

A City Cannot be a Work of Art

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Abstract: Jane Jacobs famously argued that “a city cannot be a work of art.” A living city is a spontaneous order far too complex for the human mind to design or to direct in detail. Thinking of a city as a designed outcome and not as an emergent process, or trying to organize a city before appreciating what it is and how it works, or treating a city as if it were a work of art, tends to stifle spontaneity and drain it of life and intelligence. Rather, a city is a place where people with diverse knowledge, skills, and tastes change space, make and break ties, and transform resources and ideas in innovative and controversial ways. It’s an unpredictable, messy, even dangerous, but deeply creative process.

Keywords: action space, city, complexity, urban planning, urban design, Jane Jacobs, spontaneous order

One of the common mistakes urban planners make is to assume that you can impose a deliberately constructed pattern onto a cityscape and expect people to adjust their behavior to it in just the way you want them to. It doesn’t work that way, especially with big plans involving large numbers of people, no matter how beautiful or efficient the design may be. To quote Jane Jacobs: “A city cannot be a work of art.”

WHAT A CITY IS NOT (AND IS)

As Jacobs explains in her book *The Death and Life of Great American Cities*:

Artists, whatever their medium, *make selections* from the abounding materials of life, and organize these selections into works that are under the control of the artist...the essence of the process is disciplined, highly discriminatory selectivity *from* life. In relation to the inclusiveness and the literally endless intricacy of life, art is arbitrary, symbolic and abstracted...To approach a city, or even a city neighborhood, as if it were a larger architectural problem, capable of being given order by converting it into a disciplined work of art, is to make the mistake of attempting to substitute art for life. The results of such profound confusion between

art and life are neither art nor life. They are taxidermy. (1961, pp. 372-3, emphasis original)

So how do we avoid turning the results of urban design into taxidermy and killing off a city by planning? I think the short answer is that we avoid it by recognizing that there’s a tradeoff between the scale of a design and the degree of spontaneity, complexity, and intricacy in the resulting social order that the design allows.

Now, saying that a city cannot be a work of art doesn’t mean of course that a city cannot be beautiful or that deliberate design can never enhance that beauty. But I am suggesting that beauty that is designed as a work of art is fundamentally different from the undersigned beauty that emerges from a lifetime of experience. The skillfully made-up face of a fashion model and the face of a 90-year-old grandmother are both beautiful, but in profoundly different ways.

And I’m not saying that small is always beautiful, either. What I am saying is that there’s a reason why mega- and giga-projects tend to be more beautiful the farther away from them you are, while the deep beauty of a living city becomes visible, as I said, up close on the street.

When she wrote that a city cannot be a work of art, I believe Jacobs was thinking less about aesthetics *per se* and more about the problem of social order—about how a city manages to solve the problem of achieving social coopera-

tion among thousands and millions of strangers. And for the same reason she didn't think that a city could be a work of engineering. Both the engineering perspective and the aesthetic perspective abstract from an organic whole; both substitute the vision of a single mind for the intricacies of a system that is the result of many minds. These reasons parallel those of F.A. Hayek (1967) who warned of the dangers of conflating planned orders for unplanned or "spontaneous orders."

The economist Richard E. Wagner (2010) draws the same distinction in his contrast between "piazza and parade." In a parade, each person follows an explicit, pre-assigned set of commands consciously constructed by some kind of overall planner. While any social framework constrains individual choice to some degree, a parade, on the street or especially on an American football field, is perhaps the most extreme example of this. To achieve the pre-ordained pattern, no marcher can deviate from her assigned movements and her individuality must be submerged into the collective. Individual choice in this context, aside perhaps from the choice of the marcher to join the parade in the first place, must be ruled out. Individuality, the freedom to deviate from one's role in the collective, would spell disaster and therefore it can't be tolerated. The relations among the marchers have to be formal and narrowly constrained.

