

Cities and the Creative Class

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Cities and regions have long captured the imagination of sociologists, economists, and urbanists. From Alfred Marshall to Robert Park and Jane Jacobs, cities have been seen as cauldrons of diversity and difference and as fonts for creativity and innovation. Yet until recently, social scientists concerned with regional growth and development have focused mainly on the role of firms in cities, and particularly on how these firms make location decisions and to what extent they concentrate together in agglomerations or clusters. This short article summarizes recent advances in our thinking about cities and communities, and does so particularly in light of themes advanced in my recently published book, *The Rise of the Creative Class*, which focuses on diversity and creativity as basic drivers of innovation and regional and national growth. This line of work further suggests the need for some conceptual refocusing and broadening to account for the location decisions of people as opposed to those of firms as sources of regional and national economic growth. In doing so, this article hopes to spur wider commentary and debate on the critical functions of cities and regions in 21st-century creative capitalism.

“Great cities have always been melting pots of races and cultures. Out of the vivid and subtle interactions of which they have been the centers, there have come the newer breeds and the newer social types.”

Park, Burgess, and McKenzie (1925)

From the seminal work of Alfred Marshall to the 1920 studies by Robert Park to the pioneering writings of Jane Jacobs, cities have captured the imagination of sociologists, economists, and urbanists. For Park and especially for Jacobs, cities were cauldrons of diversity and difference, creativity and innovation. Yet over the last several decades, scholars have somehow forgotten this basic, underlying theme of urbanism. For the past two decades, I have conducted research on the social and economic functions of cities and regions. Generally speaking, the conventional wisdom in my field of regional development has been that companies, firms, and industries drive regional innovation and growth, and thus an almost exclusive focus in the literature on the location and, more recently, the clustering of firms and industries. From a policy perspective, this basic conceptual approach has undergirded policies that seek to spur growth by offering firms financial incentives and the like. More recently, scholars such as Robert Putnam have focused on the social functions of neighborhoods, communities, and cities, while others, such as the urban sociologist Terry Clark and the economist Edward Glasear, have turned their

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attention toward human capital, consumption, and cities as lifestyle and entertainment districts.

This short article summarizes recent advances in our thinking about cities and communities, and does so particularly in light of themes advanced in my recently published book *The Rise of the Creative Class* (Florida, 2002). In doing so, I hope to spur wider commentary and debate on the critical functions of cities and regions in 21st-century creative capitalism.

WHY GEOGRAPHY IS NOT DEAD

Perhaps the greatest of all the modern myths about cities is “geography is dead.” With the Internet and modern telecommunication and transportation systems, the thinking goes, it is no longer necessary for people who work together to *be* together, so they won’t be. But this end of geography theme has been with us since the turn of the 19th century, when experts predicted that technologies from telegraph and the telephone to the automobile and the airplane would essentially kill off cities. In his widely read 1998 book, *New Rules for the New Economy*, Kelly wrote, “The New Economy operates in a ‘space’ rather than a place, and over time more and more economic transactions will migrate to this new space” (1998, pp. 94–95). Kelly then qualifies this to some degree, writing that: “Geography and real estate, however, will remain, well . . . real. Cities will flourish, and the value of a distinctive place, such as a wilderness area, or a charming hill village, will only increase.” Still, he reiterates that “People will inhabit places, but increasingly the economy inhabits a space.”

Never has a myth been easier to deflate. Not only do people remain highly concentrated, the economy itself—the high-tech, knowledge-based, and creative-content industries that drive so much of economic growth—continues to concentrate in specific places from Austin and Silicon Valley to New York City and Hollywood, just as the automobile industry once concentrated in Detroit. Students of urban and regional growth, from Robert Park (1925) and Jane Jacobs (1961, 1969, 1984) to Wilbur Thompson (1965), have long pointed to the role of places as incubators of creativity, innovation, and new industries (see also Ullman, 1958). In addition, the death-of-place prognostications contradict the qualitative research I have conducted analyzing the role of place in an individual’s location decisions. From the countless interviews, the focus groups I’ve observed, and the statistical research I’ve done, it is apparent that place and community are more critical factors than ever before. And it appears that place, rather than being an abstract “space” as Kelly suggests, is essential to economic life. The economy itself increasingly takes form around real concentrations of people in real places.

AGGLOMERATION AND CLUSTER THEORIES

Many researchers, sociologists, and academics have theorized on the continued importance of place in economic and social life. An increasingly influential view suggests that place remains important as a locus of economic activity because of the tendency of firms to cluster together. This view builds on the influential theories of the economist Alfred Marshall, who argued that firms cluster in “agglomerations” to gain productive efficiencies. The contemporary variant of this view, advanced by Harvard Business School professor Michael Porter, has many proponents in academia and in the practice of economic development (Porter, 1998, 2000a, 200b). It is clear that similar firms tend to cluster. Examples of this

sort of agglomeration include not only Detroit and Silicon Valley, but the *maquiladora* electronics and auto-parts districts in Mexico, the clustering of disk-drive makers in Singapore and of flat-panel-display producers in Japan, and the garment district and Broadway theatre district in New York City.

