

Urban Diversity and Cohesion: A Jacobsian Solution

SANFORD IKEDA

Web: <https://www.purchase.edu/live/profiles/624-sanford-ikeda>

Abstract: To try to understand a city means appreciating that it is a complex, dynamic process in which diversities must tend strongly to cohere and complement one another. I present the conditions for and virtues of urban diversity, as developed by the urbanist Jane Jacobs, and adjust her framework to account for subsequent urban evolution. I address the following questions: What is diversity and how does it arise? What are the conditions that enable complementarities and cohesiveness to emerge and to be maintained among heterogeneous persons, places, and things? Jane Jacobs uses reciprocating systems and social networks to address these questions. I argue that market-process analysis with its emphasis on entrepreneurial competition usefully complements Jacobs's approach to understanding large-scale social cooperation and cohesion.

I. THE PROBLEM OF SOCIAL COOPERATION

How do certain elements of a real, living city work together to spontaneously generate a complex urban order? Because such a city is largely the unplanned outcome of individual choices, rather than a preconceived, overall design (Bertaud 2018), grasping how a city works means approaching it from the bottom up, beginning with individual perceptions and choices, and tracing their consequences for social outcomes.

For Jane Jacobs, the key to understanding the dynamics of urban development is diversity. This raises several questions. Specifically, what is “diversity” in this context and how does it arise in urban environments? Given this diversity, what are the conditions that enable complementarities and cohesiveness to emerge out of it and to be maintained, among the heterogeneous persons, places, and things of a living city? In the presence of self-interested persons with limited information operating in a world of scarce resources, why should they choose freely (rather than through force) to associate with such diversity at all? For Jacobs the answer lies in the networks people form in public space. I argue that a market-process analysis, with its emphasis on entrepreneurship and the price system, easily complements Jacobs's focus on social networks as dual forces for large-scale social cooperation and cohesion.

We begin by defining for present purposes the meaning of diversity, and then analyzing the microfoundations of a living city to see what generates the needed diversity within it and what is responsible for turning that diversity into complementarity, integrating insights from economics and sociology based primarily on the work of Jacobs (1961). In particular, we will examine how the “built environment” of

a city, especially the design of its public spaces,¹ influences the patterns of social activity that then emerges within it.² Finally, we will explore how market-process theory can combine with Jacobs’s framework to offer a fuller explanation of how a living city achieves coherence among all that urban diversity.

II. MICROFOUNDATIONS OF JACOBSIAN ECONOMICS: WHAT GENERATES DIVERSITY?

According to Jacobs, a city that has achieved greatness (i.e. Tokyo, London, New York, Paris) does so because its inhabitants, other things equal, are better able than smaller settlements to take advantage of an enormous range of diversity in land use and in knowledge, skills, and tastes. The question then is how a great city achieves this. But what does “diversity” mean in this context?

First of all, diversity can refer to people, things, or places. I will be using diversity in all three ways. With respect to people, diversity refers to differences in their knowledge and ideas, skills, and tastes. There are of course a number of other important ways people differ from one another but I will focus on these for now. Notice that these differences are very real, despite being subjective and intangible. A diversity of people—owing to differences in personal background, culture, work experience, education, etc.—can create “social distance” (Ikeda 2012) among them, and so the challenge is to bring relative strangers together in such a way that their diversities complement one another rather than conflict; that they cohere in a way that benefits exceed costs. The same goes for the diversity of things and places.

The diversity of things refers to the uses to which people put physical objects such as buildings, cars, and roads. Now, although the things themselves are tangible, the uses to which people put them are purely subjective. That means the same physical object, such as a stone, can be put to different uses, such as part of a wall or as a paperweight; and objects that differ physically, such as a stone and a book, can be used in the same way, e.g. either to hold open a door or to place on a bookcase. And with respect to places, diversity refers to the different ways people perceive and use space; uses such as residential, business, entertainment, sacred, and so on. Again, although a particular land-use may be tangible, the same space may be used for different subjectively determined purposes, such as a gymnasium at different times of the day; or different spaces may be used for the same purpose, such as a restaurant or a church, either of which can serve as wedding venues.

Jacobs argues that to create an urban environment in which people feel safe and secure, a city needs to rely on a self-regulating harmony of diverse elements rather than on only formal policing.

A mixture of uses, if it is to be sufficiently complex to sustain city safety, public contact and cross-use, needs an enormous diversity of ingredients (Jacobs 1961, 144).

Section IV below will explain further why that is the case by showing how the four elements outlined below interact to generate the diverse, “organized complexity” necessary for a city to flourish. Here, I will first address the questions of whether diversity rather than formal policing is chiefly responsible for laying the groundwork for safety and security in a great city, and of how order is generated without a plan or conscious design? How does Jacobs explain this?

For Jacobs (1961), it is vital to attract people into a neighborhood at different times of the day and days of the week. We’ll use that as our starting point and then move on to three other factors that Jacobs emphasizes. Later I will update Jacobs’s analysis to current urban contexts.

Jacobs arrived at her “generators of diversity” through a combination of keen observation, extensive scholarship, and genius (Szurmak & Desrochers 2017). She concluded that in order to successfully generate land-use diversity, all four of the following conditions must hold and interact in an organized, complex process.

Two or more primary uses

The district, and indeed as many of its internal parts as possible, must serve more than one primary function; preferably more than two. These must insure the presence of people who go outdoors on different schedules and are in the place for different purposes, but who are able to use many facilities in common (Jacobs 1961, 152).

Jacobs argues that, in order to encourage large numbers of people to use public spaces at all times, there needs to be something in a particular location, for convenience let's call it a "neighborhood," to attract them to it. Once there, the dynamic of people attracting people can take hold. Jacobs called these attractors "primary uses." Primary uses give people a reason, an incentive, to enter a given neighborhood. A residence is one common primary use. Other uses of urban land include e.g. an office building, a high school, a courthouse, a shopping center, a multiplex movie theater, a bus or subway stop, a museum, or a medical practice. You can probably think of others, but remember that a primary use brings people from outside into a neighborhood.

Some spaces can serve multiple primary uses such as a schoolroom that doubles as a club-meeting room in the evening, or a high-school gymnasium that serves regular students during the day and hosts athletic events on weekends, or a civic plaza that accommodates a farmers' market outside regular working hours.

In order to fulfill the role of encouraging people to use public spaces at all times of the day and throughout the year, it's important that there be more than one primary use in the neighborhood. A single use, particularly a massive single use such as a sports arena or a residential complex, by taking up so much space often precludes more than one primary use in a neighborhood. Sometimes this is unavoidable if indeed the citizens of a locality demand such a single-massive use—or what Jacobs terms a "border vacuum" (Jacobs 1961, 257-69)—but when the facility is not in use it repels rather than attracts people. With multiple primary uses—e.g. a combination of residences, workplaces, and entertainment venues—it's more likely that there will be people on the streets, sidewalks, and plazas going about their business at different times of the day and night, perhaps looking for interesting things to do, including looking at other people.

