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Hidden Talent: Tacit Skill Formation and Labor Market Incorporation of Latino Immigrants in the United States

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Abstract

This article examines informal training and skill development pathways of Latino immigrant construction workers in two different urban labor markets: Philadelphia, Pennsylvania, and Raleigh-Durham, North Carolina. We find that institutional differences across local labor markets not only shape how immigrants develop skills in specific places but also determine the localized obstacles they face in demonstrating and harnessing these skills for employment. To explain the role of local institutions in shaping differences in skill development experience and opportunities, we draw on the concept of *tacit skill*, a term that is rarely incorporated into studies of the labor market participation of less educated immigrants. We argue that innovative pathways that Latino immigrant workers have created to develop tacit skill can strengthen advocacy planning efforts aimed at improving employment opportunities and working conditions for marginalized workers, immigrant and nonimmigrant alike.

Keywords

Latino immigrants, immigrant workers, construction, skill development, tacit skill, Philadelphia, Raleigh-Durham

Immigrant workers, especially those who are undocumented, face considerable risk of exploitation when they enter the U.S. labor market. Their vulnerability has led to increased labor market advocacy by immigrant-oriented workers centers and related nonprofits. These organizations have initially focused their attention on protecting immigrant worker rights by demanding employers to pay fair wages, adhere to workplace safety regulations, and improve job quality. These advocates now also recognize an opportunity to move into the area of immigrant worker training and skill certification, in the hopes of using immigrant skills as leverage to press for better working conditions and to improve immigrant career development opportunities over time. This entails repositioning themselves as labor market intermediaries that help immigrant workers develop and demonstrate their skill contribution to prospective employers. Yet these same organizations also face considerable resource constraints, which in today's turbulent economic environment are likely to intensify. As a result, it is important for them to identify the most effective and appropriate means of improving access to skill development and certification. An important starting point is to first understand the localized challenges and opportunities to skill development in specific labor markets and communities where immigrants work and reside.

In this article, we shed light on skill-building opportunities and practices among immigrants typically considered low-skilled. We do so by drawing attention to informal training and skill development processes and pathways that immigrants have carved out in residential and commercial construction, an industry that relies heavily on their labor. Our study considers skill development among Latino immigrants in two important but different urban construction markets: Philadelphia, Pennsylvania, where industry training and credentialing processes are tightly controlled by labor unions but closed to immigrant workers; and Raleigh-Durham, North Carolina, a region in a nonunion or "right-to-work" state where union density is extremely low and, therefore, there are fewer institutional obstacles to immigrant participation in mainstream construction markets. Still, formal construction training and apprenticeship programs are sparse in North Carolina and, when they exist, provide limited access for immigrant workers.

We observe that Latino immigrants in the construction industry develop skills differently in different places, which has important implications for the design of local training and credentialing supports. More specifically, we find that institutional differences across local labor markets not only

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shape how immigrants develop skills in specific places but also determine the localized obstacles they face in demonstrating and harnessing these skills for career advancement. To explain the variance that local institutions create in learning opportunities and patterns, we draw on the concept of *tacit skill*: skill that is socially acquired, context-specific, and difficult to articulate. The notion of tacit skill is widely used in scholarship on knowledge development within organizations and in advanced technology industries, but it has rarely been incorporated into studies of the labor market participation of less educated immigrants.

We argue that patterns of skill development vary across context because local institutions structure the very social interactions through which immigrant workers acquire, develop, and demonstrate tacit skill. However, we also argue that far from being constrained by local institutions, Latino immigrant workers draw on these same social interactions to create their own pathways for learning and, in the process, contribute to innovations in local building and training practices. In Philadelphia, we found that Latino immigrants developed tacit construction skill in small groups. Working in teams on small-scale housing construction and rehabilitation sites, they developed highly collaborative practices for teaching one another construction skills that had significant tacit components. Through their joint exploration of construction methods and materials, they were able to elaborate new hybrid building techniques that blended styles they brought from job sites on which they had worked both in the United States and Mexico. Despite their learning and innovation, they had few possibilities for career advancement outside of small-scale residential construction, and they faced significant barriers to entrepreneurship. In Raleigh-Durham, by contrast, we found that Latino workers developed their abilities on an individual rather than group basis and often by establishing direct relationships with skilled immigrants and native-born mentors and supervisors. Although the employment structure offered immigrant workers little scope to explore innovative construction techniques, the advancement pathways it created facilitated opportunities for high-ranking immigrant workers to experiment with new and innovative methods for supervising and training other immigrant coworkers.

This article demonstrates the ways that institutional contexts in Philadelphia and Raleigh-Durham have influenced the social process of tacit skill development. It shows how Latino immigrant workers have responded to localized constraints by creating new practices for tacit skill development and new pathways to overcome obstacles to skill-based advancement. Before presenting the case material, the article opens with a discussion of tacit skill, how it is developed through social interactions at the site of work, and how these social interactions are themselves shaped by localized institutions that structure industrial development and work processes in particular labor market settings. The second section describes the incorporation and status of immigrant workers into the construction industry in Philadelphia and Raleigh-Durham and outlines the methodology we used to analyze immigrant skill development in these distinct institutional environments. The third and fourth sections outline each of these cases, provide a comparison of the impact of local institutions on the opportunities available to Latino immigrants for tacit skill building in both cities, and detail immigrant responses to overcome constraints to learning. Additionally, these sections describe how emergent pathways for skill development have come under strain in the current downturn in construction, but in ways that reflect the local institutional context. The final section concludes with a consideration of the policy implications of our findings and specifically for advocacy groups seeking to support immigrants in demonstrating and defending their skill, especially in light of the current downturn in construction.

Tacit Skill and Immigrant Labor Market Incorporation

To date, studies of the relationship between skill development and labor market participation of immigrant workers have used a very specific, and somewhat narrow, definition of skill. They have tended to equate skill development with formal education, using years of schooling or training certification as a proxy for capacity (Borjas 1985, 1994, 1995; Chiswick 1978, 1986). Moreover, these studies have tended to regard skill as an aptitude that is acquired step-wise, in discrete chunks that workers obtain as they graduate from one level of schooling to the next. Based on this view of skill, the literature has divided immigrant workers into two camps. In the first group are those with formal education equal or superior to the median level of workers in the receiving labor market, who are able to enter labor markets with high skill entry requirements. In the second group are those with less formal training than that threshold, or those who are not able to enter high-skilled labor markets due to mismatch of their skills with those of the receiving labor market (Borjas 1990; Smith and Edmonston 1997). Whereas studies of highly educated immigrants consider the contribution that these workers make to firms and industries, especially the ways they support innovation and the development of new knowledge practices (Saxenian 1999, 2006; Wadhwa et al. 2007; Qin 2007), studies of less educated workers instead emphasize their downward pressure on the wages and jobs of native-born workers (Borjas 2003, 2005; Orrenius and Zavodny 2003; Smith and Edmonston 1997). Rarely considered is the participation of less educated immigrant workers in the development of new skills and new pathways for learning.