The question is not whether firms cluster but why. Several answers have been offered. Some experts believe that clustering captures efficiencies generated from tight linkages between firms. Others say it has to do with the positive benefits of co-location, or what they call “spillovers.” Still others claim it is because certain kinds of activity require face-to-face contact (Feldman, 2000; Jaffe, 1989; Audretsch and Feldman, 1996; Audretsch, 1989). But these are only partial answers. More importantly, companies cluster in order to draw from concentrations of talented people who power innovation and economic growth. The ability to rapidly mobilize talent from such a concentration of people is a tremendous source of competitive advantage for companies in our time-driven economy of the creative age.

THE SOCIAL CAPITAL PERSPECTIVE

An alternative view is based on Robert Putnam’s social capital theory. From his perspective, regional economic growth is associated with tight-knit communities where people and firms form and share strong ties (Putnam, 2000). In his widely read book *Bowling Alone*, he makes a compelling argument that many aspects of community life declined precipitously over the last half of the 20th century (Putnam, 2000; see also Putnam, 1993, 1996). Putnam gets his title from his finding that from 1980–1993, league bowling declined by 40 percent, whereas the number of individual bowlers rose by 10 percent. This, he argues, is just one indicator of a broader and more disturbing trend. Across the nation, people are less inclined to be part of civic groups: voter turnout is down, so is church attendance and union membership, and people are less and less inclined to volunteer. All of this stems from what Putnam sees as a long-term decline in social capital.

By this, he means that people have become increasingly disconnected from one another and from their communities. Putnam finds this disengagement in the declining participation in churches, political parties, and recreational leagues, not to mention the loosening of familial bonds. Through painstakingly detailed empirical research, he documents the decline in social capital in civic and social life. For Putnam, declining social capital means that society becomes less trustful and less civic-minded. Putnam believes a healthy, civic-minded community is essential to prosperity.

Although initially Putnam’s theory resonated with me, my own research indicates a different trend. The people in my focus groups and interviews rarely wished for the kinds of community connectedness Putnam talks about. If anything, it appeared they were trying to get away from those kinds of environments. To a certain extent, participants acknowledged the importance of community, but they did not want it to be invasive or to prevent them from pursuing their own lives. Rather, they desired what I have come term “quasi-anonymity.” In the terms of modern sociology, these people prefer weak ties to strong.

This leads me to an even more basic observation. The kinds of communities that we both desire and that generate economic prosperity are very different than those of the past. Social structures that were important in earlier years now work against prosperity. Traditional notions of what it means to be a close, cohesive community and society tend

to inhibit economic growth and innovation. Where strong ties among people were once important, weak ties are now more effective. Those social structures that historically embraced closeness may now appear restricting and invasive. These older communities are being exchanged for more inclusive and socially diverse arrangements. These trends are also what the statistics seem to bear out.

All of this raises deep questions that run to the very core of community and society. The life we think of as a key to America's golden age—strong ties between families and friends, close neighborhoods, and those attributes that come along with such communities, such as civic clubs and vibrant electoral politics, to name a few—is giving way to weaker tied yet more diverse communities. These newer communities are also more effective at generating economic growth and attracting high technology to a region. In the main, the ways that communities create economic growth has been transformed.

Historically, strong-tied communities were thought to be beneficial. However, there are some theorists that argue the disadvantages of such tight bonds. Indeed, social capital can and often does cut both ways: it can reinforce belonging and community, but it can just as easily shut out newcomers, raise barriers to entry, and retard innovation. Adam Smith long ago noted this dilemma in his *Wealth of Nations*, lashing out at merchants who formed tightly knit cliques for precisely such reasons: "People of the same trade seldom meet together, even for merriment or diversion, but the conversation ends in a conspiracy against the public" (Smith, 1776). Mancur Olson later applied much the same thinking to show how tightly knit communities can insulate themselves from outside pressure and sow the seeds of their own demise (Olson, 1971, 1986). Or, as Portes and Landolt put it, "The same strong ties that help members of a group often enable it to exclude outsiders" (Portes and Landolt, 1996).

Places with dense ties and high levels of traditional social capital provide advantages to insiders and thus promote stability, while places with looser networks and weaker ties are more open to newcomers and thus promote novel combinations of resources and ideas.¹

HUMAN CAPITAL AND URBAN-REGIONAL GROWTH

Over the past decade or so, a potentially more powerful theory for city and regional growth has emerged. This theory postulates that people are the motor force behind regional growth. Its proponents thus refer to it as the "human capital" theory of regional development.

Economists and geographers have always accepted that economic growth is regional—that it is driven by, and spreads from, specific regions, cities, or even neighborhoods. The traditional view, however, is that places grow either because they are located on transportation routes or because they have natural resources that encourage firms to locate there. According to this conventional view, the economic importance of a place is tied to the efficiency with which one can make things and do business. Governments employ this theory when they use tax breaks and highway construction to attract business. But these cost-related factors are no longer as crucial to success.