People of course also relate to one another in a piazza. Whether sitting, standing, or walking (or dancing), there are rules each person needs to follow in order to preserve order. But those rules are typically informal, tacit, and negative in the sense that they tell you what you cannot do rather than what you can do. Perhaps you're not allowed to toss trash into the fountain or play loud music or assault passersby. Anything else not forbidden—bathing in the fountain or singing to soft music or talking to strangers or whatever—is allowed. The scope of what you can do in this hypothetical piazza is infinitely broader than what you cannot do, indeed must do, in a parade (e.g. take five steps forward, turn 90-degrees to the right, and so on).

Let me define this kind of piazza-order, a **spontaneous order** as

a stable set of relations among individuals that emerges unplanned from their collective interactions and that is sufficiently coherent to enable them to form and carry out their plans with a reasonable expectation of success.

It is in this sense that Hayek refers to a spontaneous order as "the result of human action but not of human design." The people whose actions constitute the order may or may not be aware *that* their choices contribute to the pattern, but they certainly do not know precisely *how* their choices do so. Examples of spontaneous orders include language, culture, legal interpretation, market prices. Quite a wide-ranging list!

In fact, because of the central role of cities in the development of so many spontaneous social orders, I believe we should view a living city as a spontaneous order *par excellence*. The city is a social order that breeds and sustains the most important, spontaneously generated social orders that constitute civil society.

That's why Jacobs was so harshly critical of highly centralized, heavy-handed post-World War II-style urban planning, in which planners worked to transform messy piazzas into pretty parades. Indeed, her criticism was basically that the planners of her day were typically unaware of the essential difference between the two. They tried to substitute their vision of the ideal city—clean, segregated, geometric, large-scale—onto patterns of social interaction and order they did not see or understand or care about. They were for the most part committed to what they believed was the common-sense goal of restoring efficiency to the unplanned city and didn't mind being bold or brutal. For examples we need look no further than to Brasilia or more recently to China's ghost cities.

She was no less critical of contemporary urban theory. The paradigm is Louis Wirth's (1938, p. 18) model of a city as a 3-variable problem—population, density of settlement, and degree of heterogeneity—with which he argued it was possible to "explain the characteristics of urban life and to account for the differences between cities of various sizes and types." In contrast, Jacobs saw a living city as a problem of "organized complexity," which involves "dealing simultaneously with a sizable number of factors which are interrelated into an organic whole" (1961, p. 432); that is, a spontaneous order.

Much more congenial to her way of thinking were the design theories of Kevin Lynch (1960) or William H. Whyte (1980) or Jan Gehl (2013). She might have been very sympathetic to the traffic philosophy of "shared space" that is spreading across Northern Europe today. They each pay careful attention to what real people do and how they interact with one other and with the built environment. Each to some degree understood with Jacobs that a living city is a spontaneous order.

Now, what about those tradeoffs?

What the Tradeoffs Are

First of all, Jacobs observed that the artist *abstracts* from life, with all its “inclusiveness” and “literally endless intricacy.” Many architects, especially those with great ambition, seem to treat urban environments as a mere canvas for their personal creations; a canvas which if not already blank has to be wiped clean before they can get to work. The good architects at least try to take into account how their constructions fit or don’t fit into the existing built environment and how real people might actually use them. But whether you’re an architect—or an economist—predicting how people will respond to a change is a pretty iffy thing. From my perspective that ifiness comes from two factors: complexity and radical ignorance.

Complexity in this context means that the interactions among people are so numerous or varied or changeable that the costs of being aware of all of them is too high for anyone to calculate. Hayek defines the “degree of complexity” in terms of the “minimum number of elements of which an instance of the pattern consists in order to exhibit all the characteristic attributes of the class of patterns in question...” (Hayek 1964). In a world with only a few variables, such as those described in a high-school algebra problem, it is possible to have all the knowledge you need to get the correct answer. In the real world, however, the number of relevant variables is too large; that is, the number of ever-changing interactions among people in society is so large, and our cognitive powers are too limited, to find a “solution.” Indeed, compared to the vast complexity of the social order, predicting this week’s weather is a pretty simple matter.