While helpful in providing an aggregate approximation of the effects of immigrant participation in receiving labor markets, this binary framework overlooks tacit skill as an

important dimension of skill development. The possibility for tacit skill development presents an important challenge to immigration scholarship that presumes that formal education is the main source of immigrant skill contribution. This assumption is reinforced by the fact that, among immigrant workers with less formal education, the tacit aspect of their skill can render their abilities and contributions invisible. This is because tacit skill is made up of knowledge that cannot be easily articulated or codified. In contrast to explicit aspects of skill that can be transmitted and made visible through language in formal, systematic styles, tacit skill often remains implicit, folded so deeply into everyday work practices that it can virtually disappear. It is "know-how" that is gained through personal experience, through intense engagement with the processes involved in doing a task, as well as with the materials and tools used to complete it. As a result, it cannot always be explained to others who do not share similar experiences. Because it cannot be abstracted from the practices through which it is acquired, on-the-job learning often plays a key role in tacit skill development. However, it is important to also recognize that on-the-job training does not necessarily guarantee tacit knowledge development and sharing. In cases where on-the-job training is simply reduced to a prescribed set of rules or logically deducted sequence of tasks, the trainee may not be given an opportunity to develop deeper knowledge about underlying principles and concepts, as well as complex task interactions. It is for this very reason that scholars of tacit knowledge often point to overlapping, sometimes duplicative, channels of learning that enable workers to not only hear about a process but observe it, experience it, and interpret it with guidance from others (Gertler 2004; Brown and Duguid 2001; Cook and Yannow 1993; Polanyi 1966; Realin 1997; Sennett 2008).

The U.S. construction industry is highly reliant on the tacit knowledge of its workers, immigrant and nonimmigrant alike. So significant is this tacit knowledge to its performance that some industry analysts now classify construction as a "knowledge-intensive" industry and its laborers as "knowledge workers" (Pathirage, Amaratunga, and Haigh 2007). As a result of its dependence on tacit knowledge, the industry, with support from labor market intermediaries such as unions and industry associations, has established credentialing and training programs that not only help workers develop tacit skills but also reveal and defend this potentially invisible knowledge (Palladino 2005). Native-born workers have long benefited from access to formal training and credentialing supports for tacit knowledge development, including those supported by labor unions. In contrast, immigrant workers, and undocumented immigrants in particular, have limited access to these programs; and as a result, their ability both to represent their tacit knowledge and to advocate for the job opportunities and compensation that corresponds to their skill level has been severely curtailed (Fine, Grabelsky, and Narro 2008).

Because avenues for the formal representation of tacit skill are largely closed to them, immigrant workers are especially sensitive to the impact of the two additional attributes of tacit knowledge that make articulating it more difficult and that make the process of transmitting, acquiring, and demonstrating it challenging. The *first* is that tacit skill is woven into the social interactions through which it is taught and shared (Nonaka and van Krogh 2009). To some extent, all forms of learning are shaped by social interactions—for example, the full extent to which students absorb knowledge they read in a book can be shaped by social interactions they have with their instructors or other students in the classroom (Lave and Wegner 1991). Yet in contrast to more codified forms of knowledge sharing, tacit knowledge is impossible to fully extricate from the social processes through which it is developed (Polanyi 1966; Schon 1983). Furthermore, the social exchanges through which tacit knowledge is developed occur through multiple modalities of expression and often rely not only on language but also on physical demonstration and interaction with the materials and tools used for a given task (Bechky 2003).

For the construction industry in particular, bricklaying provides a useful illustration of this social dimension to tacit knowledge development. Mastery of bricklaying results not from classroom training nor from a worker's ability to read and follow written or verbal instructions but, rather, from the accumulated work experience that provides workers with the visual and tactile cues needed to sense important, yet subtle, differences in the consistency of the mortar and its appropriateness for a specific style of construction. To learn this particular craft, a student of bricklaying usually starts by observing and imitating the work of more experienced workers. The student also hones his or her skills by repeating tasks and, in the process, receiving extensive feedback on the execution from supervisors and skilled coworkers. Yet because it is often difficult to verbally articulate the source of a mistake, this guidance often requires additional demonstration with the specific building materials and tools being used to show the student how to achieve quality standards. Ultimately, this iterative and ongoing process of learning enables the student to cultivate an intimate familiarity with the construction materials and an intuitive sense of what is needed to resolve a specific building-related challenge at a given construction site.

As the above example of bricklaying helps to illustrate, tacit knowledge development requires active involvement from coworkers and supervisors who add to the learning process through ongoing guidance. In this sense, important elements of tacit skill are collective and relational rather than individual (Lundvall and Johnson 1994). Consequently, the quality of the social relationships among coworkers and between workers and their employers profoundly informs the tacit skill development process itself (Lave and Wegner 1991; Sennett 2008). Shared language, similar values, and complementary social identities between workers and employers can ease the everyday interactions necessary for

the transmission of tacit skill and influence the intensity and usefulness of knowledge acquired on-the-job (Denning 2001; Brown and Duguid 2001; Wegner 1998). Similarly, the exchanges involved in demonstration, practice, and mastery of tacit skill can strengthen the social relationships through which tacit skill is shared. As the master bricklayer teaches the student to build a wall, the ongoing interactions between master and apprentice—the coaching, questioning, observation, and listening—can deepen their relationship in ways that allow the learning processes to become more fluid and the input provided to become more detailed and specific. In other words, the development of tacit skill and the development of the relationships on which tacit learning depends occur simultaneously (Gertler 2004).

The *second* important attribute that affects the development and demonstration of tacit skill is its embeddedness within specific institutional contexts. From early observations that the skill of craft communities is "in the air" (Marshall 1961) to more recent arguments about learning regions and industrial clusters (Florida and Kenney 1990; Piore and Sabel 1984), the notion that tacit knowledge is shaped by local institutional environments has been well established. Specifically, local institutions—that is, the local labor markets and how they structure and control job access, formal and informal work-based practices, training organizations, and patterns of relationships between firms and the organization of production in the industry—all affect the development of tacit skills in a region (Gertler 2004; Malmberg and Maskell 2006). Because of the ways these institutions structure the social exchanges in an industry, they can support and nourish the creation and sharing of tacit knowledge in an area, or they can hinder and obscure it in fundamental ways.