It is this influx and outflux of strangers that radically differentiates a neighborhood of, say, 50,000 persons in a city of one-million from a small town of 50,000. A successful neighborhood is going to bring in many more people, most of whom are strangers to one another, from the outside during the day—as Joel Garreau (1991, 7) remarks, one sign of success is if the population increases between 9am and 5pm—than is typically the case in a town. Moreover, pound-for-pound, the people residing in and attracted to a big-city neighborhood will be weirder (i.e. socially distant) by almost any measure than what you would find in a small town.

But there are also land-uses that do not necessarily bring strangers into the neighborhood but cater to people who are already there because they have been attracted by a primary use. Jacobs calls this "secondary diversity." Examples of secondary diversity might include a fast-food restaurant, a laundromat, a grocery store, an elementary school, and a pharmacy. Occasionally a use that would ordinarily be secondary, a local restaurant perhaps, may become primary if its favorable reputation has spread to other places around the city or even to other cities. Also, over time, a plot of land currently serving as a secondary use, for example a local pharmacy, might be refitted, if local regulations permit, into a primary use such as specialty clothing shop, or if its hours of operation extend from regular business hours to 24/7. The reverse could also happen, of course, which would reduce local diversity.

One of the catch phrases of contemporary urban planning and development is "mixed uses." Developers often characterize new projects as "mixed use," by which they mean in addition to housing, the project might include retail space for shopping and eateries, perhaps a movie theater or even a primary school. But aside from the residential use, the other uses listed are secondary uses, not the primary ones that attract

people from outside the neighborhood or district. As a necessary factor for generating diversity, Jacobs was careful to specify “mixed *primary* uses.”

Population density

The district must have a sufficiently dense concentration of people, for whatever purpose they may be there. This includes people there because of residence (Jacobs 1961, 200).

Jacobs writes about the necessity of having a high concentration of people in a given location in order to supply, as it were, the raw material for “eyes on the street.” Without an adequate pool of people to fill public spaces as they work, shop, play, and so on, the informal social institutions that promote public safety and security, and the economic and cultural creativity that build upon them, will not spontaneously emerge.

Note, however, that Jacobs lists this as only one of the four generators of diversity. (In fact, she lists it last among the four.) It’s worth noting because much of the recent conversation in the urban-planning community has been about the virtues of population density, almost as if density were an end in itself; or how once population density has reached some critical level all the vitality and benefits of urbanism will somehow then emerge, without paying enough attention to other, equally important, factors. (This is somewhat ironic given how anti-density most urban planners were in the early 20th century.) But as we have seen, Jacobs is concerned less with population density itself than with land-use diversity. Density is a virtue only to the extent that it interacts with the other factors mentioned, below, to generate diversity. An overcrowded prison in California or Yankee Stadium during a home game both have high population densities, but without the diversity that emerges from all four of the generators that Jacobs discusses, neither would hardly be considered a real city, despite the large number of people involved.

It may be appropriate to mention here that Jacobs is careful to distinguish density from overcrowding. “Density” refers to the number of people or dwelling units per acre or square kilometer; “overcrowding” refers to the number of people in a dwelling unit (Jacobs 1961, 205). You can have a very high population density—the extremely wealthy Upper East Side of Manhattan has one of the highest population densities in the City of New York—without overcrowding. That’s because while the number of people per apartment may be low, the many high-rise buildings on the UES each contain a large number units per acre. (Incidentally, this is why as people grow wealthier the population density tends to fall even as dwellings per acre rises.) Generally speaking, overcrowding (too many people or families sharing the same dwelling) is undesirable. And it’s also possible for density to be too high, especially when the physical infrastructure in a neighborhood—the sewers, streets, power grid, etc.—cannot adequately accommodate those who are attracted to it, a problem that typically falls to city planners with uneven success (Bertaud 2018, xiii).

Finally, it’s no mystery why population density and congestion go hand-in-hand. Put a lot of people into a relatively small area and there are bound to be bottlenecks. High congestion, meaning a great many people using limited public space at some or all times, can sometimes make life miserable with the crowds, noise, smells and overall slowness and jumble. In a great city, however, congestion is often the setting for opportunity. When Rem Koolhaas speaks of the “culture of congestion” he means it in a good way; that a dynamic culture arises from congestion (Koolhaas 1994, 10). Jacobs, too, recognizes this connection, as well as the common foundation for both cultural and commercial creativity in cities.

[W]herever we find a city district with an exuberant variety and plenty in its commerce, we are apt to find that it contains a good many other kinds of diversity also, including variety of cultural opportunities, variety of scenes, and a great variety in its population and other users. This is more than coincidence. The same physical and economic conditions that generate diverse commerce are intimately related to the production, or the presence, of other kinds of city variety (Jacobs 1961, 148).

Density is one, but only one, of those conditions.

Short Blocks

Most blocks must be short; that is, streets and opportunities to turn corners must be frequent (Jacobs 1961, 178).

Always look to invest in properties on a corner! That's what my father used to tell me. I believe this is probably common sense in the real-estate industry. From a commercial point of view, a corner has the advantage of having more street frontage than a midblock unit, which means more passersby per hour. According to Joel Garreau (1991, 465), the rule of thumb for commercial success—and I believe this applies to shops in a mall as well as on outdoor streets—is to have about 17 persons per minute pass by your store during business hours, so locating on a corner roughly doubles the chances of meeting that minimum and increases your visibility. For a given area “short blocks” translates into more intersecting streets and therefore “more corners.” And while increasing the supply of corner properties would, other things equal, lower the real-estate value corner of properties, other things will not be equal if enough additional people use public space and help to make it flourish.

Now, Jacobs prescribes “short blocks” for a related but different reason. First, short blocks promote walkability. How so, since 100 yards is still 100 yards whether there is one street intersecting a block or none? That's because, up to a point, dividing a long block by one or even two streets draws pedestrians onward (though perhaps not car-drivers or bicycle-riders) farther than the 600 feet or so that William Whyte (as interpreted by Garreau (1991, 464)) estimates the average person will walk downtown, much as modern shopping malls no longer feature very long, straight, unbroken walkways. As Garreau (1991, 464-6) points out, it's a mistake for a mall-builder to let shoppers see exactly how far it is to the end of a mall, for fear that they may give up (and go back to their cars) before going all the way there. Some of the earliest malls made that mistake, but indoor and outdoor malls today are constructed so that the lines of visibility are rather limited, stoking a person's curiosity about what may be “just around the corner.”

The same principle applies to a city street: short blocks lend intricacy and visual interest to public spaces. Again, shorter blocks mean more intersections and as a result more ways to get from one point to another.

Throughout history the length of city blocks and the layout of city streets have been mostly the result of deliberate human design. From ancient cities in the Middle East (Kostof 1991) and Roman colonies (Vance 1990) to Medieval towns (Scott 1998) and Manhattan's more-recent grid plan of 1811 (Koeppel 2015), people have deliberately constructed a vital piece of the physical infrastructure onto what became the urban fabric. But there have been exceptions to this pattern, and even if an entire system is preplanned at a particular time there are always adjustments to that system over time that were not predicted and indeed could not have been predicted (Ikeda 2017). Manhattan is a good example of both phenomena. Its grid integrated both the largely unplanned matrix of streets in the part of the island that was first settled as well as the native-American path that ran along the spine of the island—what later became Broadway. Also, the Commissioners' original street grid didn't set aside any significant parkland, which decades later New York's municipal leaders corrected by designating a large area in the middle (at the cost of already existing settlements) for what became Central Park; something the earlier planners evidently hadn't considered; and the addition of two more avenues, Madison and Lexington, on the UES.³

The need for old, worn-down buildings

The district must mingle buildings that vary in age and condition, including a good proportion of old ones (Jacobs 1961, 187).

