grant congregations as well. Furthermore, it appears that male competition for status-enhancing staff positions in the face of postimmigration loss of status is one of the major reasons for the prevalence of such schisms. See Won Moo Hurh and Kwang Chung Kim, "Religious Participation of Korean Immigrants in the United States"; and Eui Hang Shin and Hyung Park, "An Analysis of Causes of Schisms in Ethnic Churches: The Case of Korean-American Churches."

28. While "parish" is the official designation for these immigrant religious gatherings, I am using the term "congregation" because I believe that this is a case of what the sociologist R. Stephen Warner calls the "de facto congregationalism" that is prevalent in the American religious open market. In "Work in Progress toward a New Paradigm for the Sociological Study of Religion in the United States," Warner argues that religious organizations in the United States favor the face-to-face, locally controlled congregational form over geographically based units—such as parishes—designated by higher ecclesiastical authorities. In Kerala, membership in a parish is determined by where the member lives. In the United States, immigrant Orthodox churches seem to be organized around the congregational model, since churchgoers like Mr. Simon choose among different options.

29. These songs are sometimes written by members of the community in the United States using the tunes of secular film songs from Kerala. Additionally, songs from the growing Christian popular music scene in Kerala are also used. Having songs set to the latest tunes, with instrumental accompaniment, becomes a matter of pride among the caroling groups from the different congregations, as they try to outdo each other in the caroling and in the annual Christmas ecumenical program, where the Kerala Christian congregations in the area have the opportunity to represent their respective singing talents.

30. For example, in 1994, the donations from caroling made up one-third of St. George's total income for the year (1994 year-end financial report presented at the General Body meeting).

31. I analyze this incident at length in "Caroling with the Keralites: The Negotiation of Gendered Space in an Indian Immigrant Congregation."

32. See note 10 for an example of how class differences play a part in potential marital alliances via the different rates of dowry for each class.

SIX

Net-Working for a Living

Irish Software Developers in the Global Workplace

Seán Ó Riain

In 1992, I took the path followed by many young Irish people at that time and emigrated to the United States. In my case I left Dublin for Berkeley, California, to get a Ph.D. in sociology. Within a year or two I found myself beginning to study the Irish software industry from six thousand miles away in Silicon Valley. Through interviews with managers in Silicon Valley companies with operations in Ireland, I investigated the dynamics of foreign investment in the Irish software industry. E-mail correspondence with managers of Irish companies in Dublin directed me to their Silicon Valley offices, where I learned the basic history of the emergence of an Irish-owned software industry which was now itself becoming increasingly globalized. These contacts and other Irish people I knew in California put me in touch with Irish software developers working in the Silicon Valley area.

In the mid-1990s many of the young emigrants of the late 1980s and early 1990s were returning home, encouraged by the booming "Celtic Tiger" economy. In early 1997 I followed these global connections and returned to Ireland to carry out more detailed research. It was time to live for a while inside one of the global workplaces that constituted the industry I was studying. I spent twelve weeks as a technical writer and sometime tester on a software development team in USTech, a United States transnational corporation well established in Ireland. During this time I participated fully in the work of the team and wrote a user guide for our product which was installed on the system as on-line help for users of the system. I sat in the same cubicle as the rest of the team, attended team meet-

ings, and interacted closely with them on a regular basis on decisions regarding the user guide. After an initial period of suspicion of my motives, which may return once they read this chapter, the team members were very welcoming and helpful to me. Indeed, the regular flow of contract personnel in and out of the team meant that I became a relatively well-established team member.

By the time I came to work at USTech in Ireland I had made many of the connections and followed many of the transnational career paths which were such a big part of my coworkers' experience. The five long-term members of the team were employees of USTech but were working on a contract designing a product for Womble Software, a spin-off from USTech headquarters in the United States. My own life in the social sciences had mirrored the experiences of my friends on the Womble team—educated on different sides of the same college campuses, working at home and abroad on emerging meanings and logics, one foot in local culture, the other in the global economy. Software had seemed like a distant world until my ethnography revealed the many aspects already familiar to me from life in the Irish knowledge-worker diaspora.

During the time I spent with the Womble team, I uncovered a characteristic set of structures and dynamics of this global workplace. Although we sat at the center of a wide array of local and global connections and of multiple career trajectories, the cubicle space we shared came to dominate our lives. The experience of local space was intensified for us, even as we sat in a global workplace. Time too was intensified as the project deadline became the defining element of our work and, to some extent, social lives. Out of this intensification of time and space emerged cooperation, innovation, and career success, but also burnout, individualism, inequality, and pressures on family. It is these dilemmas and tradeoffs that constitute the "contested terrain" of the global informational workplace.

It is 4:15 in the afternoon. On the wall of the software test group in the Irish offices of USTech, a prominent Silicon Valley computer company, there are four clocks. At the moment they show that it is 8:15 A.M. in Silicon Valley, California, 10:15 in Austin and Fort Worth, Texas, and 11:15 in Montreal, Canada. Silicon Valley has just "opened for business," and the software developers and managers in Ireland begin a hectic few hours of discussion with their American counterparts. The row of clocks evokes a smoothly working global economy, held back only by time zones,

and a software operation which seamlessly manages a variety of transnational connections.

I hurry downstairs, as I have a conference call to the United States at 4:30 P.M. Irish time (8:30 A.M. their time in Silicon Valley). Thirty minutes later I am sitting in an open-plan cubicle, along with five members of a software development team. Employed by USTech, they are developing a software product for a Silicon Valley start-up company called Womble Software. I have been writing a user guide for the product and am deep in discussion with Jane, the technical-writing editor in Silicon Valley, and Ramesh, an immigrant to the United States from India and the "chief architect" of the program, who is in St. Louis in the heart of middle-America. As my manager comes into the team area, I put the conference call on the speaker phone. Now the whole "Womble team" can hear the conversation.

As the conversation unfolds, so does the mime drama around me, as the team reacts to the flow of global communication into this cubicled "local" space. When Ramesh suggests adding new features (creating more work for the developers around me), there is an explosion of displeased sign language, including a variety of abusive gestures directed at the speaker phone. Since Ramesh can hear everything on our end, this pantomime is conducted in complete silence. I have a hard time not bursting out laughing. When Jane points out to Ramesh that it is difficult to write a user guide when the final screen designs for the software program have not been decided upon (a common complaint within the development team two weeks before the product is released), there is an explosion of mimed cheering and barely controlled laughter around me.

This is just another day in the global informational workplace, a workplace which is home to increasing numbers of employees around the world. The dominant image of these workplaces is that of places lifted out of time and space, places where communication and innovation are free from the drag of local cultures and practices and untainted by power relations. Robert Reich argues that new information and communication technologies make it possible and even necessary to reorganize firms into "global webs" and employees into global telecommuters.[1] For Reich these webs operate smoothly, destroying constraints of space and social structure, moving in conjunction with the ever-circling hands of the clocks on the USTech wall. The global workplace is "lifted out" of its temporal and spatial contexts and becomes a "pure" space for communication based on shared rules of interaction and understanding.[2]

Others argue that this perspective is too benign. The speeding up of the global economy destroys local space—the fact that Ramesh and the Womble team can participate in the same conversation at the same time means that they essentially share the same social and economic space, despite the physical distance between them. Time annihilates space, melt-

ing away "solid" local places into the "air" of the global economy.[3] This is not a neutral process, however, as the once autonomous local space of the worker is increasingly dominated by global corporations and the ever more rapid pace of economic life under capitalism.[4] Ramesh's presence—a phone call, e-mail message, or plane trip away—undermines the autonomy provided these workers by their local space.