Arguably, more than any other industry, the construction industry is embedded in the local institutional context. Buildings are constructed in specific places, and the ways they are built are profoundly shaped by the particular institutions that govern those local markets. Construction practices are influenced by everything from the physical landscape and urban layout of a given place, to the kinds of industries that flourish locally and create demand for new buildings, to the financial systems that provide investment capital for the project and to local government codes that regulate building design (Weil 2005; Palladino 2005). These institutions can shape whether construction is approached as a coordination of highly specialized but very separate tasks or practiced as the completion of an integrated project, with interrelated tasks. Institutions specific to the construction industry also tend to be relatively local in their reach: contractors' associations, training organizations, and worker advocates, especially building trades unions, have the greatest sway on local construction labor markets (Palladino 2005; Safford and Locke 2001). They can shape which groups of workers gain access to which types of construction jobs (Paap 2006), and they determine how immigrant workers in particular are incorporated into local construction labor markets and onto local construction job sites (Fine, Grabelsky, and Narro 2008; Milkman 2006).

Equally important, this institutional context can shape which kinds of social interactions for tacit skill development gain traction and how they affect the learning opportunities of the immigrant workforce. Variations in social relations and their influence on skill development processes and opportunities have been studied in considerable detail at the organizational level (Nonaka and von Krogh 2009; Bechky 2003; Brown and Duguid 1991). Less is known about the recursive relationship between local institutional context and social learning processes within an industry. Yet institutional structure—as opposed to just intraorganizational dynamics—can be an important factor in shaping learning processes based on tacit skill development by encouraging or hindering the formation of specific types of social relations and networks (Storper and Venables 2004; Gertler 2004). For the construction industry and its immigrant workforce in particular, this possibility raises several important questions. How might local institutions limit job access for immigrant workers and thus influence the kinds of social relationships to which immigrants have access for learning new skills? How might the local institutional profile of the construction industry inform the size, specialization, and market orientation of firms that create employment opportunities for immigrant workers, and how might this in turn affect social learning practices of this construction workforce? How have immigrant workers responded to the opportunities and constraints for employment created by local institutional structures, and what, if any, pathways for tacit skill development have they elaborated to adapt to the institutional environment that governs the segments of the construction industry in which they work? To answer these questions, careful attention must be paid to the way that local institutions affect the social processes of tacit skill development at work sites in localized labor markets.

The important position of immigrants in the construction industry overall makes these questions more pressing. Over the past several years, the construction industry has absorbed a large number of less educated immigrant workers, especially those of Mexican origin. In 2006, Latino immigrant workers represented more than 20 percent of the U.S. construction industry's workforce, with Mexican laborers accounting for more than two thirds of this Latino workforce (Kochhar, Suro, and Tafoya 2007; Siniavskaia 2005). Moreover, Latino immigrant workers filled two out of three new jobs in the U.S. construction industry in 2006 (Pew Hispanic Center 2007). In some cities and in some sectors, however, the workforce in construction became overwhelmingly, often almost exclusively, Latino. As a result, immigrant exclusion from formal training programs and their reliance on informal—and thus potentially vulnerable and obscured—pathways for skill development have arguably shaped the skill base of important segments of the construction industry in many cities.

Table 1. Construction Labor Markets of Philadelphia, Pennsylvania, and Raleigh-Durham, North Carolina

	Philadelphia	Raleigh-Durham
Labor market structure	Multiple labor markets Latino/Mexican immigrants in separate low-end housing labor market	Single but bifurcated labor market Latino/Mexican immigrants in mainstream market (commercial, institutional, large-scale residential) but relegated to lower-status jobs
Labor-management relations	Highly unionized (approximately 60 percent market share)	Right-to-work (<5 percent union density)
Training institutions	Union-sponsored apprenticeship programs (4-6 years)	Contractor-sponsored training sessions (short modules) Community college courses

Compiled by the authors.

With the construction industry in the midst of a nationwide crisis, the employment gains made by Latino immigrants over the past decade or so have all but evaporated. Latino construction workers have suffered disproportionate rates of unemployment: 35 percent of the jobs shed by the industry in 2007 and 2008 were held by Latino workers (Kochhar 2008a, 2008b). Preliminary data also indicate that Latino immigrants earning the lowest wages in the industry have been hardest hit by recent layoffs (Kochhar 2008a, 2008b). As a result, Latino immigrants are renegotiating their participation in the labor market, as evidenced by the 1 percent drop in immigrant wages in 2008, even as nonimmigrant wages held steady (Kochhar 2008a, 2008b). As the position of Latino immigrants in the industry undergoes a period of intense flux, so too do the relationships through which immigrant workers have been able to acquire and demonstrate tacit skill. However, the downturn has hit different areas in the United States and specific sectors in the industry with varying degrees of intensity. Likewise, the impact of this industry contraction on Latino immigrants' job prospects and skill-building opportunities has been more or less acute depending on where they work, what they do, whom they work for, and whom they work with. These localized impacts on pathways for skill development have implications for future advocacy planning: in particular, they inform the ability of advocacy organizations to use skill building and skill certification as a means to ensure access to employment and improve working conditions, for both immigrant and nonimmigrant workers alike.

Case Study Design and Overview

To examine the ways in which immigrant skill formation processes are informed by the localized labor market institutions, we compare the construction industries of two different metropolitan areas: Philadelphia, Pennsylvania, and Raleigh-Durham, North Carolina. Both urban locations are characterized by rapidly growing Latino populations. In both places, institutional structures inform the micro-processes of tacit skill development and demonstration on the job site. However, the institutional structures that govern these two urban labor markets are diametrically opposed (see Table 1).

In Philadelphia, a reemerging immigrant gateway, the Latino population has been augmented primarily by a growing influx of Mexican immigrants. The initially small Mexican population of less than six thousand in 2000 has more than doubled over the past decade. In 2005, the U.S. Census Bureau's American Community Survey estimated there were more than twelve thousand Mexican-born nationals living in the city of Philadelphia—as such, Mexican nationals accounted for approximately one fourth of the city's foreign-born Latino population in 2005. Informal estimates by social service organizations now put that number at greater than twenty thousand.

Similar population trends exist in Raleigh-Durham, North Carolina, a new immigrant gateway. According to the 2005 U.S. Census American Community Survey, it had close to seventy-six thousand Latino residents, the majority of whom (70 percent) were Mexican-born. This represents a 44 percent increase in the Latino population since 2000, with even larger increases in the Latino and Mexican-born population occurring between 1995 and 2000. In both regions, some newcomers are established Latino migrants moving from other places in the United States, like California, Texas, and Illinois. Others are new immigrants from Central America, namely, Honduras and El Salvador, and from nontraditional sending communities within Mexico, such as Mexico City.