The proponents of the human capital theory argue that the key to regional growth lies not in reducing the costs of doing business, but in endowments of highly-educated and productive people. The human capital theory—like many theories of cities and urban areas—owes a debt to Jane Jacobs. Decades ago, Jacobs noted the ability of cities to attract

creative people and thus spur economic growth (Jacobs, 1984). The Nobel-prize-winning economist Robert Lucas sees the productivity effects that come from the clustering of human capital as the critical factor in regional economic growth, referring to this as a “Jane Jacobs externality.” Building on Jacobs’s seminal insight, Lucas contends that cities would be economically unfeasible if not for the productivity effects associated with endowments of human capital, writing that:

If we postulate only the usual list of economic forces, cities should fly apart. The theory of production contains nothing to hold a city together. A city is simply a collection of factors of production—capital, people and land—and land is always far cheaper outside cities than inside. . . . It seems to me that the “force” we need to postulate to account for the central role of cities in economic life is of exactly the same character as the “external human capital.” . . . What can people be paying Manhattan or downtown Chicago rents for, if not for being near other people? (Lucas, 1988, pp. 38–39)

Studies of national growth find a clear connection between the economic success of nations and their human capital, as measured by the level of education. This connection has also been found in regional studies of the United States. In a series of studies, Harvard University economist Edward Glaeser and his collaborators have found considerable empirical evidence that human capital is the central factor in regional growth (Glaeser, 1998, pp. 139–160; see also Glaeser, 2000; Rauch, 1993, pp. 380–400; Simon, 1998, pp. 223–243; Simon and Nardinelli, 1996, pp. 384–413, Mathur, 1999, pp. 203–216). According to Glaeser, such clustering of human capital is the ultimate source of regional agglomerations of firms: firms concentrate to reap the advantages that stem from common labor pools, not, according to Glaeser, to tap the advantages from linked networks of customers and suppliers as is more typically argued. Research by one of Glaeser’s graduate students, Spencer Glendon, shows that a good deal of city growth over the 20th century can be traced to those cities’ levels of human capital at the beginning of the century (Glendon, 1998). Places with a greater number of talented people grew faster and were better able to attract more talent.

THE CREATIVE CAPITAL PERSPECTIVE

The human capital theory establishes that creative people are the driving force in regional economic growth. From that perspective, economic growth will occur in places that have highly educated people. But in treating human capital as a stock or endowment, this theory begs the question: Why do creative people cluster in certain places? In a world where people are highly mobile, why do they choose some cities over others and for what reasons?

Although economists and social scientists have paid a lot of attention to how companies decide where to locate, they have virtually ignored how people do so. This is the fundamental question I have tried to answer. In my interviews and focus groups, the same answer kept coming back: people said that economic *and* lifestyle considerations both matter, and so does the mix of both factors. In reality, people were not making the career decisions or geographic moves that the standard theories said they should: They were not slavishly following jobs to places. Instead, it appeared that highly-educated individuals were drawn to places that were inclusive and diverse. Not only

did my qualitative research indicate this trend, but the statistical analysis proved the same.

Gradually, I came to see my perspective, the creative capital theory, as distinct from the human capital theory. From my perspective, creative people power regional economic growth and these people prefer places that are innovative, diverse, and tolerant. My theory thus differs from the human capital theory in two respects: (1) it identifies a type of human capital, creative people, as being key to economic growth; and (2) it identifies the underlying factors that shape the location decisions of these people, instead of merely saying that regions are blessed with certain endowments of them.

To begin with, creative capital begins most fundamentally with the people I call the “creative class.” The distinguishing characteristic of the creative class is that its members engage in work whose function is to “create meaningful new forms.” The super-creative core of this new class includes scientists and engineers, university professors, poets and novelists, artists, entertainers, actors, designers, and architects, as well as the “thought leadership” of modern society: nonfiction writers, editors, cultural figures, think-tank researchers, analysts, and other opinion-makers. Members of this super-creative core produce new forms or designs that are readily transferable and broadly useful, such as designing a product that can be widely made, sold, and used; coming up with a theorem or strategy that can be applied in many cases; or composing music that can be performed again and again.

Beyond this core group, the creative class also includes “creative professionals” who work in a wide range of knowledge-based occupations in high-tech sectors, financial services, the legal and health-care professions, and business management. These people engage in creative problem-solving, drawing on complex bodies of knowledge to solve specific problems. Doing so typically requires a high degree of formal education and thus a high level of human capital. People who do this kind of work may sometimes come up with methods or products that turn out to be widely useful, but that is not part of the basic job description. What they are required to do regularly is think on their own. They apply or combine standard approaches in unique ways to fit the situation, exercise a great deal of judgment, and at times must independently try new ideas and innovations.

According to my estimates, the creative class now includes some 38.3 million Americans, roughly 30 percent of the entire U.S. workforce—up from just 10 percent at the turn of the 20th century and less than 20 percent as recently as 1980. However, it is important to point out that my theory recognizes creativity as a fundamental and intrinsic human characteristic. In a very real sense, all human beings are creative and all are potentially members of the creative class. It is just that 38 million people—roughly 30 percent of the workforce—are fortunate enough to be paid to use their creativity in their work.