The Womble team is certainly connected to other global workplaces—including Silicon Valley and St. Louis on this particular afternoon. They also experience the pressure of the global economy through the demands of Ramesh for new features. However, local space is not destroyed by these global connections. The Womble cubicle takes on a culture of its own, manifested in the mimed hostility to Ramesh's suggestions, but also in the information-sharing, problem-solving, and solidarity-building within the team on an everyday basis. In fact, the demands of the global economy for increased flexibility and specialized learning actually make the local context and interactions of the global workplace even more critical. Efficient production and constant innovation require the construction of shared physical spaces where workers can interact and communicate on a face-to-face basis and where shared goals and meanings can be created and maintained.[5]

Global connections bring the pressures of the world economy into the heart of workplaces such as the Womble team cubicle. However, these pressures actually make local space and social context all the more important. The speed-up of time and the extension of social space across physical distance in the global economy do not destroy space but in fact intensify the impact of space in constituting successful global workplaces.

However, this does not herald a return to an era of workplaces dominated by localized social relations. This is because the importance of local social relations to innovation creates a dilemma for the global corporations that rely on this innovation. The local character of their work teams is essential to their efficiency but also poses a problem of regulating such localized relations from a distance. Ramesh may be aware that his proposals are not meeting with happy grins on the other end of the phone, but he is also unable to directly regulate the team's behavior because of his distance from the team and his only partial incorporation into the social space of the team. The typical managerial answer to this dilemma of control in the global workplace is to attempt to control the instrument of speed-up and pressure within the global economy—time itself. The politics of the contemporary workplace is increasingly the politics of time.[6]

The most important instrument used to control time in the global workplace is the project deadline. Although Ramesh cannot control the everyday behavior of the Womble team, the parameters within which the team can operate are set by the demands of the deadline: the team members have a great deal of autonomy in how they work, but the supervisor looking over

their shoulder is time itself, with every decision measured against its impact on meeting the deadline. Ramesh's requests for new features are not considered on their technical merits but on the basis of their impact on the team's ability to meet the deadline. Even as the importance of space is intensified in the global workplace, so too is time, in its manifestation as the dominant mode of control in these workplaces. Global workplaces are subject to a process of what I call time-space intensification.

This chapter explores in detail the characteristic structures and dynamics of the global workplace under conditions of time-space intensification. The first part of the analysis shows the dilemmas posed for innovation in the global workplace due to the pressures placed on it by the intersection of the high-mobility careers of software developers and highly mobile software firms. It documents how intense cooperation in localized workplaces makes it possible for such highly mobile workers and firms to forge an alliance in the pursuit of innovation and profit. A tension persists within this structure, however—a tension between place-bound cooperation based on group solidarity and individual careers based on high rates of mobility between firms and places. This tension is reconciled through the dynamics of the workplace, which are analyzed in the second part of the chapter. The period prior to the project deadline is one of team solidarity and cohesion, while the post-deadline phase is characterized by the fragmentation of the team as they use their social networks to position themselves for the next moves in their careers. The globalization of the information technology (IT) industry is seen to result not in a virtual economy but in a global industry organized around and through certain key places and regions. Within these global workplaces, relations among workers constantly cycle through phases of cohesion and fragmentation, as worker solidarity is mobilized for purposes of innovation but disarmed by the structure of careers in the labor market. The globalization of knowledge workplaces becomes an object of tension and conflict in those workplaces; globalization is neither simply an ever-expanding process of increasingly pure communication and innovation nor an inexorable advance of the dominance of capital. Power relations in these workplaces are forged out of the interplay of mobility and place and of time and space, forms of interplay that are examined through the rest of this chapter.

This chapter argues, therefore, that as the workplace stretches out across national borders local spaces such as the Womble team cubicle become all the more crucial to the operation of the global economy. Overcoming the constraints of international time differences allows organization across time and space, but poses new problems of control from a distance—problems which are solved by the intensification of time through work-team deadlines. Global informational workplaces are characterized not by the disappearance of time and space as realities of work life, but by their increasing importance and intensification.

DILEMMAS OF THE GLOBAL WORKPLACE

Neither do these workplaces emerge tabula rasa onto the global stage, as a response to the prompting of the global market. In fact, the Womble team is the outcome of state development strategies, changing corporate structures and strategies, and the emergence of new industries organized around knowledge creation. Indeed, the routine phone and e-mail arguments between Ramesh and the Womble team would bring a glow to the heart of many industrial development agency officials in Ireland. The formation of connections to the global economy by attracting foreign high-technology investment has been the cornerstone of Ireland's industrial policy since the late 1950s. The connection to the United States has been particularly crucial—over four hundred United States companies have located in Ireland, and some three-quarters of jobs in electronics and software in Ireland are in foreign-owned companies. Through the 1970s and 1980s, transnational electronics and computer hardware firms located primarily low-level functions in Ireland and developed few links to the local economy.[7] Many of the transnational corporations used Ireland as an "export processing zone" within the European market, taking advantage of low tax and wage rates and Ireland's position within European Union tariff barriers. Irish plants were at best weakly integrated into the core activities of the corporate parents, as the typical Irish operation's activities were routine and relations with the parent hierarchical.

However, the past five to ten years have seen a shift in the nature of the activities and the character of some of the foreign investment in Ireland.[8] Encouraged by the state industrial development agencies, many hardware operations began to grow software development centers as the information technology industry moved toward a focus on software and software became the strategic technology for these corporations. Local managers, usually Irish-born, were able to carve out strategic positions for their operations within the parent companies, although their position always remained precarious. In cases such as USTech, local managers often developed relationships with customers well before discussing these new lines of business with their colleagues at headquarters. In recent years, subcontracting and business partnership relationships between United States and Irish firms have expanded and the two economies have become increasingly closely integrated. Indeed, the apparent shortage of computer skills in Silicon Valley was one of the reasons why the Womble software contract went to the USTech Ireland office. Companies such as USTech Ireland were still limited by their place in the international corporate structure and often still concentrated on testing, support, and consulting software work rather than on the strategic software development tasks. However, many were able to develop small- to medium-sized software development teams, closely integrated with the parent's operations.

USTech is well established in Ireland, having located there over fifteen years ago and becoming one of the early success stories of Irish industrial policy. For many years it was one of Ireland's primary computer hardware production operations, with a reputation for high quality. The hardware manufacturing operations of USTech Ireland were dismantled, with massive layoffs, in the early 1990s, leaving local management scrambling for the operation's survival and turning to a complete reliance on the local pool of software skills. Their links to the global economy have subsequently diversified, with a proliferation of customers, partners, and internal corporate sponsors replacing their previous model of reporting directly to a single office in the United States. The software development contract for Womble reflects this change, as there was little opportunity within the previous corporate structure for such arrangements.

Womble Software itself is a perfect example of the "global web" corporate structure, which Reich argues is becoming the norm. Formed as a spin-off from a large hierarchical corporation, the company is partly owned by the four founders, partly by USTech itself, partly by a major customer, and the rest by a venture capital fund in Silicon Valley. It has no more than fifteen employees of its own. The development team is based in Ireland and is officially contracted to provide software development services to Womble. The screens for the program are conceptualized by Ramesh, but all the development work necessary to turn them into computer graphics is done in a small graphic-design house just outside San Francisco. The helpdesk staff, which users reach if they call with a problem, is staffed by the trained employees of a helpdesk contracting company. The technical writers who write the on-screen help for users are all hired on a contract basis. In place of more rigid, hierarchical organizational structures, we have a shifting web of connections forged into a relatively fleeting alliance.