In the city of Philadelphia, labor unions dominate the construction industry: according to estimates by city government and industry associations, unions held about 60 to 70 percent of the market share in downtown Philadelphia in the mid-2000s, and as reported by local government and industry actors, as well as press reports, union contracts continue to cover most high-end residential construction and nonresidential building (Teague 2008). Building trade unions provide extensive training to their members through formal apprenticeship programs. For the most part, Latino immigrants, along with women and nonimmigrant minority workers, have been shut out of Philadelphia's union apprenticeship programs and unionized job sites (Mayor's Advisory Commission on Construction Industry Diversity 2009). Instead, Latino immigrants have been relegated to largely informal labor markets for housing construction and renovation. The greatest concentration of informal and semiformal housing

construction and renovation in Philadelphia has occurred near the downtown area. Recent Mexican immigrants, who have overwhelmingly settled in adjacent neighborhoods just to the south of downtown, have dominated that labor market. As such, the formal channels for skill-based advancement opportunities in what is essentially a separate and inferior labor market have been extremely limited overall.

The Research Triangle Park area has benefited from a robust economy driven by technology and professional service companies and supported by immigrant labor, especially in low-end consumer services and the construction sector. Latino immigrant construction workers have not only helped to build large-scale housing developments targeting the area's professional class but also have been instrumental in constructing the commercial and industrial landscape of the state. North Carolina is a nonunion or "right-to-work" state, where union membership is negligible, constituting only 4 percent of the state's workforce (Bureau of Labor Statistics 2009). With no union contracts governing their hiring practices, construction contractors, both commercial and residential, have been enthusiastic employers of Latino immigrants. While the U.S. Census Bureau indicates that Latinos account for one third of the state's construction workforce, recent estimates generated by immigrant advocacy groups claim Latino immigrants actually make up around 70 percent of the state's urban construction workforce (E. Martin 2004; Hummel 2006). Still, the widespread incorporation of immigrants into Raleigh-Durham's mainstream labor markets does not automatically translate into similar participation rates in formal training programs. Rarely are Latino immigrants enrolled in construction-related community college programs, by far the most important source of formal training in the state. Nor are they represented within state or federally funded industry apprenticeship programs that target ethnic minorities in the state. Compounding this skill development challenge is the growing level of task specialization among subcontractors that hire immigrant workers. This limits the need for training investments and essentially allows contractors to treat their immigrant workers as virtually interchangeable and easily replaceable. It is not surprising, therefore, that many immigrant construction workers in Raleigh Durham are relegated to low-status, high-turnover positions, despite having skill sets that far exceed their job requirements.

Despite obstacles to formal skill formation in the Raleigh-Durham area of North Carolina and Philadelphia, Pennsylvania, we find that new avenues for informal skill development have emerged among the immigrant workforce. The participation of Latino immigrant workers in these urban construction industries has matured to the point where ethnic and workplace networks have begun to serve as important settings for informal training in construction skills. On construction sites where immigrants have made up a significant portion of the workforce, immigrant social networks and workplace interactions appear to have served as important vehicles for job access, informal mentoring and training in new skill areas, and the development of new construction knowledge. How they do so, however, has been profoundly shaped by the institutional context in which they function.

To study how the institutional structure shapes social processes of learning and thus tacit skill development among Latino immigrant workers, we combined a micro-level investigation of immigrant learning processes at specific work sites with a meso-level analysis of the institutions that govern the construction industry in both cities. Over a period of roughly two years, from late 2006 to early 2009, we conducted close to 70 in-depth interviews with industry leaders, employers, and government officials in both sites. Interviews explored industry structure, the role of institutional actors in shaping production, and most saliently the formal and informal processes of skill development available to immigrant and native workers in the industry. The actors we interviewed were selected based on interview analysis and, in the case of smaller employers, through snowball sampling. In Philadelphia, we completed more than 100 interviews with Latino immigrant workers, primarily Mexican in origin, including three focus group sessions where we brought groups of immigrants together to reflect on their work practices collectively. In Raleigh-Durham, we completed 105 interviews with Latino workers, the overwhelming majority of them of Mexican origin. In both cities, the interviews explored employment trajectories, skill development practices, and working conditions on the job site. We visited numerous construction sites in both locations and observed work practices as they unfolded. Additionally, we examined employment trends for immigrants in the construction industry in both locations, drawing on census data, archival material, and spatial mapping to complete our analysis.

Team-Based Learning in Philadelphia

We turn first to Philadelphia to examine the relationship between institutional structure and social learning processes within the city's immigrant construction workforce. The city of Philadelphia launched a redevelopment plan in the late 1990s designed to stop the steady decline of the downtown area. While successful, the implementation of this plan caused a wave of gentrification to move through the dense stock of row homes just south of city center (Adams et al. 2008). Building trade unions dominated the large commercial and luxury residential construction projects sparked by the Philadelphia's Center City initiative, and the renovation and rehabilitation of dilapidated housing stock was left to small-scale contractors or "flippers," professionals with day jobs who remodeled homes on the side as a speculative investment. The renovations were largely informal, with few contractors obtaining all the required licenses for housing remodeling and for employment of construction workers.

The influx of Mexican immigrants, largely undocumented, who came to Philadelphia beginning in the early 2000s to take jobs in the city's booming downtown restaurant industry, provided a ready pool of labor for this sector.

In the absence of formal institutions regulating employment in housing construction and renovation in Philadelphia, Mexican immigrant workers could access the industry through multiple points of entry. They were recruited at the restaurants where they worked as busboys and kitchen staff by patrons who were renovating homes; they secured construction employment through social networks based on kinship or forged through interactions in the neighborhood where they lived or at the restaurants where they had worked; they got jobs on housing renovations by walking up to job sites on their way to their shifts in the downtown hospitality industry and asking if another man was needed.

Small teams of between two and six immigrants worked at each construction site. With employers at most job sites absent, arriving in the morning to provide instructions and supplies for the day's work and then leaving to work at their day jobs or supervise construction at higher-end residential suburban areas, the teams enjoyed a high level of autonomy and managed their own work processes. They tackled all aspects of the housing construction, from demolition to detail finishes. The teams also tended to be semipermanent, remaining intact for the duration of the housing construction job, each lasting anywhere between a few weeks to a few months, and then reconfiguring with different members at new sites. During the course of a year, Mexican workers would circulate through multiple job sites and work with different teams, made up of workers with different skill sets, at each one.