Aged buildings are a naturally occurring part of an organic, urban landscape, just as trees of different vintages, which add temporal variety to sylvan flora and fauna, are part of a healthy forest (Scott 1998). And just as you can't grow old trees, you can't build old buildings, though they are a critical ingredient of urban vitality. Why are they?

Quite simply, an aged, old, or worn-down building offers comparatively cheap space for people, often young people, with new ideas but little capital. Such a building typically has unpleasant or inconvenient aspects—its location isn't ideal, the floors are uneven, the plumbing unreliable, and the roof leaks. But in this case these things are, as they say, a feature not a bug. A building with a good location and reliable plumbing, because it's new or newly renovated, would be too costly for most people to use to test out new ideas. Only the already wealthy would be able to afford new digs and even they would tend to shun using them for risky experimentation. But an old, run-down building offers a promising-but-poor innovator to trade-off fewer amenities for more cheap space. If a living city is one in which economic development through innovation takes place (Ikeda 2012a), it needs somewhere, indeed many places, for people to incubate ideas, for trial and error. Old buildings in this way are ideal incubators, which is why Jacobs (1961, 188) declares, "New ideas need old buildings!"

You can find this sort of re-use of old buildings all over North America, Europe, and elsewhere where abandoned factories and warehouses become homes and studios to artists.⁴

I should note that Jacobs is not here referring to what today is known as the "landmarking" of historically significant buildings that lend distinction or character to a particular place.

By old buildings I mean not museum-piece old buildings, not old buildings in an excellent and expensive state of rehabilitation— although these make fine ingredients— but also a good lot of plain, ordinary, low-value old buildings, including some rundown old buildings (Jacobs 1961, 187).

Taking her cue from Kevin Lynch (1960) who wrote about the importance of landmarks to people in cities for navigating the urban landscape, Jacobs was a strong supporter of landmarking buildings of that sort. Such landmarking is typically associated with the costly restoration of buildings often located in high-rent areas where well-heeled local residents use political clout to pressure the municipality to do the preservation.⁵

Jacobs is careful to note that old buildings should "mingle" with newer ones. That's because if old, worn-down buildings dominate a neighborhood, it indicates its residents lack capital for local investment with an accompanying absence of primary uses, and that the neighborhood is probably in decline; what she calls a "slumming" slum. In the most general sense, however, a "slum" is simply a neighborhood where poor people live (or where they work, in the case of a commercial or industrial slum). It may well have enough primary and secondary uses to attract and, just as importantly, to retain people along with their social networks so there is increasing density (without overcrowding), land-use diversity, and rising per-capita wealth—i.e. it is "unslumming" (Jacobs 1961, 270). It's also the case that if there is a broad range of buildings of different vintages and sizes in a neighborhood, people incubating budding enterprises are likely to find many of the amenities they need nearby, which can also boost local development.

It's the interaction of these factors that generates diversity

According to Jacobs, these four factors complement one another over time and need to be present in the same neighborhood in order for diversity, and ultimately cohesive complementarities, to emerge and thrive. All four in combination are necessary to generate city diversity; the absence of any one of the four frustrates a district's potential (Jacobs 1961, 151).

Without mixed primary uses to operate as a people-attractors, for example, high population density won't supply eyes on the street; if there are mixed primary uses but very low population density there won't be enough people to occupy public space at different times to provide safety and to grow social networks;

blocks that are overly long will discourage pedestrian use and face-to-face contact, what Jacobs calls “small change from which a city’s wealth of public life may grow” (Jacobs 1961, 72); and without enough cheap space mingling with the new, a neighborhood will lack a crucial foothold for potential innovators—it may survive but won’t contribute to the long-term economic development of the city. All of these interact to enable complementary uses of people, places, and things.

Another point to keep in mind is that land-use and other forms of diversity can’t emerge or sustain itself unless social institutions—i.e. shared rules, norms, conventions, networks, and organizations—are stable enough that people can rely on them to make meaningful plans, especially for the long-term. It may sound paradoxical, but one of the factors important for stable populations and social institutions, is mobility: How easy is it for people to move from one part of the city to another either for daily commuting or for longer-term residence? If an area that is otherwise highly desirable to be in is difficult to enter or leave, it’s unlikely to generate much diversity because people will tend to avoid it. For example, if you know that living in “Lonely Gardens” means having an inconvenient commute—perhaps because of long distances from jobs and poor transport options, or because it abuts a dangerous area—this may raise costs enough to discourage you from moving there in the first place or staying there for very long if you do. That’s one of the problems with “slumming slums”: People want to get out as soon as they can; whereas “unslumming slums” are able to maintain reasonably healthy social institutions and connections that foster economic development because people remain long enough for social networks and social capital to take root and flourish (Jacobs 1961, 270-90).

Stable, however, doesn’t static. Social institutions need to be able to adapt to changing tastes, technologies, and resources; or to changes in demographics, lifestyles, and the natural environment (Ikeda 2012).

A diversity of land-use within any given area at different times, fosters an on-going process of creativity and innovation, and may promote urban resilience during an emergency. *The New York Times* architecture critic, Michael Kimmelman, observes for example that just after Hurricane Sandy severely damaged parts of the New York-New Jersey shoreline, clubs and other public spaces served as emergency shelters and gathering places for those threatened by or made homeless by the storm.

Less ravaged neighborhoods were more densely populated, with vibrant commercial strips and social networks, community gardens, parks and well-tended sidewalks. They drew people out of overheated homes and into the streets, shops, gardens, parks, and into libraries, too: places where there were things to do and friends to meet (Kimmelman 2013).

Not only could the same public space be used differently over long periods of economic development, the same place could be used for entirely different purposes and retasked very quickly if the social networks and social capital in the surrounding neighborhood are sufficiently robust (“multiplex” in the language of social-network theory) to enable strangers to come together in a crisis. As Kimmelman suggests, that kind of rapid adaptability and resilience is most likely where land-use is diverse.

Combined in an urban setting, these four generators of diversity enable ordinary people to draw on that diversity not only for their “necessaries, conveniences, and amusements” but to more effectively utilize the resulting complex divisions of labor to more easily and effectively explore and experiment⁶ and to adjust to sometimes rapid, unexpected change.

III. UPDATING AND ELABORATING ON JACOBS’S FOUR GENERATORS OF DIVERSITY

It might be argued that Jacobs’s analysis is limited to American cities in the mid-twentieth century. That she was focusing on “great” cities and not on smaller cities or towns, she herself concedes. A “great city” in her framework being *sui generis* (Jacobs 1961, 16). That it was limited specifically “American” cities is more debatable. It’s true that the examples in her 1961 book draw mainly from the United States, although her later

writings include other North American, Asian, and European cities.⁷ However, urbanists from around the globe acknowledge the relevance of her insights to their locations. In any case, Jacobs herself would not insist on slavish adherence to her principles. Indeed, I believe she would insist, as an inductivist (Jacobs 1961, 440), on changing or rejecting them if we observe patterns that contradict the ones she describes in her books and we were able to provide reasonable explanations different from hers for those patterns.