Radical ignorance means being unaware of information that would be relevant to making a decision, not because the cost is too high, but because we are unaware that the relevant information even exists. For example, you might be very hungry but walk blithely by Restaurant X, which serves food that would satisfy your hunger. A simple solution escapes your notice because of your lack of alertness. So whether the problem is complex or relatively simple, not knowing that you do not know means you cannot solve the problem because in some sense you are unaware that the problem even exists.

Acting in the presence of complexity and radical ignorance means that it is impossible to trace all the consequences of your action because (1) you are not even aware of at least some of the consequences and (2) the ramifications

of your action are too numerous or subtle to follow given your limited mental capabilities even if you were in fact aware of them. So as a rule the bigger the scale of the changes you wish to make in the real world, or the more detailed the design you wish to impose on a given scale of activity, the harder it will be to predict what is going to happen.

One of the lessons economists learned from the 20th century debate over collectivist central planning—the so-called “socialist calculation debate”—is that the “optimal” level of central planning is a lot lower than most of us think. The local knowledge that makes things work is inherently beyond the grasp of the central planner and accounting for incentives is problematic. And the more someone tries to design a social order, the more people will strive to adjust to her interventions in unforeseen ways, thwarting her intentions. In the context of urban design, that means that substituting the genius of the planner for the collective genius of ordinary people diminishes the intricacy, complexity, and yes the deep beauty of the resulting social order, and generates negative unintended consequences.

The larger and more elaborate a design is in relation to the social space it’s trying to fit into, the narrower will be the scope of unplanned activities that it can permit. That’s because a structure, of any scale and degree of design, necessarily constrains to some extent how people will use it and the space around it. Building a mid-size townhouse within a commercial block changes the character of the rest of that block and perhaps also the surrounding neighborhood. The bigger the structure, the bigger the change will be.

In addition, constructing something that takes up an entire city block, like the Empire State Building, not only limits what people can do in and around that space but it also challenges the designer to try to account for the way people will want to use it. Scaling up to something like Lincoln Center or Hudson Yards exponentially increases the difficulty of predicting people’s behavior in and around that space and of constraining how they actually will use it. If she wants to preserve the potential for unplanned liveliness, the designer will need to leave substantial room for adjustment over time, otherwise the level of social complexity will be limited by her imagination at a single point in time.

A city can handle endless waves of complex, on-going problems if the *rules* that govern interaction, and the *spaces* within which people interact, allow many minds to discover those problems and to work on them over time. Good urban design therefore needs to take seriously into account a city’s “invisible infrastructure”—i.e. the patterns of contact, use, and ever-changing social networks that promote order

and social cooperation—that enable individuals to harness their local knowledge and human capital. The built environment should complement emergent order, not try to replace it with deliberate design.

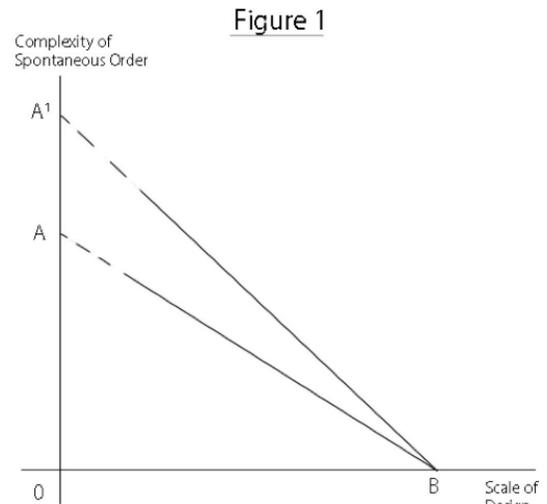
It's a mistake then to approach building structures as different in scale as the Empire State Building, Lincoln Center, or Hudson Yards as one merely of degree. With respect to their impact on the invisible social infrastructure, they are fundamentally different in kind. Increasing the scale of design/construction cuts ever more deeply into the living flesh of a city. The challenge for the designer/builder of public space then is to enable, rather than replace, the spontaneous, low-level planning of ordinary people, and to preserve—largely by keeping away from—the “action spaces” where informal contact and networking, trial-and-error, diversity, and discovery usually happens. Too often, scaling up progressively drains the life and intelligence from of a city.