In my research I have discovered a number of trends that are indicative of the new geography of creativity. These are some of the patterns of the creative class:

- The creative class is moving away from traditional corporate communities, working class centers, and even many Sunbelt regions to a set of places I call “creative centers.”
- The creative centers tend to be the economic winners of our age. Not only do they have high concentrations of creative-class people, they have high concentrations of creative economic outcomes, in the form of innovations and high-tech industry growth. They also show strong signs of overall regional vitality, such as increases in regional employment and population.

- The creative centers are not thriving due to traditional economic reasons such as access to natural resources or transportation routes. Nor are they thriving because their local governments have gone bankrupt in the process of giving tax breaks and other incentives to lure business. They are succeeding largely because creative people want to live there. The companies follow the people—or, in many cases, are started by them. Creative centers provide the integrated ecosystem or habitat where all forms of creativity—artistic and cultural, technological and economic—can take root and flourish.
- Creative people are not moving to these places for traditional reasons. The physical attractions that most cities focus on—sports stadiums, freeways, urban malls, and tourism-and-entertainment districts that resemble theme parks—are irrelevant, insufficient, or actually unattractive to many creative-class people. What they look for in communities are abundant high-quality experiences, an openness to diversity of all kinds, and, above all else, the opportunity to validate their identities as creative people.

THE NEW GEOGRAPHY OF CREATIVITY

These shifts are giving rise to powerful migratory trends and an emerging new economic geography. In the leading creative centers, the creative class makes up more than 35 percent of the workforce, regions such as the greater Washington, DC, region, the Raleigh-Durham area, Boston, and Austin. But despite their considerable advantages, large regions have not cornered the market as creative-class locations. In fact, a number of smaller regions have some of the highest creative-class concentrations in the nation—notably college towns such as East Lansing, Michigan, and Madison, Wisconsin.

At the other end of the spectrum are regions that are being bypassed by the creative class. Among large regions, Las Vegas, Grand Rapids, and Memphis harbor the smallest concentrations of the creative class. Members of the creative class have nearly abandoned a wide range of smaller regions in the outskirts of the South and Midwest. In small metropolitan areas such as Victoria, Texas, and Jackson, Tennessee, the creative class comprises less than 15 percent of the workforce. The leading centers for the working class among large regions are Greensboro, North Carolina, and Memphis, Tennessee, where the working class makes up more than 30 percent of the workforce. Several smaller regions in the South and Midwest are veritable working-class enclaves with 40 to 50 percent or more of their workforce in the traditional industrial occupations. These places have some of the most minuscule concentrations of the creative class in the nation. They are symptomatic of a general lack of overlap between the major creative-class centers and those of the working class. Of the 26 large cities where the working class comprises more than one-quarter of the population, only one, Houston, ranks among the top 10 destinations for the creative class.

Las Vegas has the highest concentration of the service class among large cities, 58 percent, while West Palm Beach, Orlando, and Miami also have around half of their total workforce in the service class. These regions rank near the bottom of the list for the creative class. The service class makes up more than half the workforce in nearly 50 small and medium-size regions across the country. Few of them boast any significant concentrations of the creative class, save as vacationers, and offer little prospect for upward mobility.

They include resort towns such as Honolulu and Cape Cod. But they also include places like Shreveport, Louisiana, and Pittsfield, Massachusetts. For these places that are not tourist destinations, the economic and social future is troubling to contemplate.

Places that are home to large concentrations of the creative class tend to rank highly as centers of innovation and high-tech industry. Three of the top five large creative-class regions are among the top five high-tech regions. Three of the top five large creative-class regions are also among the top five most innovative regions (measured as patents granted per capita). And, the *same five* large regions that top the list on the Talent Index (measured as the percentage of people with a bachelor's degree or above) also have the highest creative-class concentration: Washington, DC, Boston, Austin, the Research Triangle, and San Francisco. The statistical correlations comparing creative-class locations to rates of patenting and high-tech industry are uniformly positive and statistically significant.

TECHNOLOGY, TALENT, AND TOLERANCE

The key to understanding the new economic geography of creativity and its effects on economic outcomes lies in what I call the *3Ts* of economic development: *technology*, *talent*, and *tolerance*. Creativity and members of the creative class take root in places that possess all three of these critical factors. Each is a necessary but by itself insufficient condition. To attract creative people, generate innovation, and stimulate economic development, a place must have all three. I define tolerance as openness, inclusiveness, and diversity to all ethnicities, races, and walks of life. Talent is defined as those with a bachelor's degree and above. And technology is a function of both innovation and high-technology concentrations in a region. My focus group and interview results indicate that talented individuals are drawn to places that offer tolerant work and social environments. The statistical analysis validates not only the focus group results, but also indicates strong relationships between technology, tolerance, and talent.

The 3Ts explain why cities such as Baltimore, St. Louis, and Pittsburgh fail to grow despite their deep reservoirs of technology and world-class universities: they are unwilling to be sufficiently tolerant and open to attract and retain top creative talent. The interdependence of the 3Ts also explains why cities such as Miami and New Orleans do not make the grade even though they are lifestyle meccas: they lack the required technology base. The most successful places—the San Francisco Bay area, Boston, Washington, DC, Austin, and Seattle—put all 3Ts together. They are truly creative places.