Team Strategies

At the work site, the teams of Mexican immigrant workers engaged in collaborative processes of teaching, learning, and developing tacit skill. With no access to formal training, they were forced to rely on the skills they brought with them to the job site from previous housing construction jobs, as well as from construction jobs they held before migrating. Indeed, the vast majority of the immigrants in housing rehabilitation brought significant construction skill with them from Mexico. According to our interviews, approximately 70 percent of Mexican immigrants reported working in construction or in related fields, like architecture or engineering, before settling in Philadelphia. Immigrants self-organized at the work site such that the worker with the greatest expertise in the task being completed would take charge for the duration of the assignment. The temporary team leader guided work processes, trained his colleagues, and set the quality standards. Immigrants we interviewed explained that the role of team leaders most closely resembled that of a mentor rather than a supervisor and involved an open-ended style of coaching, with influence stemming from skill rather than from hierarchical authority derived from employer-defined organizational structures at the workplace.

These teams, with their flat hierarchies and rotating leadership, fostered a tenor of social interaction that promoted intensive mentorship and collective experimentation. Because the social exchanges at the job site occurred through the actual practice of building and were centered on construction materials and tools, they promoted the rapid increase of tacit skill. As workers engaged with one another in relation to the properties of framing wood, drywall board, mortar, and tile, they developed the tacit—impossible to fully articulate—sense of how to manipulate the materials to achieve certain results. The interactions at the job site also supported the experimental application of Mexican construction methods—quite different from U.S. styles in their reliance on concrete for a wide array of building components—to U.S. building tasks and materials and allowed for the repeated processes of trial and error that effective blending required. Workers explained, for example, that they drew on their tacit knowledge of how to mix concrete "by feel," acquired in Mexico, to develop mortar mixture especially suited to repointing (repairing) damaged brick walls. Exchanges between workers who had been masons in Mexico with workers who had carpentry experience in the United States led to the translation of the tacit skill of leveling concrete blocks in constructing a wall "by sight," by relying on observations of the relationship between different building elements, brought from Mexico, to U.S.-specific tasks like wood framing for drywall. Their collective experimentation thus allowed them to elaborate hybrid practices that were wholly new with respect to both the U.S. labor market where they were currently employed and Mexican contexts where they had worked before migrating.

Three new forms of construction knowledge elaborated through interteam exchanges of tacit knowledge proved were especially useful for housing renovation. First, the hybrid techniques that workers developed by merging U.S. and Mexican construction skill in creative ways proved more appropriate and cost-effective for construction that had to blend seamlessly the older construction materials present in the structure, like plaster walls, with newer prefabricated materials, like drywall sheets. Second, the ability to translate an insight or skill from one task area to another, cultivated through multiple cycles of collaborative problem solving and tacit skill sharing, was critical to the everyday on-site adaptive strategizing necessary to remodel Philadelphia's aged and idiosyncratic 19th-century row homes. Immigrants highlighted this area of skill in particular, contending that employers favored them because, in contrast to most U.S. workers, they were thoroughly "*mil usos*" or "jack-of-all-trades." Third, the deep tacit understanding of the relationship between tasks and materials immigrants developed by working together on multiple tasks at different sites enabled

them to participate in planning the sequencing of renovation steps—a critical skill when one construction task, such as building a wall, can undermine the work completed on another area of the house, such as laying a floor.

Limitations to Advancement

Employers recognized the value that immigrant teams brought to their construction sites and often remunerated them for task completion that surpassed their quality, cost, or time expectations. However, just like the organization of work on the job sites, the compensation was made to the team as a whole, as opposed to any individual worker. Indeed, employers reported that they were often unable to discern which worker or workers in the team had spearheaded improvements in work product, finding it challenging even to discern which of their workers had the most expertise in a given area. Furthermore, employers rarely intervened in job site management and almost never promoted one worker over the others in the team, be it through wages or supervisory responsibilities. Wages remained within a narrow band for all workers regardless of skill level, and job ladders were nonexistent.

Other avenues for career advancement were closed to Mexican immigrants. Entrepreneurship was not an option for immigrant workers without legal status—the situation of the undocumented Mexican immigrants who made up the virtual total of the workforce in central-city housing renovation. Immigration policy in the state and county made it impossible for them to obtain even the most basic permits necessary to run a construction business, most significantly a driver's license. Under Pennsylvania law, applicants who could not show proof of a valid social security number could legally not hold a driver's license, and in 2008 and 2009, immigrants interviewed reported an increase in incidents during which they were pulled over by the police and their licenses were checked. Thus, driving to job sites or to pick up construction materials meant risking costly vehicle impoundment or deportation.

Mexican immigrants also reported that venturing beyond the informal housing construction and rehabilitation market in central Philadelphia for employment was difficult and risky. Not only were high-end residential and commercial construction dominated by unions, which did not allow undocumented immigrants onto their job sites or into their apprenticeship programs, but building trades monitored larger nonunion sites downtown for the use of immigrant labor and were quick to report suspected violations of immigration law. These factors confined Mexican immigrant workers to positions as employees for small-scale contractors in low-end housing rehabilitation, concentrated in a specific neighborhood just south of downtown Philadelphia, and their job security was tightly linked to that industry's survival.

Coping with Crisis

Any examination of the U.S. construction industry today, and immigrant skill development experience, would be incomplete without additional reference to the economic recession of 2008 and 2009. In 2008, the U.S. construction industry lost approximately 750,000 jobs, and the unemployment rate almost doubled from 6 percent at the end of 2007 to 13 percent at the end of 2008 (Bureau of Labor Statistics 2008). Although Latino immigrant workers still represent close to 20 percent of the labor force, they have been hard hit by this downturn (Kochhar 2008b). As a result of this downturn, the construction industry is undergoing major adjustments: its level of business activity has dropped sharply, and the mix of projects has shifted from residential to commercial and industrial; the institutions that regulate the industry, from government to unions to contractors associations, are all reassessing their role, especially in relation to strategies for supporting industry recovery; and the makeup of the construction workforce is changing in an ongoing manner.

In Philadelphia, residential construction and renovation was hit especially hard by the burst of the housing bubble. Between 2007 and 2009, housing prices in Center City and adjoining neighborhoods dropped by 16 percent, and home sales dropped by half (Board of Revision of Taxes—Philadelphia 2009). Housing renovation in center-south Philadelphia all but ground to a halt by 2009. For Mexican immigrants working in housing rehabilitation, this outcome meant that stable employment opportunities evaporated. In follow-up interviews conducted in April 2009, most Mexican construction workers reported that they had not worked for several months and were lucky to get a day or two of work a week finishing up housing renovations started before the industry's collapse. They also reported that when they found construction work, they generally worked alone on the job site, finishing a small, defined "odd job." Instead of working for small-scale contractors and flippers, they found employment through their spouses, employed as housekeepers in homes whose owners then hired their husbands, rather than through the networks they had previously relied on. When they did work with other immigrants, the collaborative exchanges and the informal mentorship prevalent in Philadelphia's residential construction had disappeared. Workers guarded their skill jealously, as it transformed in the wake of the crisis into a competitive advantage that could give them access to the few remaining jobs in housing construction and renovation. The group processes for tacit skill building that thrived in Philadelphia's residential construction sector disintegrated completely.