What the Tradeoffs Might Look Like

We can visualize the tradeoff between the scale of design and the complexity and spontaneity of a social order as a downward-sloping curve. A sort of “scale-versus-order-possibilities frontier.” (See Figure 1.)

In addition to scale and order/complexity, a third element I would add to the tradeoff is the passage of time. You can to some extent plan for complementarity, but you can't really plan for spontaneous complexity and intricacy. Fortunately, time allows people some freedom to adjust social networks and physical spaces to better complement their own plans, in ways that the designer cannot foresee. That is, for any given scale, time lets people figure out novel uses for, or changes to, the space as originally designed. Those unthought-of uses constitute an increase in the level of complexity in a spontaneous order. Over time, then, the frontier can shift outward.

Figure 1 reflects these relations:



The scale of a structure and the designed or planned uses of the space within that structure are two different things (even though simply increasing scale does itself increase to some degree the designed element in a previously undersigned space). Increasing the dimensions of a room doesn't necessarily mean the elements that go into its design become more complex. But to keep things simple, Figure 1 treats scale and design as tightly positively correlated. Thus, as scale increases so do the designed elements—you move from point A to point B—and together they decrease the potential for spontaneous order.

Then, as time passes, the frontier shifts up from AB to A'B, where point B represents the case where the structure occupies 100% of the relevant action space. So for any given scale, the passage of time allows people to find new, unplanned ways to interact with others in that space, thereby increasing the level of spontaneous order. How far it might shift in a given time period and the particular shape the tradeoff might take are critical issues, but they are beyond what I wish to discuss here.

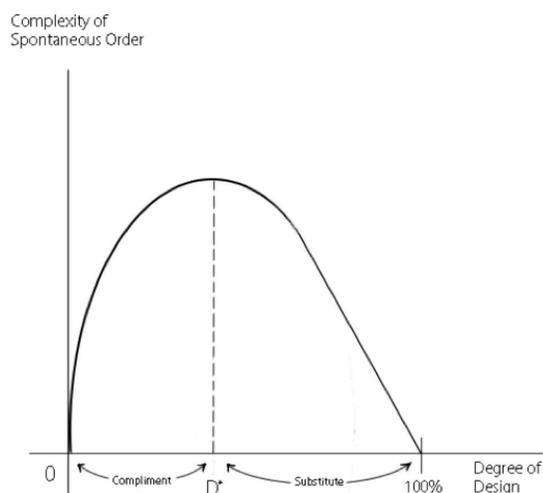
But thinking of the relation between scale, order, and time in this way can still help to explain how, despite the monumental scale of ancient Rome or Haussmann's Paris or Niemeyer's Brasilia or Ceausescu's Bucharest, time has made those places more livable.

Now, what about the impact of deliberate design itself on spontaneous order?

Figure 2 isolates design from scale. It depicts a possible tradeoff between the potential for spontaneous order on the

one hand, and the degree to which the order in the structure is planned rather than unplanned.

Figure 2



While I believe a space in which there is no deliberate, overall design can still give rise to spontaneous order, I have drawn the curve emanating from the origin—no overall design, no spontaneous order—but it rises steeply at first to reflect my own priors. It then reaches a maximum level of potential spontaneous order at D^* , beyond which design begins to substitute for rather than complement, unplanned order.

So, precisely because it is not a work of art, not the result of deliberate design, a city can achieve astonishing levels of intricacy, or of Jacobs’ “organized complexity.” But if not a work of art, then what *is* a city? I’ve been using the term “spontaneous order,” but what does it mean?