What I would like to do here then is to offer some extensions to and re-interpretations of her “four generators of diversity” in order to address some of these criticisms and to show that her “four generators of diversity” are sufficiently robust to continue to explain how a great city achieves cohesion among that diversity.

I’ve already noted that we can usefully and legitimately extend her concept of diversity to include the knowledge, skills, and tastes as well as the backgrounds of people. Indeed, this is implicit when we talk about land-use diversity, proper, because what leads some to open a Thai grocery and others a bodega is precisely their human capital and preferences.

Reimagining “mixed primary uses”

While it’s crucial to retain the idea of a primary use as an “attractor” and not to confuse a primary use with “secondary diversity,” some might interpret Jacobs as saying that primary uses must attract people on foot, not people in cars. But Jacobs does not denigrate the automobile as such. In her chapter on “Erosion of cities or attrition of automobiles” Jacobs says (1961, 338-9), for example, “But we blame the automobile for too much” and goes on to say,

Suppose automobiles had never been invented, or that they had been neglected and we traveled instead in efficient, convenient, speedy, comfortable, mechanized mass transit. Undoubtedly we would save immense sums which might be put to better use. But we might not. For suppose we had been rebuilding, expanding and reorganizing cities according to the project image and other anti-city ideals of conventional planning. We would have essentially the same results I blamed on automobiles a few paragraphs back.⁸

But even more important than how they get around—by transit, by car, on foot—is what people do, how they interact or don’t interact with one another, once they get out of their cars, trains, etc. wherever that may be. Because no matter how ubiquitous the car (and now the internet) has become, it’s still the case that people interact with one another, to a greater or lesser degree, face-to-face and informally (Christakis & Fowler 2009, 275) in essentially the way they did in the 1950s on Jane Jacobs’s Hudson Street in Greenwich Village.

The places where these interactions take place look superficially different today and one main driver of that change (no pun intended) has of course been the car. For now I would like briefly to look at the some of the major patterns of urban development in the 20th century and then say something about the limits of social media as a substitute for face-to-face contact. After all, what’s the point of primary uses if there are no people going out into public space to attract?

Joel Garreau, author of *Edge City: Life on the New Frontier*, identifies three waves in 20th century urban development in the United States. The “first wave” is the era of the large-scale, residential subdivision and of mass suburbanization, which took place largely right after World War II. Since Gertrude Stein lamented about her childhood home of Oakland, California that “there’s no there there” people have equated suburbia with placelessness, the absence of identity, homogeneity of population, and a lack of land-use diversity. The “second wave” begins in the 1960s as businesses leave downtown and set up in newly created malls in the suburbs where people have moved, now establishing two broad categories of primary use outside traditional downtowns: residential and commercial. The “third wave” begins in the 1990s as office parks and other “industrial” uses cluster with residential and retail centers in suburbs and the even more distant “ex-

urbs” near airports and where interstate highways intersect outside the central city. The consequence is the emergence of what Garreau claims is a totally new phenomenon: The “edge city“ (Garreau 1991, 6-7) that

- 1) Has five million or more square feet (465,000 m²) of leasable office space.
- 2) Has 600,000 square feet (56,000 m²) or more of leasable retail space.
- 3) Has more jobs than bedrooms.
- 4) Is perceived by the population as one place.
- 5) Was nothing like a “city” as recently as 30 years ago. Then it was just bedrooms, if not cow pastures.

So the continuing demand for physical contact is borne out by the emergence of the edge-city phenomenon. For example, Nicholas Christakis and James Fowler (noted earlier) finds that while we may have a large number of “friends” on a social media app such as Facebook, we have much more contact with some people than others. And who are they?

While many users of social networking sites have hundreds or even thousands of people they list as friends, it turns out that the average user has approximately 110 friends on Facebook. And it is clear that only a subset of these are close friends. To figure out who was close and who was not, we developed a “picture friends” method based on the photographs that people post on their Facebook pages. The idea is that two people who post and “tag” pictures of each other are much more likely to be socially close than those who do not. We studied all the Facebook pages at a college (we can’t say which one), and when we counted the number of picture friends that students had, we found that, on average, just 6.6 were close friends (Christakis & Fowler 2009, 275-6).

Again, those internet friends tend to be people we regularly see face to face anyway. Outside of family they are the ones we feel most strongly tied to. They are people we see regularly face-to-face and know relatively much about.

Malcolm Gladwell, journalist of the social sciences and bestselling author of *The Tipping Point*, points out that when it comes to risky endeavors, the effectiveness of social media is limited by how well the people connected by it already know and trust one another.⁹

The platforms of social media are built around weak ties. Twitter is a way of following (or being followed by) people you may never have met. Facebook is a tool for efficiently managing your acquaintances, for keeping up with the people you would not otherwise be able to stay in touch with. That’s why you can have a thousand “friends” on Facebook, as you never could in real life. <http://www.newyorker.com/magazine/2010/10/04/small-change-malcolm-gladwell>

He goes on to say,

The drawbacks of networks scarcely matter if the network isn’t interested in systemic change—if it just wants to frighten or humiliate or make a splash—or if it doesn’t need to think strategically. But if you’re taking on a powerful and organized establishment you have to be a hierarchy.

A network such as Facebook consists of *horizontal* relationships among equals; a hierarchy is a *vertical* relationship among persons of unequal authority or status. His examples of such hierarchies include the Freedom Riders in the Deep South during the 1960s civil-rights movement or more in more recent clashes between organized citizens and public authorities in the Middle East. Risky change of this kind means following orders and placing yourself in harm’s way or keeping from succumbing to the passions and fears of the moment, all without close monitoring by your superiors. That in turn requires discipline and strong ties. Facebook and Twitter on the other hand are useful for building networks of weakly tied individuals or,

as was the case in Cairo during the “Arab Spring” of 2010, as a tool for coordinating the actions of people who are already strongly tied through other means. Strong ties—e.g. ties of family or among deeply committed coreligionists—bind individuals into effective formal and informal organizations. Though not impossible, it’s very hard to motivate strangers in large numbers to risk making significant personal sacrifices for other strangers or abstract concepts. In other words, to be effective in high-risk situations, social media need to link together people willing to operate in a hierarchy with strong ties among its members who are able to trust (in a sense that I clarify in Ikeda (2012, 121-4)) those “in charge.”

But weak ties are especially important for the operation of the competitive market process (Ikeda 2012, 114-9). For now, the take-away is simply that in order for certain actions to take place, especially those involved in significant social change, social media alone isn’t enough. Rather, personal knowledge gained from face-to-face contact, as well as norms that encourage informal, self-monitoring, remain essential, along with the freedom that allows people to make and break their social ties.¹⁰

But there is no gainsaying that online shopping, for example, has had a dramatic impact on how people interact and the degree to which they do so face-to-face (FTF). Bookstore chains that dominated the urban landscape in the 1990s have been disappearing, albeit not altogether as specialized bookstores remain serving a different niche than before.¹¹ Communication-at-a-distance can of course substitute for FTF contact up to a point, but I would suggest that such technical advance serves more to complement traditional human relations. In that way, mixed primary uses would continue to play a vital role in the generation and use of diversity in cities.