Mobility and Connections in the Global Labor Market

Womble is not only, however, the prototype of the "global web" organization but also conforms to a new model of computer-industry careers. In this model, the dominant metaphor of IBM's promise of lifetime employment has been replaced by the image of the freewheeling Silicon Valley engineers who expect little from their employers and will jump ship for more money or more challenging work at the drop of a hat.[9] Both of course are stereotypes, but there is more than a grain of truth in the emergence of cross-firm careers as the dominant pattern in software companies in Silicon Valley and in Ireland.[10] These trends are intensified by a shortage of experienced personnel in most countries' software industries.[11] Certain skills are in particularly high demand—including the Unix, C++, database, and Java skills of the employees in the Womble team. The variety of local and global connections of the team reinforces the tendency toward mobility by providing the channels of information about new opportunities and the social con-

tacts for facilitating moves to those emerging areas. Negotiating the commitment of highly mobile employees becomes the critical dilemma facing software firms, a dilemma which is addressed in the following sections of this chapter.

In industries such as software, the typical career pattern now involves a number of moves between organizations, and there has been a clear shift from internal labor markets to job-hopping between firms. When employees stay with the same firm, their tasks and level of responsibility change on a regular basis. Furthermore, professional migration into both the United States and Ireland has been increasing, with transnational intrafirm and interfirm careers expanding. As can be seen from the career histories described above, the high mobility career pattern, with employees feeling little attachment to the employer (or, conversely, the firm to the employee) has become a reality for these particular software developers. Even in a still "semiperipheral" region like Ireland, the careers of such software developers have converged quite significantly with those of their counterparts in the leading high-technology regions such as Silicon Valley or global cities such as New York and London. A survey of 250 software firms in Ireland in 1997 revealed that a quarter of the firms had had employee turnover of 25 percent or more in the previous year.[12]

These trends were evident in the experience of the Womble software team members. Including myself, the team consisted of six people during the time I was there. Séamus, the team leader, had been at USTech for seven years. In that time he had held four completely different positions—working as a computer test engineer, software systems test engineer, information systems support, and software development team leader. The rest of the team had been assembled over the prior six to eighteen months. Conor, six months out of college, still received job postings from his college career-counseling service every two weeks. If he follows the industry pattern he will most likely leave USTech after eighteen months or so, when another software company will be glad to pay him well for his skills and experience.

Jim and Paul were employed on a contract basis. Dan had also been a contractor and took a pay cut of almost 50 percent when he accepted a permanent post in order to get a mortgage from the bank. Paul's history is one of a "software cowboy," using a series of lucrative short-term contracts to see the world without being tied down by business, social, or personal obligation. Jim and Dan have pursued a different path, having at times been employees, contractors, entrepreneurs, or several of these at the same time. The lines between employer, self-employed, and employee begin to blur in such careers.

Transnational experience is a major part of the developers' careers. Dan is originally from Hong Kong and came to Ireland to study, subsequently pursuing a career in software. Almost all the contractors who worked with the team while I was there had emigrated at one point or spent a significant

amount of time working on contracts abroad. Indeed, it is the contractors who are most openly dependent on mobility for their career advancement. They are usually brought in for their quite specialized skills and are often given tasks working on relatively self-contained parts of the system being designed. Their need to communicate with other team members may be minimal, although their ability to do so remains a critical part of their effectiveness. Sometimes, contractors stay with a team for a relatively long time. Jim, a contractor, had been with the team for longer than the two permanent staff and had successfully resisted efforts to make him take a permanent position. Indeed, he was the *de facto* deputy team leader. Mobility across organizational, employer/employee, and national boundaries has therefore been central to these workers' careers and is understood by all to be the background to workplace interactions and relationships.

Mobility is also the team members' key bargaining chip with their employers. One lunchtime, Conor, Michael, the group manager, and I ended up sitting together. We had somehow got onto the topic of the difficulty of getting people for the jobs that were available within USTech. Conor went into great detail on the job offers he had received on leaving college and on the ever-improving job market for graduates, until Michael quietly finished his lunch and left. Conor turned to me and asked: "What did you make of that? I wanted him to know there are plenty of other jobs out there. What I didn't say is that I've been getting job offers every two weeks through the college."

Mobility is the dominant career strategy within the software industry as a whole and within the Womble software team. There are also, however, constraints on the mobility system for both the firm and the employee. The firm will sometimes try to get contractors with crucial product knowledge to become permanent employees so that their knowledge is kept within the organization. In the Womble team, Dan had gone permanent because he had to get a mortgage, whereas Jim, already having a mortgage, was able to resist the efforts of the project managers to have him become a permanent employee. Nor are employees completely free to exercise their mobility. Companies are reluctant to pay employees if they threaten to leave, as they are likely to set a series of threats in train which may spiral out of control. However, companies will make exceptions on occasion as long as they can avoid having other employees learn about them. In general, the threat of mobility serves as a latent possibility, which keeps the company's attention focused on getting training for key employees, increasing their pay, and so on, in order to forestall ideas of leaving.

Employees must also be careful not to get a reputation for being unlikely to stay at a company. "If you look at a CV and see that someone has moved every nine months or so, you have to wonder if they'll stay here any longer than that. But if they stay two or three years, then you know they will contribute something" (Séamus). The degree of demand for a developer's par-

ticular skills is the critical factor that affects his or her bargaining power through mobility. "When I was in Belfast, you would be on contract if you couldn't get a permanent job. Here, you would be permanent if you couldn't go on contract. It's just a question of how many jobs there are" (Paul). This can even override the threat of lost reputation if the demand is high enough: "They mightn't think you'll stay, but if they need you badly enough they'll hire you anyway!" (Paul). Industry norms have developed around the "proper" forms of mobility—mobility between jobs is not unlimited but requires a strategy that must be carefully managed.

Mobility is therefore taken for granted as an element of the composition of software teams such as the Womble team. Relations with coworkers develop in the context of a constant awareness that the members of the team might be dispersed at short notice. This can happen either by corporate decision (the team beside us was disbanded overnight when USTech in Silicon Valley halted development of the product on which they were working) or through the decision of individuals to leave the team. Mobility, then, is a double-edged sword—the advantage to employees of being able to leave with few repercussions is balanced against the lack of constraints on companies' changing employees' responsibilities and even getting rid of them (within the bounds of the law). Indeed, the Womble team was itself largely disbanded when development work was moved back to the United States and fully disbanded when Womble itself went out of business. These advantages and dangers are all the more significant for contract employees, given their complete lack of formal job security. These highly fluid conditions threaten the ability of software developers to work together in a cohesive way on a common project. The intensification of space in the global workplace provides some of the critical elements of the answer to this organizational dilemma.

Putting Work in Its Place

While software developers may move quite regularly from job to job, they have an intense relationship with each other once in a particular job. In informational and design work, the labor process is usually organized in the form of teams working closely together on specific projects. Some see these as "virtual" teams interacting purely through cybertechnologies—the process of generating cooperation among employees is assumed to be unproblematic.[13] Indeed, Ramesh himself subscribed to the theory of the virtual economy in a "Thank You" e-mail message he sent to the contract graphic-design firm in California:

> Our project team was truly an international virtual-team, with up to 8 hours of time-zone difference among the different team members. We expected you to work at such a hectic pace, yet, we also demanded extreme flexibility from you in all respects. It is very rare that anybody of your caliber would be able to excel on both these fronts.

However, Ramesh had misread his own organization. Members of such teams are usually located in close proximity to one another, as this allows the team to handle the complex interdependencies among them through easy and constant communication and allows them to build a coherent collective identity, which becomes the basis of cooperation within the team.