THE CITY AS A SPONTANEOUS ORDER

Jacobs defined of a *city* as “a settlement that generates its own economic growth from its own local economy” (Jacobs 1969, p. 161).

Ancient Rome and contemporary Washington, D.C. are not cities in this sense because on net they consume more wealth than they produce. While you could argue that each of these cities does create some wealth, in the form of legislation and regulations that foster economic development, the net value of that output is, to say the least, open to question. On the other hand, New York City is a city in Jacobs’ sense because, in addition to the net wealth it creates for the rest of the world, it generates more tax revenue for the rest

of the country than it takes in in subsidies. In this sense, too, Paris, London, and Tokyo are also cities.

Note that Jacobs’ definition of a city is an economic one. It is different from, say, that of Richard Sennett: “...a city is a human settlement in which strangers are likely to meet” which would apply to a prison, a mall, or Yankee Stadium. And it certainly contrasts as we have seen with Louis Wirth (1938) who distilled the essence of a city as a kind of mathematical function determined algebraically by population, density, heterogeneity.

But it is a bit awkward to deny that such wealth-draining metropolises as ancient Rome and contemporary Washington are cities. Perhaps Max Weber’s distinction between a “consumption city” and a “production city” might be more helpful. Instead, however, I have found it useful to term a “living city” what Jacobs defines as a city, and to use the term “city” to refer to any large settlement where strangers peacefully interact over a long time.

In addition to my earlier definition in terms of a set of stable and coherent relations or patterns that is the result of human action but not of human design (Hayek 1967), a spontaneous order, as I’m using it here, also has the property of “emergence,” which is the ability of a complex system to arise from a multitude of individual interactions and to adapt to changing conditions without central command (Johnson 2002).

It’s true that at some scale there is always deliberate design. Spontaneity seems to exist at a level just beyond a particular set of designed elements. Thus the decision to buy from a particular supplier is deliberate, but the pattern of response of the entrepreneur over time to unexpected changes in supply (for example) is not. The architect’s plan for a home is designed, but how it interacts with other houses and those who live, work, and play in and around them over time to generate the character of a neighborhood is not. The spontaneity of an order then refers to the unplanned patterns that emerge over time outside the boundaries of design.

As I’ve suggested, however, beyond some point conscious design and spontaneity become substitutes rather than complements.

That is, like Jacobs, I see cities as highly adaptive systems that can achieve a level of complexity and orderly dynamism well beyond anything anyone could impose by design. As a spontaneous order, a living city is the result of human action but, for the part that matters most, not of human design. It is largely emergent, self-regulating, and self-sustaining.

I say “largely” of course because sometimes a city starts out as a deliberate creation and at different points in its history it may be subject to extensive re-design. But even so, over time it evolves in ways that no one who played a part in its deliberate construction could have foreseen. The original designers of the New York City subway system in the late 19th century could not possibly have correctly predicted how the network would evolve over the next 100 years. And the ambitious public mega-projects undertaken at various points in a city’s history—much like Haussmann’s Paris—are eventually absorbed into the urban matrix. A city outgrows the elements designed at its beginnings or later in its history. The living flesh of a city heals, but no one can predict just how.

Like the spontaneous orders of language, judge-made law, and culture, cities evolve in response to myriad impulses from the people who constitute them. Cities thrive when there is freedom in one’s voluntary interactions with others. When they flourish, cities draw together socially distant strangers who are seeking “profit,” however differently each might interpret that word. And as Hayek explained in his essay of 1945, “The use of knowledge in society,” because people with limited knowledge can use the money prices that emerge from countless market exchanges as signals, the market process is much smarter than any human mind. In exactly the same way, the collective intelligence of a city can solve problems that no one can solve by herself. Even more importantly, cities serve to make us aware of what those problems are in the first place.