Moreover, it was the very tacitness of the skills that workers had developed during the housing boom that made them especially vulnerable as individual agents in a labor market turned ruthlessly competitive. Because tacit skill is difficult

to articulate and defend, demonstrating skill to potential employers in industries related to construction, like building maintenance, proved difficult, if not impossible. Furthermore, much of the tacit construction knowledge immigrants used at the job site was held in the social relationships through which it was developed: workers problem-solved together and relied on their interactions to come up with improved methods of resolving the challenges housing renovation regularly presented. Those relationships were severed with the industry's collapse, and as a result, workers could not draw on the skills, such as collaborative improvisation and experimentation, embedded in the collective practices they had developed. All institutional remedies to this situation were closed to immigrant workers: they had no access to industry institutions, like licensing and apprenticeship programs, that could make their tacit skill evident and that could serve as formal proxies for the informal interactions through which they developed building skill. With their deep construction knowledge invisible, they were reduced to the position of unskilled workers in the labor market, and the on-the-job experience they had acquired over several years in residential construction became irrelevant overnight.

Individualized Learning Pathways in North Carolina

In contrast to Philadelphia, Latino immigrants in Raleigh-Durham have been a visible and dominant force in mainstream commercial and residential construction markets. As a result, we did not find the same geographic concentration of employment opportunities as in Philadelphia. Rather, Latino immigrants moved freely across the region's construction landscape and sometimes used Raleigh-Durham as a home base for accessing construction jobs in other, more remote regions of the state. While Latinos had been involved in smaller housing rehabilitation projects and often helped forge a seamless link between these two distinct markets, their solid footing in commercial and commercial-scale residential construction provided an opportunity to compare across skill formation experiences and the social processes that give them meaning and shape.

To understand how skills have been developed by Latino immigrants in North Carolina, it is first necessary to understand their pathway into mainstream construction markets. Two interrelated institutional factors and their historical origins are especially important. The first involves a high reliance on nested subcontracting in commercial and large-scale residential building, which has resulted in the finite or detailed division of labor within and across construction tasks. Starting in the late 1970s, construction industry associations representing general contractors and industry suppliers in North Carolina used labor outsourcing or subcontracting as a conscious and extremely successful strategy to keep unions out of the state (Mark and Grabelsky 2005; Woods 1990). Through subcontracting, general contractors were able to curtail labor costs by relying on specialized subcontractors to hire workers in multiple local labor markets. This practice allowed general contractors in North Carolina to focus their attention on materials sourcing and construction management responsibilities and to reduce their direct role in skill building. As they removed themselves from the skill development of their workforce, support for cross-training across tasks waned in the industry as a whole. Starting in the 1980s, subcontracting in many nonlicensed trades, such as carpentry, masonry and concrete setting, moved towards even greater subtask specialization. It was common to find separate subcontractors performing different subspecializations, from framing the building, to installing the windows and doors, to hanging the drywall. This move towards a highly detailed division of labor ultimately undermined traditional career pathways based on broadly defined construction crafts (i.e., stonemasonry or carpentry) and made it especially difficult for employers to recruit native-born workers to the industry.

Adaptive Strategies

For Latino immigrant workers in Raleigh-Durham, this shifting institutional context shaped the particular strategies available to them for developing and revealing tacit knowledge. On the one hand, subcontracting lowered barriers to entry for less educated immigrant workers and, thus, enabled them to penetrate mainstream construction labor markets in the early 1990s. Still, as employees of highly specialized subcontractors, immigrants faced considerable risk that the skills they brought with them and those they developed on-site would remain invisible and undervalued. As in Philadelphia, Latino immigrants often arrived in North Carolina with considerable construction experience and knowledge (Hagan, Lowe, and Quingla 2009; Lowe, Hagan, and Iskander 2010). In fact, close to 50 percent of the immigrants we interviewed had worked previously in construction jobs in their sending communities. To enhance opportunities for skill demonstration and development in Raleigh-Durham's construction industry, they embraced two intersecting strategies.

The most common strategy we identified was that of job jumping, whereby a Latino immigrant would jump from one construction employer to another, sometimes moving between several employers over the course of a single year (Hagan, Lowe, and Quingla 2009). Close to 50 percent of those interviewed had jumped employers while working in North Carolina's construction industry. Job jumping served multiple purposes. For immigrants who arrived with broad-based skills, jumping allowed them to tap their skill versatility as a potential bargaining tool for garnering incremental wage increases. To some extent this facilitated economic mobility, though hourly wage increases with each jump usually amounted to less than one dollar.

Job jumping, however, was also used by immigrants to identify employers and work environments that were more supportive of skill-based advancement. With this in mind, some immigrants jumped back to an earlier employer that they believed offered stronger training and career development support. By jumping across multiple employers, especially when they initially entered the labor market, Latino immigrants admitted they were able to identify and access these better alternatives. Some skilled immigrants would even jump across multiple subcontractors at the same commercial construction site. This allowed them to stay on-site longer and thus demonstrate a broad array of skills to project superintendents who were in a position to potentially offer employment with a general contractor. While few immigrants claimed to secure jobs this way, those that did received high wages and a range of employee benefits, from health care to subsidized formal education at community colleges.

Job jumping often reflected individual initiative, though our interviews illustrated that in some cases this strategy was facilitated through established ethnic social relations. This usually entailed help from a skill broker or intermediary—that is, an established immigrant worker who used his industry status, often as foreman or superintendent, to recruit other immigrant workers (Lowe, Hagan, and Iskander 2010). Intermediaries were typically in a position to supervise and train new hires and could also make recommendations about worker promotions and raises. In some cases, they even negotiated independent side projects for their work crew. These projects typically involved small-scale housing renovations and were completed on weekends or evenings and often resembled work types already described for the Philadelphia case. As in Philadelphia, Raleigh-Durham side projects were distinct from specialized mainstream construction work, and thus, immigrants working on these jobs felt they had greater control over the entire work process. Immigrants also indicated these projects provided an opening for them to make recommendations about building techniques and demonstrate their breadth of knowledge to clients and supervisors. In this respect, side projects in Raleigh-Durham played an important role in immigrant skill development and demonstration.