The sheer volumes of information and the dependence of each member of the team on the design decisions of the others makes the easy interaction of the team members critical. As Jim at USTech worked on the user interface screens he would intermittently call over to Paul two desks away: "What did you call the course number variable, Paul? I can't find it," "Are you working on the database at the moment? It's a bit slow," "Who's doing the security screens?" The questions and answers are discussed on the way to and from breakfast and lunch, although by common consent rarely during the meal itself.

By contrast, information flows to the United States can be patchy and tend to be limited to broad strategic decisions. A developer in Silicon Valley would have great difficulty in developing this product with the team around me in Ireland. Indeed, my own easy ability to ask the developers around me for information fifteen times a day contrasts with the difficulties I have sharing information with Jane in Silicon Valley, a process that sometimes left me idle for mornings or afternoons as I waited to be able to call her in the United States to clear up some minor misunderstandings. Where such transnational "virtual" relationships work, they are constantly supplemented by travel to meet the team or teams in the other country. Ramesh was a regular visitor to the USTech Ireland office. Distance also clearly limits how much employees can learn from their colleagues. The experience of working in close physical proximity with the more experienced and skilled developers teaches others the skills and tricks that turn a computer science graduate into an effective and innovative programmer.[14]

The accountability of team members to one another is also much more easily sustained in face-to-face interactions than in "virtual" communications. Problems can arise even in the most apparently "flat" and nonhierarchical of organizations. I was caught in a bind during the conference call when Ramesh asked me, an untrained technical writer with a long and largely irrelevant training in sociology, "Seán, are you happy with the proposal to put the toolbar in the help box?" While I was being formally asked to participate in a design decision, the social structure of this global organization made me think first not of the implications of my decision for the system itself but of my loyalties to the fuming developers around me. Even the periodical visits of Ramesh to Ireland did not solve the problems of miscommunication and alienation felt by the Irish team. As Michael, the business manager of the group, said, "Having a remote manager has made getting a process of communication in place a lot more difficult." Problems which would require solution in a face-to-face context can be swept under

the carpet or become a figure of fun in a context where communication is by phone and the Internet.

The issues that can be resolved in a daily phone call to the United States are those relating to the strategic technical decisions, which were hotly debated with Ramesh every day by Séamus, the team leader, and even by the other members of the team. E-mail was generally used within the team to pass on relatively routine information to one another—whether that was between the team members or between Séamus, the team leader, and Ramesh. On one occasion, although we sat fewer than ten feet apart, Conor and I exchanged a series of e-mails about problems I had found with the program and the fixes he had made—without ever turning around to speak to one another. Only when it became clear that one of the problems was more complex than it appeared did we discuss the issue face to face. E-mail also appeared to be a valuable tool for allowing the team members to stay in touch with their friends throughout the industry. I was able to combine my membership in the "global ethnography group" with participation in the Womble team, largely unbeknownst to anyone else on the team. Other team members seemed to use e-mail similarly—every now and then someone would read out a joke they had been sent by a friend or tell us about the bonuses being offered at other companies for recruiting a new employee. Overall, while face-to-face interactions were critical to conveying complex information or to building and sustaining trust, computer-supported communication seemed "especially suited to maintaining intermediate-strength ties between people who cannot see each other frequently."[15]

USTech is situated in one of the areas best known for information technology in Ireland. In a city that is attractive to the young people who dominate the software industry, USTech also benefits from access to a large pool of local skilled labor and from the connections of the Womble team members to the broader "culture of innovation" within the region. The Womble team members, especially those who have had more mobile career patterns, have many connections to people throughout the local industry and often recount stories of people they know in common, people who could be hired by the team, other developers they met around the city and discussed their work with, and so on. Their high-mobility careers are also sustained through social ties to others in the industry who can provide the team members with information on job opportunities and can provide formal or informal recommendations to employers regarding the team members' competence. It turns out that both the high-mobility careers and the face-to-face interactions which mitigate the corrosive effect of that mobility on workplace cohesion are supported by the emergence of this regional "innovative milieu."[16]

Face-to-face interaction, localized social relations, and electronic networks each structure the global workplace in important but different ways. Clearly face-to-face interaction does not guarantee good communication or

cooperative working relationships. However, it makes it a lot easier than trying to achieve these across eight time zones and numerous digital interactions. Ease of communication and mutual accountability at "work" ensure that spaces defined by face-to-face interaction remain a critical component of the global workplace, even as virtual spaces proliferate.

A Globalized Local Culture

These globalized workplaces also take on a distinct culture, which reinforces the cooperation and cohesion produced by the organization of work itself. In many ways even these human paradigms of the global economy are "global locals" bringing distinct "local" cultures to the global stage and remaking both global and local social relations in the process. This small open-plan team area may be a globalized space but it is one that has a clearly defined local identity and that interacts with the global economy with caution and at times with difficulty. Some have argued that such tensions between the local and the global are born out of a traditionalist resistance by the local to the cosmopolitanism of the global.[17] However, the Womble team does not resist the global in and of itself but contests how the global should operate, showing disdain for the mismanagement of the global by the remote managers.

This can be seen most clearly in their perceptions of American software developers and managers. As an Irish manager at USTech told me:

> The test group here was the best in the corporation and they were really saving USTech with their customers in the field. So we had all these American managers coming over telling them they were the greatest and how they were the best thing since sliced pan. That's OK the first time, but after a while the people here started saying among themselves "Quit the bullshit—if you think we're so great, give us a raise or at least buy us a few pints."

This disjunction was shown up dramatically after one particular bout of complaining about the United States managers of the team. Séamus, the team leader, summed up the relationship to the United States parent ironically:

> *Séamus:* It's not as if there's "us and them" or anything. . . . It's not even that, it's just "them" really!
>
> *Jim (wearily):* Yep, they're the enemy!

Nonetheless, the Irish managers and developers tended to work very successfully with their American counterparts, accepting some aspects of United States corporate culture while maintaining a clear rejection of many aspects of the Americanized environment in which they find themselves.

The developers themselves regard their team culture as homogenous, despite the fact that Dan is from Hong Kong;

Jim: What would we do if a black guy joined the group? Who would we pick on?

Conor: Or a woman?

Jim: Séamus, you can't ever hire a black woman!

Seán: There's always Americans to pick on. . . .

Séamus: Yeah, but they're too easy. There's no challenge in that. [Laughter.]

The mention of a "black guy" was largely rhetorical, as I never heard any comment within the team directed against "black guys." The team culture was clearly masculine, and there is no doubt that this culture could be self-perpetuating.[18] "American" is also somewhat ambiguous in this context, as Ramesh, the "American" with whom the Womble team members have the most interaction, is originally from India. On a different occasion, three members of a different team discussed their Indian boss in the United States with Conor and me:

Pat: We have one too—Ranjit.

Conor: Ranjit—that sounds like something out of Aladdin.

Peter: [Says something imitating Ramesh's accent.] That's racist, that is. [Criticizing himself, very serious about it.]

Bob: Yeah, that's an "ism," that is. That's racism.

Pat: They're [Indian software developers] probably over there saying "those bloody Micks."

Aidan: Yeah, saying "drinking pints of Guinness over their computers."

