviation units. $X = x_i - \mu_c / \sigma_c^2$ where X = value reported, x_i = the reported centrality measure for each organization, μ_c = the mean centrality measure for the city, and σ_c^2 = standard deviation for each city.

Table 3. Carpenters' Per Capita Income, Massachusetts and Oregon, 1982-1997

Year	Mass.	Oregon
1997	$15,063	$12,180
1992	$11,787	$12,756
1987	$15,018	$13,451
1982	$13,077	$10,279

Source: 1997, 1992, 1987, 1982 Censuses of Construction, U.S. Bureau of the Census, the 1997 data is available at www.census.gov/const/www/index.html. Dollar amounts are constant 1982 dollars, deflated by the regional CPI available for Portland at http://146.142.4.24/cgi-bin/surveymost?r9 and for Boston at http://146.142.4.24/cgi-bin/surveymost?r1.

Table 4. Centrality Measures: Carpenters in Boston and Portland

Centrality Measure	Boston	Portland
Degree	2.49	1.63
Betweenness	2.76	1.34

Values are calculated in standard deviation units. $X = x_i - \mu_c / \sigma_c^2$ where X = value reported, x_i = the reported centrality measure for each organization, μ_c = the mean centrality measure for the city, and σ_c^2 = standard deviation for each city.

Figures

Figure 1. In-ties to Pipetrades, Mass.

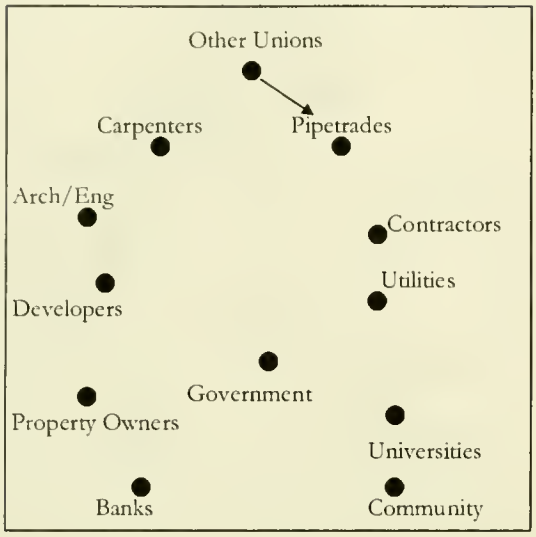


Figure 2. In-ties to Pipetrades, Oregon

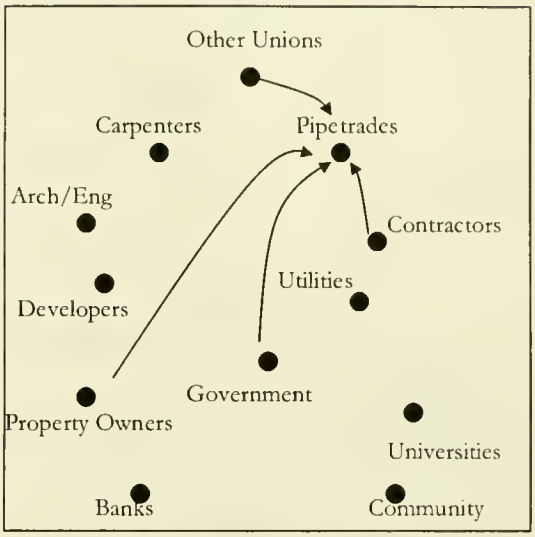


Figure 3. Out-ties from Pipetrades, Mass.

