

NEW URBANISM AND SMART GROWTH: A FEW WORDS FROM THE ACADEMY

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Concerns about urban sprawl are not new. In a 1958 essay titled “Urban Sprawl” that appeared in *Fortune*, William Whyte warned Americans that their penchant for using five acres to do the work of one was not only “bad aesthetics” but “bad economics.” In the ensuing years, the movement to contain or mitigate sprawl has grown in fits and starts following cycles loosely correlated with the economy and government administrations. Often, as momentum renews, the battle cries change. Those who once advocated growth control later called for growth management, smart growth, new urbanism, and sustainable development. This issue of the *Review* contains articles that address two interrelated perspectives on mitigating sprawl: smart growth and new urbanism. While smart growth and new urbanism share much with similar movements of the past and perhaps the future, both have attained a level of legitimacy and currency that warrant new serious scholarly examination of their premises and implications.

SMART GROWTH

According to the Environmental Protection Agency (2004), smart growth is “development that serves the economy, the community, and the environment. It changes the terms of the development debate away from the traditional growth/no growth question to how and where should new development be accommodated.” Toward this end, the U.S. EPA established in 1996, and continues to fund, a network of advocacy organizations dedicated to smart growth principles. Thanks in large to this network, smart growth is now part of the lexicon of planners, policy makers, and almost everyone with interest in urban and regional development.

Though the origins of the term are unclear, the rapid ascendance of smart growth can be traced to three key projects (Burchell, Listokin, and Galley 2000). In the

mid-1990s, the American Planning Association launched Growing Smart, an ambitious project that in 1997 produced *Growing Smart Legislative Guidebook: Model Statutes for Planning and the Management of Change*. In the same year, the Natural Resources Defense Council and the Surface Transportation Policy Project published *The Took Kit for Smart Growth*, which provided model policies for promoting compact growth, mixed land uses, and transit-oriented development. Also in 1997, the state of Maryland passed the Smart Growth and Neighborhood Conservation Act, which encouraged Brownfield Redevelopment, Living Near Your Work, concentrating infrastructure in Priority Funding Areas, preserving Rural Legacy lands, and spatially concentrating Job Creation Tax Credits. Since then, smart growth programs—at least in name—have been promoted by groups that range from the National Association of Homebuilders to the Sierra Club.

Though no two organizations define smart growth in precisely the same terms, the smart growth principles promulgated by the smart growth network have gained widespread recognition. These include the following:

- create a range of housing opportunities and choices;
- create walkable neighborhoods;
- encourage community and stakeholder collaboration;
- foster distinctive, attractive places with a strong sense of place;
- make development decisions predictable, fair, and cost-effective;
- mix land uses;
- preserve open space, farmland, natural beauty, and critical environmental areas;
- provide a variety of transportation choices;
- strengthen and direct development towards existing communities; and
- take advantage of compact building design.

The logic of smart growth is based on four propositions:

- Whether its causes are economic forces, consumer preferences, or misguided public policies, the dominant form of urban development over the postwar period can be characterized as urban sprawl.
- Urban sprawl can be defined as development that is low density, unplanned, automobile dependent, homogeneous, and aesthetically displeasing.
- Urban sprawl has adverse effects on environmental quality, social cohesion, government finance, and human health.
- Urban sprawl, and its associated evils, can be mitigated by policies that promote compact urban growth, mixed land uses, bicycle and pedestrian friendly environments, public transit, urban revitalization, and farmland preservation.

Despite its rapid rise in popularity, support for smart growth is far from universal. With exception, the opposition to smart growth is led by individuals and organizations concerned with property rights, home building, the automobile industry,

and agriculture. Proponents of smart growth include environmentalists, transit supporters, central city advocates, and the planning and public health professions. To some extent, the definition of smart growth has become more and more broad. Anthony Downs's (2001) summary of the term produced eight separate definitions ranging from no growth to progrowth and everything in between. Correspondingly, a cottage industry produces a study of the week that supports or refutes one or more of the propositions above. The articles in this issue are intended to present more focused overviews of some of the main debates involved in smart growth discourse.

NEW URBANISM

To the uninformed and imprecise, new urbanism is synonymous with smart growth, but there are significant differences. For one, they differ in origin. Whereas smart growth was launched from a community of environmentalists and policy planners, new urbanism was much more influenced by architects and physical planners. According to Bohl (2000), new urbanism is an umbrella term, encompassing the traditional neighborhood concepts of Andres Duany and Elizabeth Plater-Zyberk, the pedestrian pockets of Kelbaugh, the transit-oriented designs of Peter Calthorpe and Shelly Poticha, and the "quartiers" approach of Leon Krier. At the same time, new urbanism gathers its roots from the lineage of American city planning that includes Progressive Era town planning, the Garden Cities movement, and the regionalism of Lewis Mumford.