My colleagues and I have conducted a great deal of statistical research to test the creative capital theory by looking at the way these 3Ts work together to power economic growth. We found that talent or creative capital is attracted to places that score high on our basic indicators of diversity—the Gay, Bohemian, and other indexes. It is not because high-tech industries are populated by great numbers of bohemians and gay people; rather, artists, musicians, gay people, and members of the creative class in general prefer places that are open and diverse. Such low entry barriers are especially important because, today, places grow not just through higher birth rates (in fact virtually all U.S. cities are declining on this measure), but by their ability to attract people from the outside.

As we have already seen, human capital theorists have shown that economic growth is closely associated with concentrations of highly-educated people. But few studies have

specifically looked at the relationship between talent and technology, between clusters of educated and creative people and concentrations of innovation and high-tech industry. Using our measure of the creative class and the basic Talent Index, we examined these relationships for the 49 regions with more than one million people and for all 206 regions for which data are available. As well as some well-known technology centers, smaller college and university towns rank high on the Talent Index—places such as Santa Fe, Madison, Champaign-Urbana, State College, and Bloomington, Indiana. When I look at the sub-regional level, Ann Arbor (part of the Detroit region) and Boulder (part of the Denver region) rank first and third, respectively.

These findings show that both innovation and high-tech industry are strongly associated with locations of the creative class and of talent in general. Consider that 13 of the top 20 high-tech regions also rank among the top 20 creative-class centers, as do 14 of the top 20 regions for high-tech industry. Furthermore, an astounding 17 of the top 20 Talent Index regions also rank in the top 20 of the creative class. The statistical correlations between Talent Index and the creative-class centers are understandably among the strongest of any variables in my analysis because creative-class people tend to have high levels of education. But the correlations between the Talent Index and working-class regions are just the opposite—negative and highly significant—suggesting that working-class regions possess among the lowest levels of human capital.²

Thus, the creative capital theory says that regional growth comes from the 3Ts of economic development, and to spur innovation and economic growth a region must have all three of them.

THE ROLE OF DIVERSITY

Economists have long argued that diversity is important to economic performance, but they have usually meant the diversity of firms or industries. The economist John Quigley, for instance, argues that regional economies benefit from the location of a diverse set of firms and industries (Quigley, 1998, pp. 127–138). Jacobs long ago highlighted the role of diversity of both firms and people in powering innovation and city growth. As Jacobs saw it, great cities are places where people from virtually any background are welcome to turn their energy and ideas into innovations and wealth (Jacobs, 1961, 1969, 1984; see also Andersson, 1985, pp. 5–20; Desrochers, 2001).

This raises an interesting question. Does living in an open and diverse environment help to make talented and creative people even more productive; or do its members simply cluster around one another and thus drive up these places' creativity only as a byproduct? I believe both are going on, but the former is more important. Places that are open and possess *low entry barriers* for people gain creativity advantage from their ability to attract people from a wide range of backgrounds. All else being equal, more open and diverse places are likely to attract greater numbers of talented and creative people—the sort of people who power innovation and growth.

LOW BARRIERS TO ENTRY

A large number of studies point to the role of immigrants in economic development. In *The Global Me*, the *Wall Street Journal* reporter Pascal Zachary argues that openness to

immigration is the cornerstone of innovation and economic growth. He contends that America's successful economic performance is directly linked to its openness to innovative and energetic people from around the world, and attributes the decline of once prospering countries, such as Japan and Germany, to the homogeneity of their populations (Zachary, 2000).

My team and I examined the relationships between immigration or percent foreign born and high-tech industry. Inspired by the Milken Institute study, we dubbed this the Melting Pot Index. The effect of openness to immigration on regions is mixed. Four out of the top 10 regions on the Melting Pot Index are also among the nation's top 10 high-technology areas; and seven of the top 10 are in the top 25 high-tech regions. The Melting Pot Index is positively associated with the Tech-Pole Index statistically. Clearly as University of California at Berkeley researcher Annalee Saxenian argues, immigration is associated with high-tech industry (Saxenian, 1999). However, immigration is not strongly associated with innovation. The Melting Pot Index is not statistically correlated with the Innovation Index, measured as rates of patenting. Although it is positively associated with population growth, it is not correlated with job growth. Furthermore, places that are open to immigration do not necessarily number among the leading creative-class centers. Even though 12 of the top 20 Melting Pot regions number in the top 20 centers for the creative class, there is no significant statistical relationship between the Melting Pot Index and the creative class.

THE GAY INDEX

Immigrants may be important to regional growth, but there are other types of diversity that prove even more important statistically. In the late 1990s, the Urban Institute's Gary Gates, along with the economists Dan Black, Seth Sanders, and Lowell Taylor, used information from the U.S. Census of Population to figure out where gay couples located. He discovered that particular cities were favorites among the gay population.