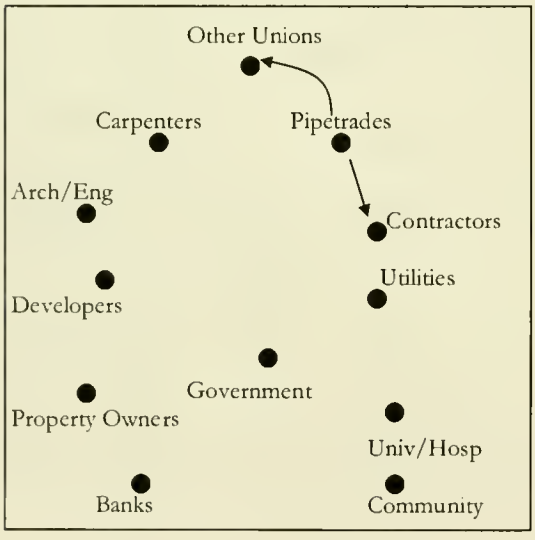


Figure 4. Out-ties from Pipetrades, Oregon

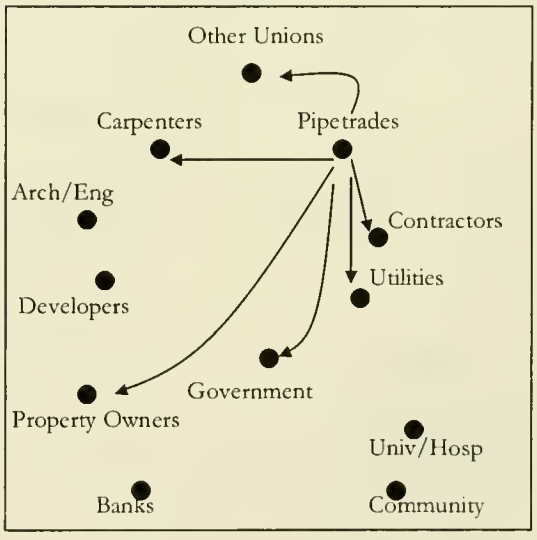


Figure 5. In-ties to Carpenters, Mass.

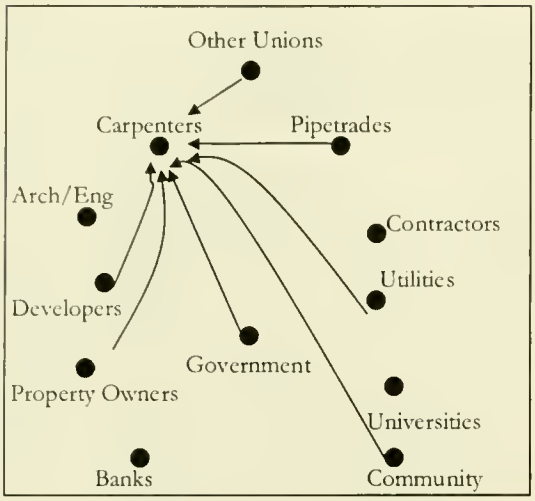


Figure 6. In-ties to Carpenters, Oregon

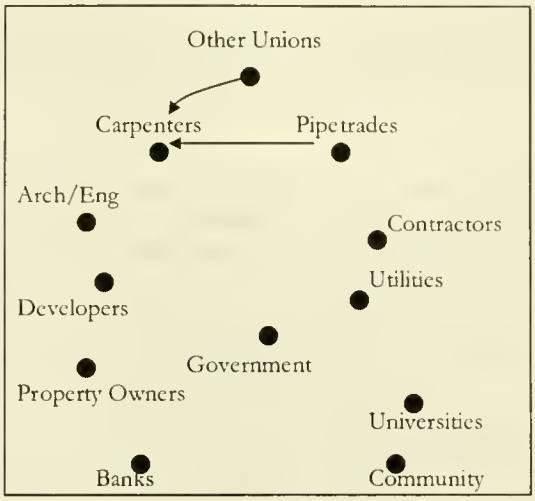


Figure 7. Out-ties from Carpenters, Mass.

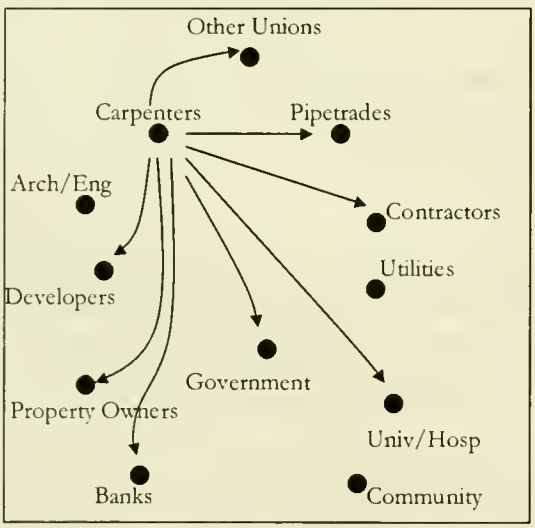
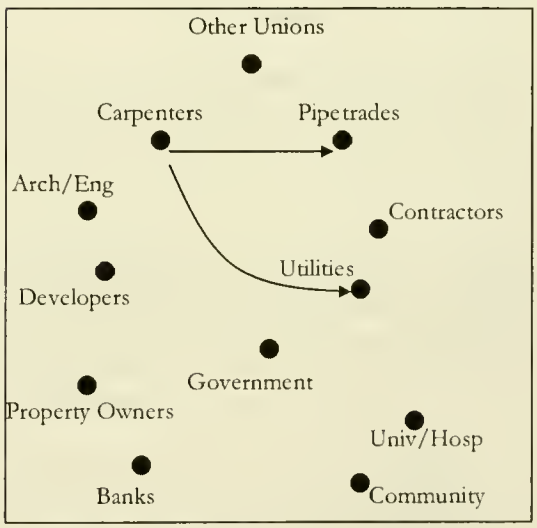


Figure 8. Out-ties from Carpenters, Oregon



Methods Appendix

The network data are based on two site visits to Portland and an equivalent amount of field work conducted in Boston. The field work identified the principle groups that were included in the network analysis. All of the building trade unions in each city received a survey. The others identified in the survey were chosen based on the following criteria:

A. Government organizations. In addition to the large urban areas, a sample of large towns and satellite cities were contacted. We asked to be connected to the official most responsible for construction. Typically, a senior land-use planner, construction inspector or both responded. In addition, a number of state agencies were identified including those overseeing the state's building codes, its highway department and transportation agencies. These agencies were asked to provide lists of organizations represented on any official committees advising the agency head or in any of the major functional areas of the agency having to do with construction.