The agenda of new urbanism is articulated in the charter of the Congress for the New Urbanism (CNU), founded in 1993 by a coalition of architects, planners, and environmental advocates. Today, the CNU has more than twenty-three hundred members in two countries and forty-nine states including (at least symbolically) former federal cabinet secretaries (such as Secretary of Housing and Urban Development Andrew Cuomo), former state governors (such as Maryland Governor Parris Glendening and Christine Tod Whitman), and former mayors (such as John Norquist of Milwaukee, who is now president and CEO of the CNU). Though the movement has drawn criticism from much of the architectural academy, the ideas behind the CNU's charter have been gradually integrated into the curriculum at the top planning and architecture schools. As of 2004, there were more than 210 new urbanist developments under construction or complete in the United States.

New urbanist principles operate on a number of scales: buildings, lots and blocks, neighborhoods, districts and corridors, and ultimately entire cities and regions. Like the principles of smart growth, new urbanist principles call for organizing development in cities, towns, and villages that are compact, walkable, mixed-use, and transit-friendly and contain a diverse range of housing. But much more than advocates of smart growth, new urbanists focus on physical form, arguing that changes in physical form are a necessary precondition for urban economic, social, and ecological change. Furthermore, more than advocates of smart growth, new urbanists have confidence in the potential of market forces and call for

removing regulatory obstacles to urban development on par with the need for reforming planning policies.

In May 2002, the CNU and the National Center for Smart Growth Research and Education held a conference on the Campus of the University of Maryland, College Park. The symposium served both as a meeting of the research community of CNU and as the inaugural event at the Center for Smart Growth. The intent of the symposium was not to promote either smart growth or new urbanism but to explore the scientific foundations that underlie both.

Toward this end, leading scholars from a variety of institutions and disciplinary orientations were invited to write and present papers. Those papers are published here. They include papers by Susan Handy on transportation and land use, by Lawrence Frank and Peter Engelke on public health, by Ivonne Audirac on information and communications technology, by Yan Song on measuring urban form, by David Brain on social interaction, and by Marina Alberti on environmental quality. Each includes an extensive review of literature and offers new, heretofore unpublished insights.

After reading all the articles, it is likely that different readers will draw different conclusions. When there is room for multiple interpretations, readers often draw conclusions that support their own predispositions. We are no different. Ivonne Audirac reinforces our beliefs that new technologies, manifest through markets without countervailing public policies, will foster more and continued urban sprawl. Susan Handy makes us acknowledge that ending highway construction and building light rail systems are insufficient as countervailing strategies, though both would help. Marina Alberti convinces us that protecting the environment will require more than urban growth containment, and that in some respects containment may be counterproductive. Larry Frank and Peter Engleke, however, confirm our suspicions that human health is related to urban form and that greater attention to urban form can increase physical activity and perhaps improve human health. David Brain makes us understand that environments conducive to walking and other forms of physical activity will increase civility, not necessarily community. Finally, Yan Song shows us that smart growth, new urbanism, and urban sprawl can be measured, which reinforces our most deep-seeded conviction: that our ability to design better urban environments will be strengthened with more and improved empirical research.

IVONNE AUDIRAC

Ivonne Audirac begins with a gaze into the future of urban form. What she sees is a significant challenge for advocates of new urbanism and smart growth. Audirac asks two questions: (1) What do we know about the effects of information and communication technology (ICT) on urban form? and (2) What are the implications for smart growth?

In her review of previous research on these issues, Audirac characterizes two conceptual approaches to understanding the path of ICT: the evolutionary and revolutionary approach. The evolutionary approach views the path of ICT as a smooth progression of a specific technological trajectory—a cell phone, for example, as modern can on a string.

Under the evolutionary view, ICT can be viewed as lowering the cost of transportation or the draw of the central city. In a standard urban economic model, this leads to falling rent gradients and an outward spread of the metropolitan area. Under the revolutionary view, ICT can be viewed as reshaping interindustry relationships throughout the economy, creating what some call the network society or new economy. In this new economy, digital technologies manifest through the Internet backbone and wireless networks, make possible just-in-time production, telecommuting, and outsourcing as the foundation for interindustry relationships.

From either perspective, according to Audirac, the future portends a deconcentration of activity to small and midsize cities and the decentralization of cities of all sizes. Says Audirac, “The form of the information age metropolis emerges as (1) polycentric and intensely extranetworked by land, air, water, and digital means to global and regional urban systems; and (2) deeply digitally and multimodally intranetworked, albeit all the more socioeconomically segregated, physically overextended, and stuck in traffic.”