The U.S. Census Bureau collects detailed information on the American population, but until the 2000 Census it did not ask people to identify their sexual orientation. The 1990 Census allowed couples that were not married to identify as "unmarried partners," different from "roommates" or "unrelated adults." By determining which unmarried partners were of the same sex, Gates identified gay and lesbian couples. The Gay Index divides the percentage of coupled gay men and women in a region by the percentage of the population that lives there and thus permits a ranking of regions by their gay populations. Gates later updated the index to include the year 2000.

The results of our statistical analysis on the gay population are squarely in line with the creative capital theory. The Gay Index is a very strong predictor of a region's high-tech industry concentration. Six of the top 10 1990 and five of the top 10 2000 Gay Index regions also rank among the nation's top 10 high-tech regions. In virtually all of our statistical analyses, the Gay Index did better any than other individual measure of diversity as a predictor of high-tech industry. Gays not only predict the concentration of high-tech industry, they also predict its growth. Four of the regions that rank in the top 10 for high-technology growth from 1990–1998 also rank in the top 10 on the Gay Index in both 1990 and 2000. In addition, the correlation between the Gay Index (measured in 1990) and the Tech-Pole Index calculated for 1990–2000 increases over time. This suggests that the benefits of diversity may actually compound.

There are several reasons why the Gay Index is a good measure for diversity. As a group, gays have been subject to a particularly high level of discrimination. Attempts by gays to integrate into the mainstream of society have met substantial opposition. To some extent, homosexuality represents the last frontier of diversity in our society, and thus a place that welcomes the gay community welcomes all kinds of people.

THE BOHEMIAN INDEX

As early as the 1920 studies by Robert Park, sociologists have observed the link between successful cities and the prevalence of bohemian culture (Park et al., 1925). Working with my Carnegie Mellon team, I developed a new measure called the Bohemian Index, which uses Census occupation data to measure the number of writers, designers, musicians, actors, directors, painters, sculptors, photographers, and dancers in a region. The Bohemian Index is an improvement over traditional measures of amenities because it directly counts the producers of the amenities using reliable Census data. In addition to large regions, such as San Francisco, Boston, Seattle, and Los Angeles, smaller communities such as Boulder and Fort Collins, Colorado; Sarasota, Florida; Santa Barbara, California; and Madison, Wisconsin, rank rather highly when all regions are taken into account.

The Bohemian Index turns out to be an amazingly strong predictor of everything from a region's high-technology base to its overall population and employment growth. Five of the top 10 and 12 of the top 20 Bohemian Index regions number among the nation's top 20 high-technology regions. Eleven of the top 20 Bohemian Index regions number among the top 20 most innovative regions. The Bohemian Index is also a strong predictor of both regional employment and population growth. A region's Bohemian presence in 1990 predicts both its high-tech industry concentration and its employment and population growth between 1990 and 2000. This provides strong support for the view that places that provide a broad creative environment are the ones that flourish in the Creative Age.

TESTING THE THEORIES

Robert Cushing of the University of Texas has undertaken to systematically test the three major theories of regional growth: social capital, human capital, and creative capital. His findings are startling. In a nutshell, Cushing finds that social capital theory provide little explanation for regional growth. Both the human capital and creative capital theories are much better at accounting for such growth. Furthermore, he finds that creative communities and social capital communities are moving in opposite directions. Creative communities are centers of diversity, innovation, and economic growth; social capital communities are not.

Cushing went to great pains to replicate Putnam's data sources. He looked at the surveys conducted by a team that, under Putnam's direction, did extensive telephone interviewing in 40 cities to gauge the depth and breadth of social capital. Based on the data, Putnam measured 13 different kinds of social capital and gave each region a score for attributes like "political involvement," "civic leadership," "faith-based institutions," "protest politics," and "giving and volunteering." Using Putnam's own data, Cushing found very little evidence of a decline in volunteering. Rather, he found that volunteering was up in recent years. People were more likely to engage in volunteer activity in the late 1990s than

they were in the 1970s. Volunteering by men was 5.8 percent higher in the five-year period 1993–1998 than it had been in the period 1975–1980. Volunteering by women was up by 7.6 percent. A variety of statistical tests confirmed these results, but Cushing did not stop there. He then combined this information on social capital trends with independent data on high-tech industry, innovation, human capital, and diversity. He added the Milken Institute's Tech-Pole Index, the Innovation Index, and measures of talent, diversity, and creativity (the Talent Index, the Gay Index, and the Bohemian Index). He grouped the regions according to the Tech-Pole Index and the Innovation Index (their ability to produce patents).

Cushing found that regions ranked high on the Milken Tech-Pole Index and Innovation Index ranked low on 11 of Putnam's 13 measures of social capital. High-tech regions scored below average on almost every measure of social capital. High-tech regions had less trust, less reliance on faith-based institutions, fewer clubs, less volunteering, less interest in traditional politics, and less civic leadership. The two measures of social capital where these regions excelled were "protest politics" and "diversity of friendships." Regions low on the Tech-Pole Index and the Innovation Index were exactly the opposite. They scored high on 11 of the 13 Putnam measures but below average on protest politics and diversity. Cushing then threw into the mix individual wages, income distribution, population growth, numbers of college-educated residents, and scientists and engineers. He found that the high-tech regions had higher incomes, more growth, more income inequality, and more scientists, engineers, and professions than their low-tech, but higher social capital counterparts. When Cushing compared the Gay and Bohemian Indexes to Putnam's measures of social capital in the 40 regions surveyed in 2000, the same basic pattern emerged: Regions high on these two diversity indexes were low on 11 of 13 of Putnam's categories of social capital. In Cushing's words, "conventional political involvement and social capital seem to relate negatively to technological development and higher economic growth." Based on this analysis, Cushing identified four distinct types of communities. The analysis is Cushing's; the labels are my own.