B. Property owners. The organizations contacted were taken from each of the city's Chamber of Commerce "Book of Lists" which contains information on the city's largest property owners in various sectors. We contacted the twenty-five largest of these in addition to all major universities and teaching hospitals.

C. Banks and Lenders were identified in the same way as property owners.

D. Architects and Engineers were identified in the same way as property owners.

E. Community groups in Portland were contacted from a list maintained by the Multnomah County Public Library. The list for Boston was compiled from the authors' familiarity with the area and from interviewees.

F. Contractors. In Portland, contractors were chosen through contacts resulting from the field interviews with a selection of union and open shop contractors included. Contractors in Boston were chosen from among the largest contractors listed in the Chamber of Commerce "Book of Lists."

The list of these organizations became both the survey instrument and the survey universe. A researcher first contacted each of the organizations by telephone to identify the person who had the best knowledge of the organization's network ties to other construction industry stakeholders. Respondents had a choice of completing the survey by hand (through the regular mail), on the phone, vial e-mil (hard copy) or on-line over the Internet. About half of the surveys were completed on the phone, about one third were completed over the Internet and the remainder were completed either by e-mail or by hand.

These data were entered into Ucinet 5 (Borgatti, Everett and Freeman 1999), a computer program designed to conduct network analyses, which resulted in a square matrix equal to the number of responses squared. Centrality measures were calculated on data from the full network of individual organizations. See Wasserman and Faust (1993) and Freeman (1979) for a discussion of network centrality measures. The figures were generated by partitioning the matrix according to the categories listed in the text of the paper and then calculating the density of ties between cells of the resulting 12x12 matrix.

Interview Appendix

National
Mark Ayers, Construction Department Director, IBEW AFL-CIO
John Dunlop, Professor Emeritas, Harvard University
Robert Georgine, President, Building and Construction Trades Department (BCTD), AFL-CIO
Jeff Grabelsky, Cornell University; Consultant to BCTD, AFL-CIO
Richard Kibbon, Former Chief-of-Staff, Business Roundtable
Stephen Lerner, Organizing Director, BCTD, AFL-CIO
Jerry Rhodes, United Brotherhood of Carpenters' National Organizing Director
Jim Sala, International Organizer, United Brotherhood of Carpenters

Boston
Bobby Banks, Director of Apprentichip Training, Ironworkers Local 7
Mark Erlich, New England Council of Carpenters
Bill Corley, Organizer, IBEW Local
Joe Dart, President, Massachusetts Building Trade Council
Jay Hurley, Business Manager, Ironworkers
Doug Husid, Goulston Storrs, P.C.
Hugh Kelleher, Plumbers Contractors Association
Jim Loud, Contractor
Joe Nigro, Business Manager, Boston Building Trades Council
Dave Powell, Sprinklerfitters Union
Leo Reed, Mechanical Contractors Association
Carl Tower, Project Manager, Kaiser Engineers
Bill Sullivan, Contractor
Ken Willis, Labor Relations Manager, Kaiser Engineers
Six anonymous contractors

Portland
Ted Audland, Contractor, former head of the AGC
Jake Benshoof, Retired Plumber and Community Activist
Don Berry, IBEW
Gerald Bruce, Business Manager, IBEW
Cliff Davis, Member, IBEW
Tim Degan, United Brotherhood of Carpenters, District Council
Eric Franklin, Organizer, Northwest District Council of Carpenters
Marc Furman, International Organizer, United Brotherhood of Carpenters
Sharon Genaci, Environmental Activist
Tim Gothier, President, NECA
Otto Herman, REBOUND, Building Trades Council, Seattle, Washington
Bob Okano, General Contractor
Wally Mehrens, President, Columbia-Pacific Building Trades Council
John Molis, Business Manager, Bricklayers
Jim Moss, Past President, Plumbers' Union
Bob Shiprak, President, Oregon Building Trades Council
Bill Sikara, Representative, Plumbing and Pipetrades Contractors Council
Jim Stuckenschneider, Federal Mediation and Conciliation Service
Matt Walters, Business Manager, Plumbers and Fitters
John Williams, Environmental Consultant