The theory and evidence Audirac offers cannot be encouraging to advocates of smart growth or new urbanism. It means that advocates of compact, mixed-use, and transit-oriented urban form do not have market forces on their side and must design and implement public policies capable of withstanding, or at least mitigating, these forces. Whether smart growth or new urbanism is up to the challenge, or whether the challenge serves the public good, is unknown.

SUSAN HANDY

Susan Handy addresses what is perhaps the key relationship in the smart growth debate: the transportation–land use connection. The discovery that transportation and land use are interrelated is not new, but an explicit focus on this relationship is behind many of the smart growth–new urbanist policy reforms. To explore the logic behind these reforms, Handy reviews the evidence on four propositions:

- Building more highways will contribute to more sprawl.
- Building more highways will lead to more driving.
- Investing in light rail transit will increase densities.
- Adopting new urbanism design strategies will reduce automobile use.

The question whether highways contribute to sprawl is an old one. Studies from the late 1950s demonstrated the prevailing tendency for certain types of businesses

to locate along highways in commercial strips. More recent studies further suggest that highways increase the overall rate of urban growth. Based on this evidence, Handy concludes, highways enable or encourage sprawl, but how much depends on local conditions. The converse, however, Handy believes is not true: halting highway construction will not slow the rate of sprawl. This suggests that sprawl is largely the result of other causes and that highway construction is neither a necessary nor sufficient condition for urban sprawl.

Whether building more highways will lead to more driving is a more recent concern. Sometimes called “induced demand” or “induced travel,” the logic behind this proposition is clear. Highway capacity lowers the cost of travel, which increases travel demand. Though the logic is simple, the empirical evidence is complex. According to Cervero (2002), an leading scholar in this field, “There is no question that road improvements prompt traffic increases. . . . To what degree and under what circumstances, however, remains a matter of debate.” Handy concurs. But because vehicle miles traveled has grown faster than highway capacity, population, the economy, and other potential factors, Handy warns, not building highways will not appreciably slow growth in vehicle travel.

The proposition that light rail transit systems will increase urban densities plays an important role in smart growth strategies. Light rail transit, according to smart growth advocates, not only reduces the demand for automobility but stimulates high-density development and relieves the pressure on cities to sprawl. As a result, light rail transit—when it has its intended effects—could serve as a central element in the reconfiguration of urban form. Once again, however, the empirical evidence is mixed. In Europe, transit stations have been a strong attractor of high-density development. In other places, nada. From this, Handy offers another conditional but compelling conclusion: light rail can stimulate high-density development but only in the presence of supporting public policy.

The last proposition, that new urbanist designs will reduce automobile use, is a central element of the new urbanist campaign. Once again, the seminal works date to the late 1950s, but the debate is far from over. The empirical evidence is confusing for two reasons. First, it is difficult to identify what design elements of new urbanism should cause less automobile travel, though the available evidence points to density, diversity, design, and pedestrian accessibility. The bigger problem, however, is causation. Are those who live in new urbanist developments less inclined to drive, or do those less inclined to drive live in new urbanist developments? Although a few recent studies have provided new insights, the answer, Handy contends, awaits better data and research designs.

To conclude, Handy offers the following:

- New highway capacity will influence where growth occurs.
- New highway capacity might increase travel—a little.
- Light rail transit can encourage higher densities under certain conditions.

- New urbanism strategies make it easier for those who want to drive less to actually drive less.

These conclusions are less than definitive answers to the questions posed at the beginning. Thus, says Handy, communities must decide for themselves whether they provide a compelling case for policies that promote new urbanism or smart growth.

MARINA ALBERTI

Marina Alberti addresses the relationship between the environment and urban form. This is a critical element of the EPA's assault on urban sprawl. As Alberti describes, the claim that sprawl adversely affects the environment has multiple elements. First, urban development replaces natural ground cover with impervious surfaces, which degrades water quality and adversely affects aquatic species. Second, urban sprawl disrupts wildlife habitat with adverse effects on wildlife. Third, urban sprawl increases vehicle miles traveled, which adversely affects air quality. For all three reasons, environmentalist claim, urban growth should be dense and compact. Alberti addresses the first two of these arguments and concludes that much more research is needed to make the case for compact urban form.