"Difference" on a global scale is an everyday part of these software developers' milieu, although it is negotiated within a strong, homogenous local culture. This was evident in the team's relationship to Dan (from Hong Kong). In fact, while the culture of the team was strongly male and Irish, members of the team were highly aware of this global culture, and most would criticize racism and sexism that they saw elsewhere. On one occasion, two other team members and I were both shocked and amused on hearing Dan racially slander a visiting technical trainer who was Pakistani. "The other" was accepted as an everyday part of life for Irish software developers and helped to define the team identity. When Dan revealed his own criticisms of another Asian ethnic group, this disrupted our assumption of a single "other" and was both surprising and funny to Dan's team members. It revealed that Dan's behavior and attitudes regarding race were subject to different rules than those of the Irish-born team members.

While the team members worked relatively easily with people of a variety of national, ethnic, and racial backgrounds, they consciously maintained a strong local team culture. Operating in the global workplace required them

to work with and around "difference" but, by the same token, the less hierarchical forms of economic domination in the global workplace allowed them to maintain their local culture within these global connections. There is also a strong pragmatic element in this ability of people from different backgrounds to work together in the global workplace. One of the Womble Software managers took us out for a meal when she was visiting from the United States. Halfway through the evening I commented to Pat, a contractor, "She seems OK, decent enough," to which Pat replied, "Well, when you come to discover the jungle you have to play with the natives."

Not only are the Womble developers "global locals," but they also think of themselves as such. Their highly mobile careers and relatively fleeting association with one another in the workplace demand an intense experience of a shared space and culture in order for them to create a cohesive work team. The team members use elements of a shared culture from outside the team to create this solidarity but are also able to accommodate aspects such as Dan's non-Irish racial and ethnic background into the team through the overriding emphasis on work and technical competence. While these local team cultures can be exclusionary of women and other ethnic groups, as indicated in the quotes above, they are also flexible enough to accommodate the presence of such others within the dominant team culture when necessary. Place, mobility, and the global workplace are not necessarily in tension with one another, as they might appear to be on first glance, but are in fact symbiotic, underpinning one another's importance and sustainability.

In short, globalization does not mean the end of place. Instead, it creates places which are increasingly "between" other places and have ever-deepening connections to other places. The high-mobility career pattern that is typical of the software industry poses a threat to the work team cooperation, commitment, and cohesion necessary for innovation. What I have called the intensification of space through the dense social networks of the team and the region provides a solution of sorts to this dilemma. However, local networks also serve to reproduce mobility, as developers use their connections to engineer their next career moves. Mobility and place sustain one another but also remain in tension within the structure of the global workplace. In order to understand how this tension is resolved, we need to go beyond the intensification of space in the structure of the global workplace to an analysis of the dynamics of that workplace, dynamics that are set in motion by the control, regulation, and intensification of time.

THE DYNAMICS OF THE GLOBAL WORKPLACE

The mechanism for controlling the software development team is the project deadline. As it is impossible for the final design specifications to provide solutions to every issue faced by the team, and as the actual work done by the

team is difficult for management to supervise directly, the deadline becomes the focus of both management and team efforts. "Do what needs to be done to get this specification working by the deadline" is the broad task of the team. The deadline represents the first point in the development process when both team and management will be able to examine the entire working product. The deadline is the mechanism by which management brings the intensification of time into the heart of the team. It is also an attractive mechanism of control, since direct management authority over the work process is undermined by the employees' superior expertise and by their need for rapid communication and cooperation. In contrast, time can be regulated through the use of the deadline, with only a limited local managerial presence, and with relatively little ongoing exercise of managerial authority. This deadline becomes the stimulus that sets the dynamics of time-space intensification in motion in the global workplace—leading to a pre-deadline phase of team introversion and a post-deadline phase of extroversion.

The Womble team schedule had three main phases—a beginning period of "normal work," a hectic middle period before releasing the product at the deadline, and a final period of rest and negotiation after the deadline and the release had passed. The character of the team and the issues it faced changed as the team members went through these stages of the cycle together. I joined the team in the hectic pre-release phase and left them as the post-release phase wound down.

Introversion before the Deadline: A Team against the World

In the weeks before March 1, the release date for our product, life in the Womble cubicle becomes busier and busier. The team works longer hours and becomes more and more isolated from the life of the company around it. Internally, the team becomes more cohesive, communication becomes more urgent, technical arguments take on a new edge, and any delay or new instruction from outside the team is met with a barrage of criticism. The graphics for the screens of the system (what the user sees when using the system) are delayed in coming in from the graphic-design house outside San Francisco. The Womble developers grow more and more impatient, furiously criticizing management and the graphic designers for their incompetence. The time allotted for particular development tasks is counted first in weeks and then in days. From time to time, a particular problem is put aside, to be dealt with in the period set aside for fixing the initial bugs in the system, a period between March 1 and March 10. Such postponements create some dissatisfaction among the developers:

> *Conor:* We're all tired. We've been at it for two months really. It's a lot of pressure. Something every day. There's no time to take a day and research something. We need a week to go over some of the bigger issues, have some meetings, go over things, you know. There's some dodgy code in there too.

While not as long as the hours worked by some other software development firms in Ireland, the work hours do start to creep up toward sixty a week. Séamus, the team leader, works constantly, often late into the evening and the night.

Weeks earlier, Conor had told me:

> I've a feeling this is the calm before the storm. My attitude when it's calm is get out of here at 4 or 5, 'cause when it gets busy. . . . You have to draw the line yourself as far as hours go, you have to say once in a while "Sorry I have something on tonight, I can't stay." You have to keep your standard hours around thirty-nine/forty. If you let your standard hours go up to forty-five, then they'll still come to you and ask you to do a few extra hours that evening. They won't think about that extra six hours you're doing as part of your standard. It's up to yourself to draw the line.

As the deadline nears, however, he ends up staying late and coming in two weekends in a row. While not pleased by having to work these long hours, they are largely accepted as the industry norm. In the Irish economy as a whole managerial and professional workers, especially in small firms, tend to work the longest hours and work a great deal of unremunerated overtime, according to a recent study: "Ireland may be a long way from the Japanese or North American patterns of executive working time, which involve managers working particularly long hours . . . as a normal feature of managerial careers, but the trajectory of change is in this direction." The authors of this study argue that the same findings apply to professional workers, although the trend is somewhat weaker.[19] Among the team members, proposed legislation limiting working hours is discussed ironically:

> *Séamus:* I wonder does Ramesh know about the European Social Charter limiting the working week? Forty-three hours per week or something.
>
> *Conor:* Great!
>
> *Jim:* It's forty-eight.
>
> *Conor:* Fuck, that long?
>
> *Jim:* Yeah, forty-eight for each company, forty-eight for Womble, and forty-eight for USTech!

Such hours and constant pressure take their toll—the week after the release I bumped into Paul on our way in to work:

> *Paul:* I was feeling crap lately 'cause I've been under a lot of pressure and everything. But now I feel great after having that day off.

The impact on the developers' personal lives is also clear from a conversation weeks later before Ramesh arrived in Ireland to take us to a promised celebration dinner:

Jim: Maybe we'll all meet up. I hope he doesn't meet my wife. She has it in for him.

Séamus: Herself and Linda should get together so. They have a lot in common actually—they're both vegetarians too.

Seán: Except when it comes to Ramesh! [Laughter.]

Jim: I see you've met my wife!

However, what appeared to be deep antagonism to Ramesh during the pre-release stage faded away in the post-release phase. While the developers' complaints about management's making their life more difficult persisted, their intensity waned so that when Ramesh came on a visit to Ireland after the release he was quite warmly welcomed (he was also quite well liked by the team members on a personal basis). Apparently, however, the complaints did not fade as quickly for the developers' families, who experienced only the long hours and intense demands on their personal lives without sharing in the collective team "buzz" of getting the product out in time and of working well together.