Advancement

At first glance, it might appear there was considerable overlap between these strategies and those identified in Philadelphia. After all, the strategies we documented in North Carolina also promoted coethnic interaction and thus created potential for collective skill development and knowledge sharing. Still, there were important differences. In North Carolina, immigrants described coethnic work relations that were far more hierarchical. When immigrants jumped to the "right" employer or supervisor, they gained an opportunity to move up an internal career ladder. Still, they admitted they entered at the bottom rung of the ladder. While skill intermediaries helped to open up this career pathway, they often took steps to defend and protect their position in the hierarchy. We learned of cases where established immigrants actively limited internal advancement to higher rungs, forcing skilled coworkers to eventually jump to another employer. Low profit margins reinforced this practice and limited opportunities for real profit sharing.

Employers, for their part, took steps to reinforce this workplace hierarchy. As one immigrant worker explained it, "The thinking of my employer is that each aspiring foreman has a responsibility to teach a *subordinate*." At another company, a superintendent who assigned supervisory roles to immigrant workers acknowledged there was initial resistance on the part of some immigrant workers to rise up above their coethnic workmates. To reinforce their assigned leadership role and, thus, the workplace hierarchy, the superintendent would resort to writing "foreman" in indelible black ink on the hardhats of Latino immigrants he had recently promoted.

While this hierarchical system encouraged immigrant career advancement, it also reinforced a very different kind of workplace social order that limited the adoption of flexible leadership roles, team-based knowledge sharing, and frequent job rotation embraced by immigrant work crews in Philadelphia. The handful of cases involving teams similar in quality to those we found in Philadelphia were made up of small groups of immigrants with lengthy job tenures at a general contracting or top-tier subcontracting company. The job-jumping strategies mentioned above, however, made team formation of this type extremely rare. Additionally, because of the high level of subtask specialization in North Carolina, there was limited scope for immigrant workers in North Carolina to work as intensively together to develop innovative building techniques at their mainstream construction worksites.

Still, immigrants in Raleigh-Durham did make innovative contributions to the industry. As immigrants moved up the career ladder and gained access to higher-level supervisory positions, they helped to improve training techniques for expediting the incorporation of new immigrant workers into the industry. As one example, an immigrant foreman discussed his use of training videos as an important visual aid for training workers under his supervision. While these videos were initially intended to illustrate safe use of construction equipment, they also provided a visual demonstration of specific commercial construction techniques. Through innovative training and supervisory practices, established immigrants have helped to move more immigrants through the construction career ladder and also have prepared coethnics for entrepreneurial opportunities by providing a model for organizing and managing large groups of workers. Of late, immigrant workers have tapped this skill resource to create independent business opportunities that offer greater flexibility in a rapidly changing construction labor market.

Coping with Crisis

As in Philadelphia, the current economic crisis has had a profound and disorienting impact on immigrant skill-formation strategies and opportunities in North Carolina. However, the points of vulnerability that have emerged for immigrant workers are distinct and context-specific. In North Carolina, construction industry employment estimates for the period of January to May 2009 were 17 percent lower compared to the corresponding period for 2008. For March 2009—the month with the largest decline in employment from the previous year—there were at least forty-six thousand fewer construction jobs compared to what was available a year earlier.[1] While it is difficult to document the full effects of this job loss on the immigrant construction workforce in Raleigh-Durham, recent interviews with construction supervisors and immigrant workers in the region indicate that the strategies that immigrant workers once relied on to acquire tacit knowledge are now under considerable strain.

Interestingly, many immigrant workers with commercial and institutional construction employment prior to the crisis have managed to hold on to those jobs. This stands in contrast to high rates of job losses for immigrants who worked almost exclusively in residential construction markets prior to the start of the crisis period. Still, even within the relatively protected commercial subsector, the downturn has had a significant effect on the strategies immigrants can use to navigate this new economy, and this has implications for continued skill-based advancement. With the slowdown, job jumping in commercial construction has essentially come to a standstill. One contributing factor is rising competition for new jobs, as immigrant workers displaced from residential construction activities seek entry into commercial labor markets. Immigrants already employed in commercial building are therefore reticent to give up a stable job, knowing it might be much harder for them to return to that same employer or work crew. At the same time, job jumping in this environment has been financially riskier, even if switching employers potentially generates greater opportunities for acquiring and advancing skills. This is because new hires at most companies, regardless of prior industry experience, have been the first to suffer a cut back in hours or experience a temporary layoff.

At the same time that job jumping has slowed, opportunities to pick up side project work have been greatly curtailed. As in Philadelphia, this partly reflects a decline in home-flipping activities. But even as small-scale renovation work has picked back up in recent months, fueled in part by lower construction costs that are encouraging more home owners to tackle renovation projects, rather than build or buy a new house, less of this work has been performed on the side. Rather, contractors displaced from large-scale residential markets have made themselves available to work on these projects full-time, at low cost, and with shorter guaranteed completion times. For immigrant workers employed by these firms, this provides an important employment stabilizer and even creates opportunities for immigrant entrepreneurship. Some residential contractors that have been forced to lay off part of their workforce have even encouraged entrepreneurship by helping immigrants spin off new business establishments. They have done so by selling their former immigrant workers' used construction equipment, tools, and transportation vehicles at generously discounted rates. Still, for immigrants primarily employed in the commercial sector, this has meant the loss of once-fluid connections between mainstream and secondary construction markets that provided not only an important channel for tacit skill development and demonstration but also a source of career satisfaction (Lowe, Hagan, and Iskander 2010). The question now is whether strategies like job jumping will give way to new forms of informal training—and perhaps even greater adoption of Philadelphia-style team work—through emergent immigrant entrepreneurial networks and with less frequent changes in workplace relations.

An Opening for Advocacy

Skills play a central role in enabling immigrant workers to navigate fast-changing U.S. labor markets. In contrast to traditional immigration scholarship, which has long presumed skills derive primarily from formal education, our case studies illustrate that less educated Latino immigrants often migrate with considerable experience and knowledge that they transfer to their U.S. jobs. Moreover, they continue to develop their skills while at their U.S. jobs and, in the process, explore new construction techniques and carve out new pathways for immigrant upskilling. Still, these skills are often hard to articulate and defend as a result of their tacit nature and a related recursive relationship between social learning processes and local labor market environments. This, in turn, can limit immigrant labor market participation and increase employment vulnerability during periods of industry adjustment.