Reimagining “short blocks”

The virtues of FTF contact go beyond the ability to get to know one another on a more personal level and to strengthen ties. In fact, making (and breaking) weak ties is an essential part of a successful urban process (Ikeda 2012, 114-28). From the point of view of the dynamics of economic development FTF contact creates opportunities for people to make new ties, to use them if and when the opportunity arises, and to spread information outside their local networks, whether they want to or not, mainly through weak ties. Much of this can occur deliberately or simply through casual or serendipitous contact, if social institutions and the design of public spaces allow for it. Having so-called “short blocks” is, as we’ve seen, an important aspect of the urban-design aspect.

For most of the 20th century urban-design theory was dominated by the “superblock” concept which had the effect, intended and unintended, of putting as much space as possible between people. This is especially true of the urban approach of Frank Lloyd Wright and Ebenezer Howard, while Le Corbusier is a mixed case. Much of this was in response to the rapidly growing urbanization, and the negative externalities that accompanied it, that took place in Europe during the 19th century and in the United States to Garreau’s “three waves.”

Although malls are partly the unintended consequence of public policy, I will for now interpret them as an attempt by consumer demand to assert itself. Victor Gruen saw in the enclosed shopping mall an opportunity to recreate the vibrant street life of his native Vienna, Austria (Hardwick 2004). Since the 1990s, even as malls grew to enormous size, they continued to develop the earlier malls’ themes of walkability and intricacy. And with the advent of cheaper outdoor heating and cooling technology, malls began to shed their enclosures. These relatively recent urban structures, which we find increasingly in downtowns in more permeable forms, have supplemented rather than replaced the intricate short blocks of historical downtowns.¹²

Reimagining “old, worn-down buildings”

To the extent that old buildings effectively serve to incubate new ideas, they are or will become scarcer, i.e. in order to get more of it you have to give up something of value. And the more willing and able people

are to pay for these spaces, other things equal, the pricier they become. What keeps prices down? On the supply side, every building standing today grows older and more worn down by the moment. For some building owners and in some circumstances the resulting depreciation may be less than the cost of repair and renovation, and if the maximum someone would pay for that space covers those costs, i.e. if someone thinks the value of the refurbished building exceeds the costs, then the renovation will take place. In that case, the price will probably be too high for the bright-but-poor entrepreneurs earlier in our story. But in other circumstances it won't pay an owner to undertake costly renovations, and so the supply of old, worn-down buildings will increase over time. Whether on net the increase in old buildings will outnumber top-to-bottom renovations will depend on how rapidly the demand for "innovation space" rises relative to the supply and also on the rate of new construction, which both competes with old buildings for tenants on the demand side and on the supply side starts the clock on the process of adding to the supply of old buildings.

The fundamental question, however, is how do those who control scarce resources ration them among those who would like to use them? As noted, rich people will tend to shun old buildings unless they intend to renovate them. But who decides who gets space in buildings that go unrenovated? In a market, it's simply a matter of competition among buyers: Whoever is willing and able to pay the most will get the space. Whether through connections or crowdsourcing, people with little financial capital and a powerful vision will struggle to find a way. It's the same way other things are bought and sold on a market where buyers and sellers are free to adjust prices, quantities, qualities, and other relevant factors. So one method of rationing is to let competition of buyers among buyers and of sellers among sellers determine it.

Another path to cheapen space for trial-and-error is for someone to subsidize the experimenters. A time-honored source of subsidy is parents and friends. Other examples of private subsidy include how in the 1970s the Walentas family famously offered low- and zero- price rentals to artists to kickstart development in what has become the wildly successful "Dumbo" district in Brooklyn, New York.¹³ Of course, another way to cheapen space is to get taxpayers to subsidize it.

But the economics of subsidies is entirely different from that of market competition. Whether private or public, subsidies tend to be rationed according to someone's personal judgment on the basis of something other than willingness and ability to pay. How is that different from the market method? To the extent that rationing takes place solely on the basis of ability-and-willingness to pay, the process is entirely *impersonal*: It doesn't matter whether buyer and seller know each other, belong to the same ethnic or cultural group, have the same social connections, and so on. But to the extent that the rationing process is not impersonal, someone who wishes to buy or rent a subsidized space has to demonstrate that she is somehow deserving—e.g. she's a poor artist or an entrepreneur under 30-years old or comes from Iceland like the subsidizer—these factors are more likely to come into play. In other words, to the extent the decision is not market-based, an outcome that most people would regard as fair may be more difficult to achieve because the deciding criteria tend to be more personal.

Note that a private benefactor, or her agent, is still making decisions based on the benefactor's own preferences and budget. As a result, the basis for determining success from the point of view of the ultimate interests involved, whosever they may be, are harder to pin down. Success and failure of any kind of subsidy is harder to determine without the profit and loss signals markets provide. But even though both private and public subsidies suffer from this weakness vis-à-vis pure market competition, public subsidies tend to have softer budget constraints and are further removed from market tests of profit and loss. And since the taxing powers of a government typically make available much larger sums than private subsidies, the consequences of error are, other things equal, potentially much greater and the incentive to avoid error are correspondingly smaller. If people in government had perfect knowledge—i.e. enough knowledge such that they would never regret any policy decisions they make—if they wished to they could plan perfectly. In fact, if knowledge were perfect we would have much less need for cities, as most of the advantages of a great city comes from the unknown and unknowable opportunities they represent. Markets and cities are human ways of discovering and coping with our ignorance and harnessing our creativity.

Finally, another private option that has emerged in New York and other cities where real-estate prices are sky-high, is for several start-up companies to share office space. “Shared office space” and “shared co-living space”¹⁴ highlight another advantage of a private approach over public subsidy: The greater possibility, where social institutions enable economic knowledge and incentives to play the determining role, to spur innovation in the very provision of innovation via profit and loss in unanticipated ways.

Reimagining “population density”

In his 1991, Joel Garreau declared, “Density is back!” (Garreau 1991, 37). After the first wave of decentralizing, low-density urban sprawl following World War II, and the second wave of suburban commercial “mallings” beginning in the 1970s, we have noted how Garreau sees in “Edge Cities”—newly emerged, car-based, multi-use developments—a novel setting for population density. Their “five million plus square feet of office space,” combined with “six-hundred thousand square feet of retail” and “more jobs than bedrooms” reflect an updated, car-based version of Jacobsian urbanism and means that an edge city, at least to those who inhabit them, represents a unique “place” and not a placeless exurb. What once might have been sprawl has evolved, between World War II and the 1980s, into a new kind of city, in Jacobs’s sense of a city as an engine of innovation and economic development (Jacobs 1969, 262).¹⁵

Gordon and Ikeda (2007) propose an alternative to conventional density called “Jacobs Density,” in which we tried to capture the interdependence among proximity, population size, and diversity. We defined *Jacobs Density* as “the level of potential informal contacts of the average person in a given public space at any given time” (Gordon & Ikeda, 2011, 448). It’s the number of possible connections within a given group of people. Jacobs is one of the first to introduce the term “social capital” as it is commonly used today into the literature of social theory (Jacobs 1961, 138) and one of the first to recognize the epistemic significance of what today social-network theorists refer to as “hubs” (Barabasi 2003), which she terms “public characters”¹⁶ who offer what she calls “hop and skip relationships” (Jacobs 1961, 134). Jacobs density then is simply an extension of the idea of social capital. The caveat discussed in Part II about the current over-emphasis among some urbanists on density still holds, however.