While attempting (with little success) to limit their hours, the developers also tried to protect themselves against the follies of management in other ways. The team responded to the pressures from Ramesh and the outside world by turning in on themselves, by becoming increasingly introverted. Having a manager on the other side of the world allowed the team, including the team leader, to screen information from management in order to let the team balance the technical and time demands to their own satisfaction. Having encountered a particularly thorny problem, the team finally found a solution:

Jim: So we're going to do that then. Ramesh never needs to know about it. So we can have it set up the way we want it, and he'll have it the way he wants too.

Paul: So we're going to do it the sneaky bastard way.

Séamus: I like the sneaky bastard way!

Paul: And Ramesh never needs to know.

Séamus: No, no. Well done, gentlemen!

Jim: Just don't say anything about this on Monday when Ramesh is here!

In many cases the reason for this screening of information was to avoid Ramesh's interference with a solution which the team considered to be the most technically effective. At other times, the goal was to avoid any extra tasks being given to the team before the deadline. On one occasion, Ramesh sent an e-mail about a problem in the database they were using. Not realizing that Dan had been working on this issue for a while now, Ramesh set aside a day the week before the release for Dan to work on it.

Jim: Dan will have that done today.

Seán: So what about the day Ramesh is setting aside for it next week?

Jim: Oh God, I'm not going to tell him we already have a solution. He's already expecting it to slip a bit, so if we get it in on time he'll be really happy. I think we're a little bit ahead of schedule, but he thinks we're a bit behind, so that suits us.

In general, team members were careful to protect themselves from undue interference from headquarters in the United States and left the negotiation of deadlines and larger technical issues to Séamus, the team leader. As Conor advised me when I had sent an e-mail to Ramesh about a problem in the "help" screens:

Be careful what you send to Ramesh. Cc it to Séamus, or, better yet, send it to Séamus first; let him decide. That's what I do. You have to look after your own behind first, you know. I try to get involved as little as possible with Silicon Valley; I give it to Séamus. That way I have a buffer between me and the United States.

The team could also use the Product Technical Specification (PTS) as a rhetorical device with which they could, if necessary, justify not doing certain tasks. The technical specification for the product was a detailed document outlining the technical basis and logic of the system and supposedly defining the key aspects of the actual development process. However, in contrast to the expectations of formal models of software engineering, the specification document was necessarily vague in places and could not capture all the technical dilemmas that arose during the development process.

Dan, sitting beside me, constantly justified his resistance to certain new tasks that arrived before the deadline with the refrain "If it's not in the specs, I'm not doing it." On one occasion, Jim and Paul discussed a new requirement for the system that had come from Ramesh in an e-mail that morning:

Jim: Is it in the specs?

Paul: No.

Jim: Well, screw it then; we don't need to do it.

However, they later came up with a solution to the problem, which they knew was not strictly compatible with the technical requirements of the PTS but which would solve the problem satisfactorily. In this case they were willing to drop their apparent dedication to following the specs in order to try to slip a different solution past Ramesh:

Paul: I have a feeling we're going to get screwed on this. I think the thing to do is to keep our mouths shut, do this what I'm doing now, present it to them

without saying anything, and then if they come back saying "We're not supporting that," then OK. 'Cause if I just say it to him, he'll just say "Noooo. . . ."

Jim: Yeah, he does that.

At times the dissatisfaction extended into banter about collective action among the employees. When new changes to the computer graphics for the screens arrived one week before the deadline, the team was furious:

Conor: I'm going on strike.

Seán: That'll make history, the first strike in the software industry.

[Dan laughs ironically.]

Conor: You know what last minute changes means: it means you work your arse off.

Dan: If it's something we've agreed already, I'll work my ass off. But if it's last minute changes I won't. It has to be reasonable, or else it's "See you later."

Later, at breakfast, Conor brought up the issue again:

Conor: I'm going on strike. I say, "In with the union!"

Jim: Well if it's minor changes to what we still have to do, then we'll do it. But if it's changing stuff we've done already, then we're not doing it.

The others on the team agreed. Conor's view was that the developers themselves were not an elite, as it was the companies that were making the real money. Of course, software developers are generally relatively well paid:

Jim: Maybe we should join SIPTU [the largest national union] and get union rates. But who wants that kind of pay cut?

Conor was, however, the only team member who put the complaints of the team in the language of collective action. Despite the close ties between the team members and the generous cooperation and help they gave to one another, the solidarity of the team was cast almost entirely in negative terms, terms that grew out of their need to protect themselves from the interference of management and less competent designers and developers, in order to get a technically good job done under reasonable conditions. This was achieved largely by controlling the flow of information out of the team as best they can. Collective efforts to negotiate what such reasonable conditions might be were not on the agenda, as industry norms around hours, unreasonable deadlines, and so on were rarely challenged. However, as the team comes together to resist the pressures of time intensification, they created the team cohesion and work intensity that allowed them to meet the challenges of innovation in the global economy. Ironically, it was the team's resistance to corporate interference that created the conditions under which the team managed to meet corporate innovation goals.

Extroversion after the Deadline: A Team in the World

After the release, the team goes into temporary collapse, with the work pace slowing dramatically. As work starts to pick up again, I notice that the solidarity of the team in the pre-deadline, introverted phase has fractured somewhat. During the period after the release, individual team members begin to negotiate their roles in the next phase of product development. The team begins to fragment as the focus of the team members shifts from getting the work done to building their careers: the team members become extroverted, looking outward to their future opportunities within and beyond the team.

The next deadline is three to four months away and requires the implementation of the system in the Java programming language. This move to Java is critical for the product, although difficult because it is a new language. People with Java development skills are in short supply and many products with which the Irish teams work do not have Java "drivers," which are needed in order to work with a system designed in Java. From the team members' point of view, this is a great opportunity: training in Java and experience in developing a complex product in the language will greatly enhance their appeal in the labor market.

However, the distribution of such opportunities for training and for valuable experience is not determined by the technical requirements of the product. It is an object of negotiation within the team, negotiation that takes place through the social networks among team members and between team members and the team leader and managers. The issue is rarely mentioned publicly, let alone discussed collectively. Furthermore, the move to Java is a gradual one and each stage produces different sets of conflicts.

The move to Java represents an opportunity for the Irish team, but also a threat. As the team moves to a new technical phase in the development, an opportunity opens for Womble Software to relocate the development work. Despite the Irish team's advantages of knowledge and experience of the system, there is still a danger that development work could move back to the United States. One team meeting discussing the move to Java produced the following exchange:

Michael (Business Manager): We have to get a Java person in Ireland. Ramesh has someone in the United States, but we can't let that happen. We can't let it go there.

Paul: Yeah, you don't want to let the development stuff leak back to the United States. If it starts it'll all end up back there eventually.

The Irish team scrambles to gather together Java skills and to give Ramesh the impression that we have more skills than we do. Later it is my clear impression that Ramesh is aware of the limited level of skills in the Irish

team but that he has developed a trust in the Irish team's ability to get up to speed on Java in time.

Of course, merely keeping the Java work in Ireland does not solve the issue of how exactly the need for Java knowledge will be solved for the team. This issue arises first in relation to a totally different problem. The system with which we work needs to be able to run on computers with Apple's Macintosh operating system. At present, our system cannot do that. One quick way to achieve this is to buy a particular software product. However, this will add two thousand pounds to the cost of each copy of our product for Mac. Instead, it is decided to adjust some parts of our system using Java, which will achieve two goals: make the system work on Mac and begin the process of implementing the system in Java. The team must look for a contract developer who can do this work before the release date.