Now it’s true that some of these problems would not have existed but for large numbers of people with diverse knowledge, skills, and tastes packing themselves together into dense agglomerations. But these are also the conditions that foster informal contact. They make cities incubators of ideas and the principal sources cultural, technical, and scientific innovation. Innovation and creativity are not possible without experimentation, trial-and-error; and trial-and-error is characteristically messy and often dangerous. Even though the number and diversity of opportunities you find in a city significantly lowers the uncertainty and the cost of experimenting, failure and disappointment will always be part of the bargain. Life on the cutting edge is the price and the value of living in a dynamic social order.

Rem Koolhaas (1994, p. 59) put it well:

The entire spectacle defines the dark side of Metropolis as an astronomical increase in the potential for disaster only just exceeded by an equally astronomical

increase in the ability to avert it. Manhattan is the outcome of that neck-and-neck race.

That, of course, could be said for any living city.

A living city is largely the unintended consequence of people following their own plans, their own dreams. And when free to do so they will shape and abide by norms, conventions, beliefs, and institutions—i.e. the “rules of the game”—that promote social cooperation and create wealth in ways no one can fully imagine. And their choices will also intentionally or unintentionally nudge those norms, conventions, and the rest, in unpredictable directions. That is, as long as they are free to do so.

“Freedom” here entails movement; in particular, the ability to break old, strong ties and to make new, weak ties. All that making and breaking, like all change, entails some amount of disappointment, even tragedy. But the payoff, the “bright side of metropolis,” is creativity and innovation. In that sense, innovation and disappointment, creativity and conflict, go hand-in-hand. The same human tendencies that create the dark, destructive side of metropolis are responsible for the bright, creative side. Trying to eliminate the dark side, to put a stop to unwanted change, or imposing rules to avoid disappointment, stifles creativity and results in even more profound disappointments. In other words, it results in taxidermy. As long as ordinary people are free to apply their intelligence, knowledge, energy, and resourcefulness where they see the opportunity to do so, the forces of creation can stay just ahead of the gales of destruction. People will adjust to or change the built environment; more importantly, they will adjust to or change the invisible, social infrastructure.

But then amidst all this change and motion, how can we tell when things are getting better or worse?

CITIES CANNOT BE EFFICIENT IN THE STANDARD, ECONOMIC SENSE

Before we can correct what we think is wrong with a city, we need an appropriate standard of what is right. That standard of rightness in turn depends on our understanding how the thing we are trying to fix is supposed to work.

In this regard I’m afraid neither macroeconomics nor microeconomics is much help at all.

In traditional macroeconomics, too much important detail is lost in its pre-occupation with aggregates and averages. For example, standard macroeconomic theory treats capital as homogeneous, and so makes no distinction be-

tween a hammer and a harbor, except that a harbor may be the equivalent of many, many hammers. Such an approach is too blunt an instrument for getting to the level of detail needed to grasp the complex, complementary time-structure of capital of an economy, let alone to tell us what would be necessary to promote that structure (Lachmann 1978).

The limitations of standard microeconomics are in some sense even more severe. Efforts to make cities run more efficiently, for example, when “efficient” means something more than simply “the way I want to see things done,” run up against a deep conceptual problem (Ikeda 2010). Strictly speaking, an action is efficient when a person achieves a given end with the least costly of all available means. In other words, *if* you know what the most valuable end that you could be pursuing is, and *if* you know what the correct value of each of the possible means to achieve that end are, then your choices have a very good chance of being efficient. It would simply be a matter of matching the known, least-cost means to the known, highest-valued ends. But if you lack knowledge of any part of that ends-means framework, if your knowledge is not perfect, it would be impossible to tell whether any particular ends-means combination is efficient or inefficient. You can’t compare a given outcome with an ideal outcome if you don’t know what that ideal outcome might be. Efficiency might be an appropriate measuring rod in Louis Wirth’s 3-variable city but useless in a Jacobsian system of organized complexity.