But how do cities and the economic processes within them help to balance diversity and cohesion?

IV. THE MARKET PROCESS, JACOBS, AND THE PROBLEM OF DIVERSITY AND COHESION

We have seen how these two apparently opposing forces of diversity and cohesion are essential to urban vitality.

While not all diverse elements in a population are complementary, or may not be at any particular moment, it’s important to note that productive complementarities cannot exist at all unless people perceive¹⁷ differences among people, places, and things. Complementarity presupposes heterogeneity. If each of us saw all people and resources as the same then everything would be perfect substitutes for one another, such as marchers in a parade whose individuality is irrelevant to or indeed incompatible with the cohesion of the overall order, or they would compete equally for our attention. Complementarity would not be possible. And there would be little reason for people to associate with one another unless they saw enough complementary diversity among themselves to make associating worthwhile. (This is a version of the principle of comparative advantage or, as Mises (1963, 159) terms it, the Ricardian Law of Association.)

Beyond merely perceiving differences among diverse elements, for a person to regard those elements as complementary, as fitting together in a way that is more useful to her or to someone else than the individual elements by themselves, she needs to see them as part of a plan (Lachmann 1978, 54). That is, she needs to have a goal in mind that the elements she perceives can in her estimation help her to achieve. If she wants to drive from New York to Chicago then a car and a map—two otherwise very heterogeneous elements—would

be complementary to getting there. On the other hand, for different goal, such as commuting to work, a car or a map or both may in her estimation be unnecessary or counter-productive.

It's also possible that people have a plan, and do see potentially complementary diversities around them but a community's rules, norms, or conventions that somehow discourage engaging with outsiders or engaging with them only so far—"we don't associate with those kind of people"—prevent their harnessing and thereby devalue those diversities. In such cases what make a person, place, or thing unique or different from others would be an obstacle to social cooperation. In other words, the value of diversity would fall to the extent that people are prevented or discouraged from relying on or interacting with that which is different from themselves. Heterogeneity would be an obstacle to cohesion.

Again, the questions we have been addressing are: What are the conditions that enable complementarities and cohesiveness to emerge and be maintained among diverse, heterogeneous persons, places, and things? What factors determine the balance between diversity and cohesion? What are the forces that maintain or adjust that balance under changing conditions (which Jacobs refers to as "dynamic stability" (Jacobs 2000, 84))? How does a city successfully enable this? In particular, in the presence of self-interested persons with limited information operating in a world of scarce resources, how to encourage them to choose freely (rather than through force) to associate with strangers at all?

We have noted earlier in our discussion of Jacobs's "four generators" that if the inhabitants of a city don't feel safe in public, if they are afraid to allow themselves to be vulnerable among strangers (which is a form of trust), there is little chance that they will want to seek out productive complementarities with others they don't know or who are outside their immediate social network. If people in a settlement don't generally feel safe in public spaces, they would be discouraged from exploiting their diversity or uniqueness. Complementary diversities might indeed exist, but it would not be to anyone's advantage to connect with strangers, or as much of an advantage as they could be. Other things equal, the absence of a general feeling of safety would at the same time discourage anyone from choosing to increase her uniqueness by differentiating how she looks and behaves or what she does. Feeling unsafe in public hampers the creation and utilization of diversity, and perhaps channels our energies in ways that are less open to people we don't already know well, even as it retards the development of diversity, either through personal development or the immigration of socially different people into a city.

While hiring people who specialize in maintaining public safety, e.g. a police force, may be one way to achieve a feeling of public safety, a successful city is one that enables safety to arise with a minimum of conscious direction or professional policing. As Jacobs points out (1961, 32) if the only way to maintain public order is by placing formal security on every street corner, that's a sign of a failing city. How then have cities historically achieved public safety informally?

Jacobs begins with the observation that we are less likely to behave in a threatening or provocative manner if we are being watched than if we don't think we're being watched. So in most cases, the more likely it is that at any given moment we believe someone is watching us, the more restraint we will tend to show. Contrariwise, if there is no one else around to see us then, other things equal, we will tend to feel less constrained to act aggressively toward others. It's probably not even necessary to believe that someone will actually intervene; often the mere fear of public disapprobation is enough for us to refrain from anti-social conduct or at least to act with greater circumspection.

The first step then is to find a way to get more unofficial "eyes on the street" or people who, while they may be strangers to us, are still familiar with the norms of the particular public space they are in to know whether those norms encourage or discourage private intervention should a threatening situation arise. That is, can we trust that if we get involved someone else has "got our back" so that we won't be acting alone. Keep in mind though that the number of people who occupy the same public space, say a public park, may vary a lot depending on the time of day, the day of the week, the weather, the season, and so on. Different people come out to use the public space the same way and the same people will at times to use it differently. Compelling people to use public space at different times, to attend parades or rallies for instance, may be a way to achieve this but at the cost of reducing personal freedom and a loss of spontaneity. If that's not ap-

pealing to us then the second problem is to provide positive incentives to get a lot of people to use public spaces at all times.

If we look around our own neighborhoods, we'll notice that people will use public space voluntarily if there's something to attract them into the public space, or, in other words, if there is a diversity of *primary uses* in that space: i.e., different uses of different spaces or different uses of the same space at different times. It's also the case that people attract people, in part because there is "safety in numbers," which is why the condition of *high population density* is important. We may have no particular reason to go out in public other than that we like watching other people, and perhaps like being watched by them in turn. This kind of land-use diversity within the same neighborhood or location of the city, created especially (though not exclusively) by people supplying or demanding different goods and services, are attractors of people who unintentionally provide a public service: "eyes on the street." And the more diverse the uses of public space—for schools, residences, offices, museums, movie theaters, night clubs, shopping, commercial, etc.—the more likely that these attractors will operate at different times.

We have seen that commercial office space gets people to use the streets, sidewalks, and plazas in the morning, at lunch, and in the late afternoon. Residences work this way in the morning and at night. Movie theaters draw throughout the day but serve especially well at night and on weekends, as do museums, bars, restaurants, and coffee houses. Even municipal buildings such as post offices and courthouses serve this limited function. But so-called "civic centers" between 6pm and 6am or on weekends tend to be deserted and lacking in interest. This is true of any single, massive use, governmental or private. The absence of *short blocks* and the presence of *border vacuums* can easily drain the life out of a neighborhood.

While in *Death and Life* Jacobs's main focus is on the diversity of land use rather than directly on the diversity of people, people will use a space, say a store front as nail salon or a coffeehouse, if they are allowed to, depending a great deal on their personal knowledge and situation or what economists call human capital and comparative advantage. Moreover, the kind of diversity that attracts people and provides the bedrock attribute of safety in a great city is not only diversity of land use (on the supply side) but also a diversity of tastes and an openness to or at least a tolerance of the new and the different (on the demand side).