> *Michael:* I think we'll have to get a contractor. Pat is up there with the porting team at the moment. He should be able to do it..
>
> *Jim:* Yeah, Pat is very good.
>
> *Michael:* Under normal circumstances we'd put that 2,000 into training somebody on the team so that they could do it, but we don't have the time at the moment because of the release date coming up. So I think we should get Pat.

There are usually multiple ways to incorporate new skills and sources of knowledge into the team. The strategy of buying a product made by another company, a product that embodies that knowledge, is rejected in this case due to its cost. Training current employees is always an option but is often overlooked in the hectic development schedule. No one can be spared for a week-long course with the deadline hanging over the team. The team also missed out on other training opportunities while I was there due to this pressure of time. Finally, bringing in someone with the necessary knowledge is chosen as the strategy, less than satisfactory in the long-term but necessary given the time constraints.

The issue of hiring contractors versus training employees is of course a sensitive one:

> *Conor:* Be careful we don't keep getting contractors to do Java stuff and none of us get to go to the training on it.
>
> *Jim:* Sure, I know. I'm thinking if we get someone on Java he'll have lots of ideas about things to do in Java, and that'll create lots of work for us to do in Java.

This strategy poses a particular danger to the team: while contractors may come only for a short while, they often stay longer as they develop knowledge of a particular piece of the product or become valuable to the team in a particular area. Even I, as a novice technical writer, become valuable: having developed a knowledge of the system, I will be able to write the help materials for future editions more quickly than some professional "tech writers" with no knowledge of the product.

This tension between contract and permanent employees becomes clear in the negotiation of team members' roles around opportunities for working with Java. It is in this internal competition for Java work that the fragmentation of team solidarity and the shift from an introverted to an extroverted orientation within the team is clearest. When Paul, a contractor, declares that he is starting to teach himself Java and wants to do a Java implementation of his part of the system, this meets with some (private) concern from some other members of the team: "I thought he was just here to do that section of the system and not to do this Java stuff." Dan is particularly worried about the involvement of contractors in Java work to the exclusion of permanent employees:

> *Dan:* The three contract people are doing Java and the two permanent people are doing everything else. It is not right. Conor and myself were told in our one-on-one reviews with Michael that the permanent people would get Java training. They would get priority over the contractors. Michael said that they didn't want to give it to the contractors first 'cause they could just leave and take it somewhere else. But that's not how it's going to be—over the next few months they will be doing Java, and we will be doing everything else. I was talking to Conor about it yesterday. He is aware of it.
>
> *Seán:* Will you say anything about it?
>
> *Dan:* What can I say? My attitude is if something is wrong and I can't change it, then I just leave and go somewhere else. It's as simple as that. It doesn't make sense from USTech's point of view. They are paying all this money for contractors, and they are not paying for training for permanent staff. In the end they just pile up the costs for themselves. It's crazy from USTech's point of view. And from my point of view. [Laughs ironically.]

Dan did eventually talk to Séamus, the team leader, about this and received assurances that he would be doing Java work. Paul's growing interest in other advanced technical areas also helped defuse the situation to some extent. However, the negotiations continued as I left. Indeed, on Ramesh's second visit he treated the whole team to a dinner and a night out on the town. Each one of us, as we sat over dinner and wound our way through the city streets, discussed our future roles with Ramesh. I talked over the possibility of doing some further technical writing on a contract basis once my fieldwork was over. Paul discussed his hopes to do some field consulting on the product, Jim and Paul their plans to work on a new technical area of the product, and Conor his desire to do work with Java in a particular application of our system. Indeed, we also put in a good word with Ramesh for each other where the different roles seemed complementary.

Even while competing over certain areas of the work, the team members helped each other out in others.

The team solidarity of the pre-release phase becomes more fractured as opportunities for training and learning become a focus of conflict within the team. However, the conflict is submerged and operates through a complex set of social networks and shifting alliances among team members. These ties interact with the formal categories of permanent and contract employees to produce a politics of learning and skills within the team. These local dynamics are intimately connected to the nature of the opportunities in the global market for knowledge embodied (in this case) in the skills of United States developers and the products (software tools) available to carry out certain tasks.

The pre-release phase reveals the nature of the local and global solidarities of the team, with local solidarities increasingly pitted against global interference, as the local team fights for the space to achieve the "global" goal of releasing a good product in the way that they see fit. The post-release phase reveals more schisms within the team and shows how the local team is forged out of a range of alliances among local and global employees and managers. The mobility of team members through various learning paths, both within the team and outside it, is negotiated in this phase, laying the foundation for the next pre-release phase, which is three to four months away.

TIME-SPACE INTENSIFICATION

The emergence of a global information economy has transformed the character of the workplace for many employees, including those within informational industries such as software. Many authors argue that the globalization of work destroys place and locality, creating placeless "virtual" work. Against this view, this chapter has argued for a concept of globalization that emphasizes the organization of the global economy through particular places and regions and the critical importance of patterns of mobility of people, information, and resources within and between these regions. These changes in the territorial organization of capitalism interact with an organizational restructuring characterized by the decentralization of work and firms. While some authors argue that these organizational changes will bring relative equality and a rough and ready economic democracy, this chapter has shown that new forms of power operate within these new organizational forms. Ethnography reveals that we cannot simply deduce concrete social practices and power relations from a particular organizational and territorial work structure. Instead, we find that a new ground is emerging upon which the struggles of the global informational economy will be waged—a new set of social identities, resources, interests, and issues is created, which will be the basis of the politics of the global workplace in the years to come.

This new "contested terrain" of the global workplace is a system of time-space intensification where workers experience not the "end of time and space" but their ascent to a new level of intensity. Space is intensified by the necessity of local cooperation and the increased use of project teams in the face of the challenges posed by the global economy. Time becomes an ever more pressing reality in the deadline-driven workplace. This time-space intensification shapes the structure of both work and careers in the global workplace. Careers are built using mobility between firms to bargain for improved wages and access to technical learning, and these mobile careers only increase the importance of close interactions and strong local cooperation while working on any particular project. Out of these underlying structures emerges a set of dynamics, organized around the project deadline, which give the global workplace its dynamism but also generate certain costs and dilemmas for the participants. Conflicts over these dilemmas of time-space intensification constitute the new politics of the globalization of knowledge work.

What will be the central controversies on this new contested terrain? The two phases of time-space intensification create characteristic advantages and dilemmas for knowledge workers such as the software developers in this chapter, for firms such as USTech and Womble Software, and for workers' families, software users, and the other (largely invisible) social actors beyond the industry with an interest in its social organization. While these dynamics and dilemmas have been recognized for some time in the information industries, globalization intensifies them.[20]

Certain characteristic organizational problems are likely to emerge: these are the internal organizational dilemmas of time-space intensification. In the pre-release phase, the introversion of the team, the intensification of time, and the pressures imposed by the deadline create the conditions that lead to employee burnout—manifested in the case I have described in the exhaustion of the team members up to and after the deadline and also in the decision made by Ramesh (some five months after I left the team) to resign due to overwork. This creates problems for the organization, as the team's introversion cuts it off from the rest of the organization and raises the danger of organizational involution and the distancing of teams from one another, even teams working on related technical or business issues. For the Womble team this can be seen in the antagonistic attitude to the graphics team in California, a set of relationships which, if more cooperative, could have been very valuable in improving the product under development.