The starting point of Jacobs (or of Hayek or of Israel Kirzner 1973) is that a person is aware of only a small portion of the total amount of information she needs for the successful completion of her plans. Also, people make mistakes, plans conflict. Again, the social processes in cities are precisely what facilitate the discovery of conflicts and errors as well as harness the knowledge needed for their resolution.

Real markets are never efficient and neither are real cities. But the good news is that, given the nature of the trial-and-error process, we wouldn’t want them to be. As Jacobs (1969, p. 86) puts it:

But I propose to argue that these grave and real deficiencies are necessary to economic development and thus are exactly what make cities uniquely valuable to economic life. By this, I do not mean that cities are economically valuable in spite of their inefficiency and impracticality but rather because they are inefficient and impractical.

To someone trained in standard economics that sounds paradoxical. If you understand why a city cannot be a work of art, however, it’s common sense.

A living city works by effectively combining what I call the “4 Ds,” diversity and density to generate discovery and development. Without going too deeply into what a normative standard consistent with promoting creative discovery would look like, I’ll just say that it would focus on whether the rules of the game empower creativity, more than on trying to prevent the gales of dark destruction. The focus would be on what keeps creation ahead of destruction, and not on how closely the outcomes we can measure match the ideal outcomes that we can imagine.

CONCLUDING THOUGHTS

Viewing cities as spontaneous orders and not as works of art helps to explain the tradeoff between scale and spontaneous order, as well as the role of time in softening the severity of that tradeoff. Complexity and creativity are at odds with scale and the comprehensiveness of design because increasing scale impinges on the “action spaces” where creative, informal contact tends to happen (Ikeda 2012). Design might complement that informal contact to a point, but beyond a fairly low level it begins to overwhelm it.

Again, small is not always beautiful, and big is sometimes unavoidable. That makes it all the more important to understand the impact of scale and design on spontaneous social orders and complexity.

That applies as much to private as it does to public projects. When the designs are small relative to the surrounding social milieu, the downside of the tradeoff isn’t very steep. The problems start when budget constraints are soft and projects become mega-projects and mega-projects become giga-projects. I don’t want to sound too ideological—Jane Jacobs somehow avoided being ideologically pigeonholed all her life—but soft budget constraints are primarily the domain of governmental and, especially, of so-called public-private developments: Those elephantine-starchitectural-wonder-complexes that too-often strive for off-the-charts wow-factors. Without legal privileges, subsidies, and eminent domain, could the scale and degree of design of purely privately funded developments even begin to compare to those? I don’t think so.

The rules of the game of urban processes interact in complex ways. So deliberately re-constructing those rules to achieve a particular outcome is akin to trying to impose a particular design on the social order, killing the social or-

der in the process, although perhaps preserving the appearance of life. Taxidermy again. (That, by the way, is why I have problems with landmarks preservation on the scale practiced in many major cities today, including New York.)

I worry that we pay lip service to “mixed uses” and “density” and “diversity” without really understanding exactly what these mean and how they are important for economic development and liveliness. Jacobs explained how a living city fosters economic development and liveliness—for her the two go together—by promoting the diversity of land-use and of skills, knowledge, and tastes. A government can’t build an entire city (or neighborhood even) because it can only go so far in constructing that kind of diversity and the self-regulating processes and the invisible infrastructure that emerges from it and sustains it. But in the ordinary course of its activities a government and its planners can at least refrain from doing the things that would thwart the emergence of the invisible social infrastructure that gives rise to that diversity, development, and liveliness.

And because I’m afraid they won’t refrain, I worry that when planners propose fixes for traffic, poverty, crime, discrimination, pollution, obesity, economic ennui, or whatever, they do so without seeing or caring about the things that constitute what Ken-Ichi Sasaki (1998) calls a city’s “urban tactility,” another part of the fine-structure of society that is the result of human action but not of human design.

So, I end with this final thought: The more precise and comprehensive and accurate your image of city is, the less likely that the place you’re imagining really is a city. A city is not man-made thing.

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