Public Space versus Private Space

I have been using the terms "public space" and "private space." Let me clarify their meanings. Simply put, a *public space* is a place where you expect to encounter people who are to some degree strangers to you. These people include people you pass on the sidewalk for a moment and never see again, a clerk at a supermarket checkout counter whom you might have dealt with before, people in a restaurant or a shopping in a mall, a service representative at a car dealership, the plumber working on your kitchen sink, a specialist whom your primary physician refers you to, a neighbor that you may have met once at your child's ball game, or a new customer walking into your store. They range from utter strangers to what William Whyte (2009) has called "familiar strangers." They may be "socially distant" from you with different language, culture, ethnic, and religious backgrounds, but not total strangers, although they likely started off that way. A *private space* then is a place where you do not expect to encounter such strangers. These include your living room, private club, church, or CIA headquarters; and perhaps also the lunchroom at work.

So as I'm using the terms here, "public" and "private" have nothing necessarily to do with whether the space is controlled by a government entity or is privately owned. A coffeehouse may be privately owned but a public space in our sense, while CIA headquarters in Langley, Virginia is a publicly (government) owned place but it is a private space.

Of course, at any given time a given space could range somewhere in between public and private: a coffeehouse where you know some of the baristas and where there are a few regular customers whom you feel comfortable enough to carry on a conversation. And most offices have designated public spaces where customers interact and private spaces where workers and suppliers operate. So, again, the distinction between

public and private space has nothing directly to do with whether or not a government provides or occupies a particular place, but on whether or not people normally expect to encounter strangers there.

The degree to which people feel comfortable in a public space depends, other things equal, on how safe they feel around strangers. The larger the settlement the more likely it is you will encounter strangers in the normal course of a day, so safety in this sense becomes potentially more of a challenge in a given place the larger its population. But as we've seen, living cities solve this problem largely by the informal mechanism of land-use diversity and that Jacobs offers one approach. But what else would enable and encourage people to voluntarily provide land-use diversity? What other mechanism would transform diversity into a coherent set of complementary uses, and turn a potential social liability into an asset?

Markets Turn Diversity into Complementarity

That alternate mechanism consists of the incentives, institutions, and resulting choices that drive the market process. And the organizing principle of the market process as well as of the living city is competition, supported by norms such as fair play, honesty, reciprocity, and trust. A community of people with diverse, socially distant backgrounds creates a wide range of profit opportunities, of potentially complementary diversities. Other things equal, the more diverse they are the wider will be the range of such opportunities. There are profits to be made not only by substituting one use for another—e.g. a Shake Shack for a Burger King—but more importantly from the standpoint of innovation by bringing complementary uses together, e.g. connecting a car owner with time on her hands with someone who needs and is willing to pay for a ride. And in the urban-process, alertness to such profit opportunities and the discovery of radical ignorance is the role of entrepreneurship (Kirzner 1973). Thus, entrepreneurial competition is one of the main cohesive forces that transforms heterogeneous elements into complementary uses.

Of course, this discovery process is never perfect. But if the rules, norms, conventions, institutions, and organizations of a social order enable flexible mobility and adjustment in the face of unexpected change, if there is tolerance of the practice of and outcomes from the competitive process, the consequences will tend to be coherent and reasonably stable.

It's the same with science. When the practice of science is healthy, beliefs old and new are open to challenge and radical criticism. True science is never settled. Likewise, in a healthy urban-based economy old and new practices are subject to radical, ceaseless, creatively destructive competition. But as with science, such criticism requires radical tolerance of the strange, the residents of a living city need to be tolerant of ideas, services, and lifestyles that may offend them to some degree. Free science, free cities, and free societies thrive with equal doses of radical criticism and radical tolerance. But the balance is crucial, and when it's right entrepreneurship will flourish. Tolerance-without-criticism and criticism-without-tolerance lead by different routes to uncreative, social torpor.¹⁸

Entrepreneurship, in the form of coordinating complementary resources, takes place in both private and public spaces. People working within a private space such as a business may discover new ways of doing something old, or a new use for an existing factor of production or process, or discover an innovation that cuts across existing processes and customers. But for our purposes it's worth emphasizing the cultural and commercial entrepreneurship that takes place in public space rather than private space. It's in public space that the main challenge of the urban and market processes lies and where the heavy lifting of entrepreneurially competitive cohesion takes place. Economic development involves new ways of thinking that, while not necessarily dependent on breaching existing social networks, offer greater potential when local agents can connect despite long social distances (Ikeda 2012) And for this, as we have seen, multiple attractors, the intricacy of short blocks, population density, and widely affordable space for experimentation, represent elements in a complex reciprocating system (Ikeda 2012a). The result of these interactions is a social order that Jacobs has characterized as “organized complexity” (Jacobs 1961, 432).¹⁹

V. CONCLUDING THOUGHTS

In her 1961 classic, Jane Jacobs explicates four factors that together generate diversity in public space. I believe these four “generators of diversity” remain a useful framework for helping us to understand how cohesion emerges from diversity, but one that may be extended and somewhat reinterpreted in the way I have done here. Jacobs also explains how social networks, which are the result of as well as generators of trust, also enable all that diversity to cohere. But social networks are only one way that a living city can make heterogeneous elements of its space, as well as its people, complementary. The other way is through the competitive market process, which offers opportunities for alert entrepreneurs to profit from turning the diversity that living cities continually generate into a rich, complex, dynamic, and unpredictable mosaic that hangs together through time.

The noted urban planner Alain Bertaud offers the following example of the value of diversity and density:

For instance, a lawyer who specializes in European agriculture regulations would not be very productive if she were surrounded only by people with the same skills. To be effective, she will have to be in close contact with other specialists in taxation and import tariffs, and she will need to engage the services of workers who will fix her computer, clean her office, deliver coffee to the board room, and prepare and serve the food that she will eat at lunch. In the same way, an unskilled industrial worker is likely to work in a factory requiring a large array of workers specialized in electronics, mechanics, labor law, insurance, and so on (Bertaud 2018, 32).

When Jacobs’s four conditions are operating as a reciprocating system (Jacobs 1969, 234) and the entrepreneurial-competitive process is allowed to operate in the urban market, diversities and heterogeneities transform into complementarities, creating a coherent social order in which potential conflict resolves into social cooperation and mutual prosperity*

NOTES

1. In Section IV I define “public space” in contrast to “private space.”
2. In her 1961 book Jacobs mainly emphasizes the role of social networks and social capital as the principal cohesive forces binding all that diversity together. In Ikeda (2012) I apply social-network theory to this theme and explain how market-process theory complements Jacobs’s framework.
3. Here is a simple but illuminating analysis of the relation between the length of blocks and the amount of street frontage by Andrew Alexander Price. <https://marketurbanismreport.com/optimizing-street-grid/>
4. See for example <https://www.cnn.com/2017/10/26/world/industrial-renovation-one-square-meter/index.html> and <https://architizer.com/blog/inspiration/collections/industrial-to-residential-conversions/>.
5. I have been able to find little written evidence that Jacobs would approve of the landmarking of entire districts (West Greenwich Village being the sole exception), especially to the extent to which it has grown today in Manhattan, where over 25% of developed real estate has been landmarked. See this letter: <https://gvshp.org/blog/2016/05/05/continuing-jane-jacobs-work/>. My guess is that Jacobs’s might have referred to this kind of preservation as “taxidermy” (Jacobs 1961, 373).
6. This is a theme I discuss below but more fully in Ikeda (2012a).
7. See for example her references to Tokyo, London, Paris, Moscow, and elsewhere in Jacobs (1969).
8. In the preface to the 1993 Modern Library Edition of *Death and Life* Jacobs acknowledges Jacobs evidently concedes that her analysis complements and corroborates the intuitions of “foot people” rather than “car people.”