- *Classic Social Capital Communities.* These are the places that best fit the Putnam theory—places such as Bismarck, North Dakota; rural South Dakota; Baton Rouge, Louisiana; Birmingham, Alabama; and Greensboro, Charlotte, and Winston-Salem, North Carolina. They score high on social capital and political involvement but low on diversity, innovation, and high-tech industry.
- *Organizational Age Communities.* These are older, corporate-dominated communities such as Cleveland, Detroit, Grand Rapids, and Kalamazoo. They have average social capital, higher-than-average political involvement, low levels of diversity, and low levels of innovation and high-tech industry. They score high on my Working Class Index. In my view, they represent the classic corporate centers of the organizational age.
- *Nerdistans.* These are fast-growing regions such as Silicon Valley, San Diego, Phoenix, Atlanta, Los Angeles, and Houston, lauded by some as models of rapid economic growth but seen by others as plagued with sprawl, pollution, and congestion. These regions have lots of high-tech industry, above-average diversity, low social capital, and low political involvement.
- *Creative Centers.* These large urban centers, such as San Francisco, Seattle, Boston, Chicago, Minneapolis, Denver, and Boulder, have high levels of innovation and

high-tech industry and very high levels of diversity but lower than average levels of social capital and moderate levels of political involvement. These cities score highly on my Creativity Index and are repeatedly identified in my focus groups and interviews as desirable places to live and work. That's why I see them as representing the new creative mainstream.

In the winter of 2001, Cushing extended his analysis to include more than three decades of data for 100 regions. Again he based his analysis on Putnam's own data sources: the 30-year time series collected by DDB Worldwide, the advertising firm, on activities such as churchgoing, participation in clubs and committees, volunteer activity, and entertaining people at home. He used these data to group the regions into high and low social capital communities and found that social capital had little to do with regional economic growth. The high social capital communities showed a strong preference for "social isolation" and "security and stability" and grew the least—their defining attribute being a "close the gates" mentality. The low social capital communities had the highest rates diversity and population growth.

Finally, Cushing undertook an objective and systematic comparison of the effect of the three theories—social capital, human capital, and creative capital—on economic growth. He built statistical models to determine the effect of these factors on population growth (a well-accepted measure of regional growth) between 1990 and 2000. To do so, he included separate measures of education and human capital; occupation, wages, and hours worked; poverty and income inequality; innovation and high-tech industry; and creativity and diversity for the period 1970–1990.

Again his results were striking. He found no evidence that social capital leads to regional economic growth; in fact the effects were negative. Both the human capital and creative capital models performed much better, according to his analysis. Turning first to the human capital approach, he found that while it did a good job of accounting for regional growth, "the interpretation is not as straightforward as the human capital approach might presume." Using creative occupations, bohemians, the Tech-Pole Index, and innovations as indicators of creative capital, he found the creative capital theory produced formidable results, with the predictive power of the Bohemian and Innovation Indexes being particularly high. Cushing concluded that the "creative capital model generates equally impressive results as the human capital model and perhaps better."

DIRECTIONS FOR FUTURE RESEARCH

The nature and function of the city is changing in ways and dimensions we could scarcely have expected even a decade or two ago. For much of the past century the city has been viewed as a center for physical production and trade, industrialization, and the agglomeration of finance, service, and retail activities. Our theories of the city are all based on the basic notion of the city as an arena for production and largely based on activities that take place in the city during the daylight hours. Similarly, our theories of community are largely based on notions of the tightly knit community of the past, a community defined by strong ties—a conceptual theme that has been revived by the work of Robert Putnam and widespread interest in social capital both inside academe and in public policy circles.

But, as this article has tried to show, the past decade has seen a sweeping transformation in the nature and functions of cities and communities. My own field research, as well as the research of others, has shown the preference for weak ties and quasi-anonymity. Social capital is at best a limited theory of community—one that fits uneasily with many present-day realities. Magically invoking it will not somehow recreate the stable communities characterized by strong ties and commitments of the past. On this score, the key is to understand the new kinds of communities—communities of interest—that are emerging in an era defined by weak ties and contingent commitments. Much more research is needed on these and related issues.