In the post-deadline phase, the solidarity fragments and team members begin to look elsewhere for future opportunities. The extroverted phase is

when employees can turn to the labor market to gain the rewards of their new-found expertise and the organization can assemble a new group of employees with new sets of skills and resources into a project team for the next phase of the development effort. However, there is also a significant cost associated with the high levels of employee turnover within the industry. The accumulated knowledge derived from the development of the Womble software product, which has built up within the team, is now dissipated throughout the industry. This constitutes a significant loss of firm-specific knowledge from Womble's point of view and also a loss of the effort put into developing effective working relationships within the team. There are therefore clear organizational costs attached to failure to address these internal dilemmas.[21]

Time-space intensification also causes certain external social dilemmas. The pressure and introverted character of the pre-deadline phase, and the resulting insulation of workers and the organization of their work from any kind of broader social accountability make it difficult to reconcile the team structure and team culture with broader social concerns. This is manifested in at least two areas. The most directly obvious is the work-family nexus, where work demands come to dominate family life, leaving very little space for workers to negotiate alternative work and family time arrangements. Secondly, as technology increasingly penetrates our everyday social practices, the involvement of users in decisions regarding these technologies becomes more and more crucial. But the isolation and insulation of the developers during their most creative and innovative phase militates strongly against any meaningful interaction with prospective users of the product from outside the team. To the extent that we might fear the arrival of the Weberian "iron cage" in the form of a society dominated by large, centralized organizations, there is some promise in the decentralized organizational forms compatible with this high-mobility system. However, although organizations no longer have the same rigid bureaucratic structures insulating them from social accountability, the intensification of time ultimately results in a similar outcome.

The post-deadline phase of high mobility creates a very high degree of volatility and insecurity in the labor market so that employees lack strong employment guarantees. This is not currently a major issue in the Irish industry, given the generally very high demand for software skills. Even in the current tight labor market, "employment security" gives way to "employability security."[22] However, when career gains are based on the threat of mobility, this seems inevitably to lead to increased labor market inequality, as the threat to leave is only effective when replacing the employee is difficult. As it is inherently based on scarcity, the limits of mobility as a universal career strategy are clear. This seems likely to be a contributing factor to the spiraling wage inequality in Ireland over the past ten years.[23]

These internal and external dilemmas of time-space intensification are all the more crucial given that the economic success of the Republic of Ireland over the past ten years has been built upon the success of industries such as software.[24] The politics of the conference call became the new politics of the global workplace—distant yet closely integrated into operations in the core, less hierarchical but nonetheless subject to new forms of power relations. As these global workplaces spread through economies such as Ireland's, the dilemmas of time-space intensification will become central economic and social issues for societies incorporated into new, deeper processes of globalization. The value of global ethnography is its ability to reveal these dilemmas as aspects of a "contested terrain" of globalization, rather than as inevitable outcomes of an apolitical process.

NOTES

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1. Robert Reich, *The Work of Nations.*

2. Anthony Giddens, *The Consequences of Modernity.* Giddens argues that globalization occurs in a process of *time-space distanciation,* as space and time are "distanciated" from (lifted out of) their local contexts. There are two main mechanisms through which this happens: the use of *symbolic tokens* (universal media of exchange/interaction such as money) and of *expert systems* (shared bodies of technical knowledge that can be applied in a wide variety of contexts).

3. See Marshall Berman, *All That Is Solid Melts Into Air;* David Harvey, *The Condition of Postmodernity;* and Manuel Castells, *The Rise of the Network Society.* Harvey argues that globalization is characterized by a process of *time-space compression,* in which the speed-up of time in the global economy also serves to compress the autonomy of local space and social context, as different places are integrated into an increasingly universal capitalist economy.

4. See Barry Bluestone and Bennett Harrison, *The Deindustrialization of America;* Michael Burawoy, *The Politics of Production;* and Harley Shaiken, *Mexico in the Global Economy.*

5. We might refer to this perspective as *time-space embedding,* as embeddedness of workplaces in their local social contexts appears to provide a solution to the speed-up of the global economy, giving the successful workplaces some insulation from these pressures and perhaps even re-embedding time itself in local contexts. See

Michael Piore and Charles Sabel, *The Second Industrial Divide;* AnnaLee Saxenian, *Regional Advantage;* and Michael Storper, *The Regional World.*

6. See Leslie Perlow, *Finding Time,* and "Boundary Control," for detailed empirical analyses of these issues in a software workplace.

7. Eoin O'Malley, *Industry and Economic Development.*

8. For a more detailed analysis of this process, see Seán Ó Riain, "The Birth of a Celtic Tiger?," "An Offshore Silicon Valley?," and "Remaking the Developmental State."

9. IBM's employment guarantee collapsed with a reduction of 140,000 in a workforce of 400,000 between 1986 and 1993. For an analysis of "corporate culture" in such workplaces, see Gideon Kunda, *Engineering Culture.*

10. See Saxenian, *Regional Advantage,* and Baron, Burton, and Hannon, "The Road Taken."

11. Office of Technology Policy, *America's New Deficit.*

12. Seán Ó Riain, "Remaking the Developmental State." See also Saskia Sassen, *The Global City,* and Saxenian, op. cit., for discussion of labor markets in agglomerated industries in core regions.

13. Reich, *The Work of Nations.*

14. Much of this learning, especially in a team context, derives from what Jean Lave and Etienne Wenger call "situated learning." See Lave and Wenger, *Situated Learning.*

15. Barry Wellman et al., "Computer Networks as Social Networks," p. 231.

16. For a discussion of this concept and a review of a variety of examples, see Manuel Castells and Peter Hall, *Technopoles of the World.*

17. See, for example, Rosabeth Moss Kanter, *World Class,* and Manuel Castells, *The Rise of the Network Society.*

18. For a more detailed analysis of these processes, based on a case study of a software company in Ireland in the mid-1980s, see Margaret Tierney, "Negotiating a Software Career."

19. Brian Fynes et al., *Flexible Working Lives,* p. 138.

20. For a classic account of these dynamics in a computer design workplace in the 1970s, see Tracy Kidder, *The Soul of a New Machine.*

21. For an organizational and management theory perspective, see Brown and Eisenhardt, "The Art of Continuous Change."

22. See Kanter, *World Class,* for a discussion of this concept as developed in a study of a software company in Massachusetts.

23. For a detailed analysis of trends from 1987 to 1994, see Alan Barrett, Tim Callan, and Brian Nolan, "Rising Wage Inequality, Returns to Education and Labour Market Institutions."

24. For a more detailed analysis of the growth of the Irish software industry, with particular reference to its potential and to the limits of state-society alliances in shaping the industry's development and impact, see Ó Riain, "Remaking the Developmental State."

SEVEN

Traveling Feminisms

From Embodied Women to Gendered Citizenship

Millie Thayer

My project began with a feminist health organization in Recife, a coastal city in the northeastern region of Brazil. My goal was to study globalization—not the inexorable spread of capital and commercialized culture throughout the world, but the construction of a transnational social movement and the complex network of relationships that sustained it. As a point of entry, I chose a feminist nongovernmental organization known as SOS Corpo (SOS Body), which had a long history, global connections, and broad influence inside and outside Brazil. My research, which took place during three five-week trips to the country followed by ten months of fieldwork, combined interviews, archival work, and participant observation as a volunteer for the organization. I translated grant proposals and brochures, catalogued English-language library materials, attended meetings, seminars, and international conferences, drank cachaça, danced, and went to the beach with members and former members of the organization, as well as with activists from a wide variety of women's groups in the region. In between I interviewed many of them, as well as representatives of key institutions with which Recife feminists engaged.

But, for some time, the global eluded me. It was everywhere in organizational practice and discourse, and nowhere that I could pin down to study. E-mails winged silently across borders, SOS members flew off to international conferences, visiting researchers and activists appeared from abroad, the fax machine churned out a steady