9. In Ikeda (2012) I characterize this as a “strong tie.”
 10. See also https://fee.org/articles/the-limits-of-social-media/?utm_medium=related_widget; <https://fee.org/articles/facebook-and-familiar-strangers/>; and <http://www.nber.org/papers/w23608>
 11. See <https://fee.org/articles/bookstore-wars/> and <https://fee.org/articles/the-breezes-of-creative-destruction#axzz2biYFHgiJ>
 12. On some of this evolution see this <https://www.forbes.com/sites/jonbird1/2018/06/17/the-future-of-the-shopping-mall-is-not-about-shopping/#1efeb8fb5cf2> and also this on Leon Krier’s “Cayala” in Guatemala city <https://www.cnu.org/publicsquare/ambitious-classical-town-rises-guatemala>.
 13. See for example https://www.nytimes.com/2008/03/06/arts/design/06dumb.html?rref=collection%2Ftimestopic%2FWalentas%2C%20David%20C.&action=click&contentCollection=timestopics®ion=stream&module=stream_unit&version=latest&contentPlacement=5&pgtype=collection
 14. For shared office space see for example <https://www.forbes.com/sites/larryalton/2017/05/09/why-more-millennials-are-flocking-to-shared-office-spaces/> and for co-living space <https://www.architecturaldigest.com/story/what-its-like-to-live-with-complete-strangers-common-co-living>.
 15. But some of the data show only a weak relation between density and development.
To measure whether density is related to the kind of innovation implied in Jacobs’s definition of a city, Peter Gordon and I examined the relation between population density and a proxy for innovation (human capital, actually); namely, the percentage of the population holding a master’s degree or above. We found that at the city-level this relation appears to weakly hold, but looking closer at the micro-level (at PUMS data on zip codes from the American Community Survey) the relation vanishes (Gordon & Ikeda, 2007). Even if we are mindful of the limitations of population density as a defining characteristic of a city, we need to ask what’s going on here? One possibility is that there is interaction across rather than within PUMS in a city that are important for the development of human capital. This is an area of future study.
 16. “A public character is anyone who is in frequent contact with a wide circle of people and who is sufficiently interested to make himself a public character” (Jacobs 1961, 68).
 17. “Perceive” here means both 1) become aware of or 2) subjectively believe the existence of and so may be true or false (i.e. result in net gains or not).
 18. I offer my thoughts on tolerance and criticism in this short essay: <https://fee.org/articles/the-fruits-of-imperfection/>
 19. Organized complexity involves “dealing simultaneously with a sizeable number of factors which are interrelated into an organic whole” (Jacobs 1961, 432; emphasis omitted).
- *This article was made possible in part by a grant from the Charles Koch Foundation.

REFERENCES

- Barabasi, Albert-Laszlo. 2003. *Linked: How Everything Is Connected to Everything Else and What It Means for Business, Science, and Everyday Life*. New York: Plume.
- Bertaud, Alain. 2018. *Order Without Design: How Markets Shape Cities*. Cambridge, MA: MIT Press.
- Christakis, Nicholas A. & James H. Fowler. 2009. *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives*. New York: Little Brown and Co.
- Desrochers, Pierre & Joanna Szurmak. 2017. Jane Jacobs as Spontaneous Economic Order Methodologist: Part 1: Intellectual Apprenticeship. *Cosmos + Taxis*, Vol. 4, 2+3: 2-20.
- Garreau, Joel. 1991. *Edge City: Life on the New Frontier*. New York: Anchor Books.
- Gordon, Peter and Sanford Ikeda. 2007. Power to the Neighborhoods: The Devolution of Authority in Post-Katrina New Orleans. *Mercatus Policy Series*, Policy Comment No. 12. Arlington: Mercatus Center at George Mason University.
- Hardwick, M. Jeffrey. 2004. *Mall Maker: Victor Gruen, Architect of an American Dream*. Philadelphia: University of Pennsylvania Press.
- Ikeda, Sanford. 2017. A city cannot be a work of art. *Cosmos + Taxis*, Vol. 4, 2+3: 79-86.
- _____. 2012. Entrepreneurship in Action Space. In: David Emanuel Andersson (ed.) *The Spatial Market Process (Advances in Austrian Economics)*, Vol. 16: 105-39. Place: Publisher.

- _____. 2012a. Economic development from a Jacobsian perspective. In: Sonia Hirt (ed.) *The Urban Wisdom of Jane Jacobs*. New York: Routledge.
- Jacobs, Jane. 2000. *The Nature of Economies*. New York: Vintage.
- _____. 1969. *The Economy of Cities*. New York: Vintage.
- _____. 1961. *The Death and Life of Great American Cities*. New York: Vintage.
- Kimmelman, Michael. 2013. Next time, libraries could be our shelters from the storm. *The New York Times*, October 2: C1. <http://www.nytimes.com/2013/10/03/arts/design/next-time-libraries-could-be-our-shelters-from-the-storm.html>
- Kirzner, Israel. 1973. *Competition and Entrepreneurship*. Chicago: University of Chicago Press.
- Koeppl, Gerard. 2015. *City on a Grid: How New York Became New York*. Boston: Da Capo Books.
- Koolhaas, Rem. 1994. *Delirious New York: A Retroactive Manifesto for Manhattan*. New York: The Monacelli Press.
- Kostof, Spiro. 1991. *The City Shaped: Urban Patterns and Meanings Through History*. New York: Little, Brown and Co.
- Lachmann, Ludwig. 1978/1956. *Capital and Its Structure*. Kansas: Sheed, Andrews and Mcmeel, Inc.
- LeGates, R. T. & F. Stout (eds.). 1996. *The City Reader*. New York: Routledge.
- Lynch, Kevin. 1960. The city image and its elements. In: Richard T. LeGates and Frederic Stout (eds) *The City Reader 1996*, pp. 98-102.
- Mises, Ludwig von. 1963[1949]. *Human Action: A Treatise on Economics*. Chicago: Regnery.
- Scott, James C. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven: Yale University Press.
- Szurmak, Joanna & Pierre Desrochers. 2017. Jane Jacobs as Spontaneous Economic Order Methodologist: Part 2: Metaphors and Methods. *Cosmos + Taxis*, Vol. 4, 2+3: 21-48.
- Vance, James E. 1990. *The Continuing City: Urban Morphology in Western Civilization*. Baltimore: Johns Hopkins University Press.
- Whyte, William H. 2009/1988. *Rediscovering the Center City*. Place: University of Pennsylvania Press.