Our theories of cities, neighborhoods, and urban life are undergoing even more sweeping transformation. Sociologists such as Terry Clark, Richard Lloyd, and Leonard Neuvarez have been dissecting the new reality of the city as a center for experience, lifestyle, amenities, and entertainment (see, e.g., Lloyd and Clark, 2001, pp. 357–378; Lloyd, 2001; Glaeser, Kolko, and Saiz, 2001, pp. 27–50; Neuvarez, 2003). This shift is not only noticeable in cities such as San Francisco, Seattle, and Boston, which have long been centers of culture and lifestyle, but in older industrial cities such as Chicago, which have been dramatically transformed into centers of entertainment, experience, and amenity. According to Clark, entertainment has replaced manufacturing and even services as Chicago's "number 1" industry. Understanding the city as an arena for consumption, for entertainment, and for amenities—a city that competes for people as well as for firms, a city of symbols and experiences, the city at night—is a huge research opportunity for sociology, geography, and related disciplines.

At the organizational level, there is a great need for research on the factors that motivate creative people and how organizations and workplaces can adapt. We are at the very infancy of organizational and workplace experiments on how to motivate creative people. Recent experiments with open office design, flexible schedules, and various accoutrements are only the very beginning. Research on the psychology of creativity by Teresa Amabile (1996), Robert Sternberg (1999), and others shows that creativity is an intrinsically motivated process and further suggests that the use of extrinsic rewards, such as financial incentives, may actually be counterproductive to motivating creative work. This suggests that both academic economists and professional managers have gone off in the wrong direction, particularly during the 1990s, with the use of stock options and other forms of equity compensation to motivate creative workers. A great deal more research is needed on the intrinsic factors that motivate creative workers and, even more importantly, on the characteristics and factors associated with organizations and workplaces that can best motivate and enhance creative work.

Turning now to larger macrosocietal questions. The past several decades have seen a dramatic shift in the underlying nature of advanced capitalist economies, from a traditional industrial-organizational system based on large factories and large corporate office towers, and premised on economies of scale and the extraction of physical labor, to newer, emergent systems based on knowledge, intellectual labor, and human creativity. Understanding the underlying dynamics of the system, the social structures on which it rests, the kinds of workplace transformations it is setting in motion, and its effects on community as well as city form, structure, and function is a tremendous opportunity for research. In *The Rise of the Creative Class* I try to identify some of these underlying changes and the structural transformations they have set in motion as workplaces, lifestyles, and communities all

begin to adapt and evolve in light of these deep economic and social shifts. That work is my best first pass, but there is much, much more to do.

A final and critically important avenue for research is to begin to get a handle on the downsides, tensions, and contradictions of this new Creative Age—and there are many. One that I am exploring with my team is rising inequality. Our preliminary investigations suggest that inequality is increasing at both the inter-regional and intra-regional scales. At the inter-regional level, increased inequality appears to be a consequence of what we have come to call the “new great migration” as creative-class people relocate to roughly a dozen key creative regions nationwide. Other preliminary research, for example, by Robert Cushing at the University of Texas, suggests that Austin is importing high-skill creative-class people and exporting lower-skill individuals. The same pattern appears to hold for other creative centers. Inequality is also on the rise within regions. Preliminary research I have conducted with Kevin Stolarick indicates that inequality is highest in creative centers such as San Francisco and Austin. Then there is the question of the relationship between knowledge-based, creative capitalism and new types of workplace injury. At the turn of the century, during the explosion of industrial capitalism, there was great incidence and, later, great concern over physical injuries in the workplace. Eventually, after much examination and policy debate, there emerged mechanisms like OSHA to reduce physical injury in the workplace. In the Creative Age, when the mind itself becomes the mode of production, so to speak, the nature of workplace injury has changed to what I term “mental injury.” Sociologists and social psychologists have much to offer in identifying the factors associated with the increasing incidence of anxiety disorder, depression, substance abuse, and other forms of mental injury, and their relationship to creative work. I often make an analogy to Charlie Chaplin’s *Modern Times*: The creative-class worker racing frantically to keep up with e-mails, telephone calls, and other aspects of information overload resembles Chaplin’s assembly-line worker frantically trying to keep up with the assembly line—but the creative-class worker has to do this on a 24/7, around-the-clock-basis. A great deal of research needs to be done on the incidence of mental injury and its relationship to new ways of working.

It will take a great deal more research to get a better handle on these underlying transformations and the economic and social shifts they have set in motion. I welcome the opportunity to contribute to this evolving understanding and to engage in a constructive dialogue with my colleagues across the social sciences, as we endeavor to better understand the rapidly changing social world in which we live.

Notes

¹ Sometimes, I think Putnam’s social capital world bears a bit of similarity to the world of Sinclair Lewis’s *Babbitt*—a conformist world where clubs and voluntary organizations were less the product of civic-mindedness and more about getting ahead and securing status. Writes Lewis:

Of a decent man in Zenith it was required that he should belong to one, or preferably two or three, of the numerous lodges and prosperity-boosting lunch-clubs; to the Rotarians, the Kiwanis, or the Boosters; to the Oddfellows, Moose, masons Red Men, Woodmen, Owls, Eagles, Maccabees, Knights of Pythias, Knights of Columbus, and other secret orders characterized by a high degree of heartiness, sound morals and reverence to the Constitution. (Lewis, 1922)

² The high-tech leaders are San Francisco, Boston, Seattle, Los Angeles, and Washington, DC; the innovation leaders are Rochester, San Francisco, Austin, Boston, and the Research Triangle.

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