Despite the 2008 to 2010 economic downturn, Latino immigrants are expected to retain a significant share of construction jobs in the United States. The full extent of the current economic crisis remains unknown, and therefore, it is hard to fully predict what will happen to immigrant skill development opportunities in the long run. It is important to remember, however, that the innovative practices documented in this article emerged in response to earlier pressure points and constraints and, thus, this current crisis may provide a related source of inspiration and innovation. In fact, the wide coverage of this current economic crisis, and especially its impact on construction employers, not just workers, provides an opening for immigrant advocacy organizations to position themselves as workforce intermediaries. If well structured, intermediation of this type could elevate the labor

market status of immigrant workers. By making the skills and skill-development pathways of immigrant workers visible, workers may be able to open formal channels for skill-based advancement, while at the same time it may provide a long-term solution to an intensifying industry-wide skill shortage.

Even as the construction industry experiences a sharp downturn, it is facing a serious skill deficit that may represent an even greater challenge for the construction industry in the medium and long term, and that, without structured intervention, may affect the industry's ability to fully recover from the 2008 to 2010 contraction. Since the 1970s, the industry has been facing a steady decline in the availability of skilled labor, but in recent years this shortfall has reached emergency proportions given an aging and rapidly retiring native-born workforce. In 2001, 73 percent of construction companies participating in a national survey reported moderate to severe shortages of skilled workers (Construction Industry Institute 2003). Moreover, industry analysts continue to predict a serious deficit of skilled construction workers in the coming years: although the 2006 industry estimate of 1.5 million missing skilled workers is currently being revised, the consensus still remains that there will be a significant shortfall of skilled workers (Davidson 2007; Glover and Bilginsoy 2005). The growing demand for green and zero-energy buildings has further accentuated this skill gap. Specifically, these newer construction technologies require a robust understanding of the relationships between construction tasks: materials used in "green building" are often prefabricated, high-precision, and integrate aspects of construction that may have generally been considered separate and unrelated.

The two main institutional trainings in the building trades—union-sponsored apprenticeship programs and contractor-organized instruction—have been slow to respond to this pressing skill need. Preliminary evidence suggests that contractors are simply rehiring skilled workers and are investing little in new worker training, preferring instead to spend money on overtime (Lee 2009). Unions, for their part, have struggled with coordination requirements of emergent building technologies, including prefabricated construction, that undermine traditional craft-based divisions and skill specializations (Safford and Locke 2001; Palladino 2005).

With the participation of Latino immigrants likely to remain strong in the construction industry and with formal training institutions failing to resolve the skill shortage, there is an opportunity for informal avenues for immigrant skill development to become more central to the skill base in the industry. These pathways not only provide new and innovative methods for recruiting and training less educated immigrant workers but, as evidenced through the Philadelphia work team model, also represent alternative forms of work organization that encourage greater cross-task coordination and problem solving. Immigrant advocacy organizations can play an important role in formalizing and developing these pathways.

This potential has been demonstrated in other immigrant-heavy industries—namely, health care, hospitality, and manufacturing—in which immigrant advocates have contributed to innovative training, credentialing, and job placement programs that not only create viable career pathways for immigrant workers but, through upskilling, also improve the competitive standing of the industries that employ them. Successful examples include Project Quest in San Antonio, Texas, the Garment Industry Development Corporation in New York City, and the Culinary Training Academy in Las Vegas, all of which create pathways for skill-based advancement for less educated immigrant workers (Lautsch and Osterman 1998; Conway and Loker 1999; Rothman 2002). These immigrant advocacy organizations differ from standard supply-side training programs insofar as they establish strong relationships with regional employers through which to shape hiring and advancement practices that support immigrants and other low-wage workers. In this regard, they function as workforce intermediaries, seeking to promote immigrant career development and job security by directly engaging with local employers (Harrison and Weiss 1998; Fitzgerald 2004; Giloth 2004). Additionally, by partnering with labor unions and community colleges, these intermediaries are helping to enhance immigrant access to more traditional labor market institutions and training supports (Lautsch and Osterman 1998; Greenhouse 2009).

Given the large representation of Latino immigrants in the U.S. construction workforce, there is an opportunity for other immigrant and labor advocacy organizations to position themselves as workforce intermediaries that defend immigrant skill and skill-development processes. As one example, immigrant-oriented worker centers that initially provided work-related legal support for construction day laborers are now deepening their role in local labor markets by certifying skills that immigrants initially acquired through informal means (Fine 2006; N. Martin, Morales, and Theodore 2007). By demonstrating to construction employers the value of harnessing existing pathways to immigrant skill development, advocates can also position themselves as important allies of traditional training institutions, namely, construction unions and community colleges. In cities like Philadelphia, building trade unions have traditionally balked at initiatives to promote the hiring of nonwhite and especially Latino immigrant workers (Teague 2008; Adams et al. 2008). In Raleigh-Durham, nonimmigrant employers and supervisors display a determined reluctance to invest in the training of their Latino workforce, in part because they have traditionally turned to community colleges to address their formal training needs. With these institutions in mind, local advocacy strategies could begin by making the tacit skill of marginalized immigrant workers more explicit, enabling both employers and workers to capitalize on that knowledge. Building trades unions have long recognized and defended the relationship between tacit skill development and enhanced worker bargaining power (Palladino 2005). Their use of skill as a vehicle to secure better working conditions

and higher wages has been the centerpiece of their labor relations strategy. The effectiveness of this approach is evinced most explicitly in wage levels: the remuneration, for example, received by construction workers in Philadelphia who are unionized is about double the rate received by nonunionized workers with comparable skill levels (Building Industry Association of Philadelphia 2009). Therefore, strategies that encourage collaboration with unions and related labor market institutions may be essential for translating immigrant skill into higher wage returns and enhanced worker bargaining power. In addition, such partnerships could ensure immigrant construction workers are viewed as an asset, rather than threat to a revitalized U.S. labor movement (Milkman and Wong 2000; Fine, Grabelsky, and Narro 2008).

To position themselves as effective workforce intermediaries, however, advocacy groups need to first be aware of the distinct role that local labor market environments play in mediating immigrant learning opportunities and obstacles. Attention to the interaction between institutional structure and processes of tacit skill development will ensure advocacy planning efforts focus on specific institutional gaps, resources, and partnerships that may have the most impact on immigrant skill building and industry absorption of those skills.

Ultimately, by drawing attention to and deepening the social networks and social exchanges that make up informal training pathways in particular urban settings**,** immigrant advocates can inspire formal training institutions of all stripes, including unions, community college, or contractor-sponsored programs, to reinvent themselves to accommodate this segment of the workforce and scale up their formal support for immigrant skill development. Stronger support for informal pathways for skill building among immigrant workers also has the potential to strengthen skill-development opportunities for other historically marginalized workers, especially African Americans, women, and those who cannot afford the financial sacrifice that participating in traditional training program often requires. In this respect, we believe the informal pathways initially created by immigrant workers also represent a powerful resource for developing more inclusionary training policies and programs.

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