Drawing on landscape ecology and complex systems theory, Alberti begins by discussing the limitations of monodisciplinary study of the relationship between the environment and urban form. Most ecologists, she asserts, view urban areas as either monolithic disturbances in natural landscapes or, only slightly better, unidirectional urban-to-rural gradients. Such approaches are unable to capture the potentially diverse impacts urban landscapes can have on ecological health. Most social scientists, she suggests, oversimplify the diverse environmental factors that affect ecological functions. This has caused the unnecessary and perhaps counterproductive obsession with impervious surface.

Instead, Alberti argues, interdisciplinary teams of researchers need to develop more nuanced and complex measures of landscape patterns and ecosystem health. After a general discussion, she offers two examples from work at the University of Washington. In these examples, urban development patterns in the Puget Sound region are measured using six landscape measures:

- percentage of land in various landscape types,
- mean "patch" size,
- contagion,
- the Shannon Index,
- aggregation, and
- percentage of like adjacencies.

Using these measures, Alberti and her colleagues, examine the effects of urban form on two measures of ecological health: (1) the Benthic Index of Biological Integrity (a measure used to assess the diversity of aquatic species) and (2) relative bird abundance during the breeding season. The results produced some interesting and provocative results.

After analyzing spatial variations in landscape measures across more common measures of urban land uses, Alberti and colleagues suggest that single-family residential parcels have measurably lower levels of impervious surfaces than multi-family parcels or parcels currently in mixed uses. Also, and perhaps more important, different land uses have different levels of landscape fragmentation and natural covers that can be preserved under different land use scenarios. These results raise serious questions about prescriptions for high-density, multifamily development based purely on ecological grounds. Further, Alberti et al. find that the spatial pattern of impervious surfaces as well as their percentage levels can affect fish species in sensitive watersheds. Bird species, on the other hand, are more strongly affected by the total availability of forested cover than its spatial configuration. From these results Alberti elects not to offer implications for smart growth or new urbanism, except to assert that the interactions among urban economic, social, and ecological processes are extraordinarily complex and stand to benefit from much more rigorous research.

LARRY FRANK AND PETER ENGELKE

Frank and Engelke take on the issue of urban form and public health, a topic that has recently captured the attention of public health activists. They assert that the connection between urban development and public health has rightly moved beyond a focus on the impacts of air pollution and now must incorporate the issue of urban form as well. As a statistical matter, few argue against the fact that Americans have become more sedentary and overweight or obese. The question is whether the form of cities can be implicated in this progression.

The authors investigate this issue by looking at the data on the interrelationships between urban form, travel behavior, and public health. First, they assess the historical interest in the relationship between cities and health. Their surprising conclusion is that research into the connections between urban form and health was actually much more active during the first part of the twentieth century and was a key generator of the field of urban and regional planning. Lack of interest, which occurred in the last half of the twentieth century and is now being rekindled, is actually something of an “anomaly” in terms of a broader historical perspective.

Second, the authors summarize the literature on how the built environment influences public health by way of a three-stage process: “first, by its direct effect on motorized travel; second, by the effect produced by the resulting automobile emissions on air quality; and third, by the relationships between air quality and health.” In the first instance, they admit, as did Handy, that there are “considerable

differences of opinion” about whether there is a correlation between urban form and travel behavior. The second and third instances are similarly complex, and the degree to which auto travel impacts air quality and air quality impacts health depends on a wide range of measurement factors.

Finally, Frank and Engelke offer an assessment of the public health perspective on urban form, focusing on types of physical activity, the influence of the built environment on physical activity, and the relationship between physical activity and public health outcomes. Research generally supports the conclusion that distance between locations is the most important determinant of whether people choose to walk, an important aspect of physical activity. While much more research has focused on the relationship between automobile travel and urban form, the data that are available tend to support the theory that single-use, low-density development and disconnected street networks inhibit walking and physical activity.

The challenge presented from the multiple lines of research the authors present is that the objectives involved may at times conflict. For example, such a conflict exists between air quality and physical activity: “It is entirely possible that the built environment solutions that are necessary to increase physical activity levels would not necessarily protect respiratory health for many people.” What is needed, then, is a multidisciplinary, synergistic approach to this topic. The complex set of relationships the authors clearly lay out will require an interdisciplinary synergy to advance knowledge about the relationship between urban form and health.

DAVID BRAIN

David Brain tackles the difficult problem of relating urban form (new urbanism) to sociological issues. The claims and counterclaims about the ability of certain urban types to create a particular, desired sociological response has been the subject of a great deal of debate. Often the claims are too sweeping (i.e., that certain urban forms “create” a sense of community), but on the other hand, it would be impossible to deny that there is a relationship between the built environment and social phenomena. As in the other articles in this volume, the issues are a matter of finding the right balance among a complex array of complicating factors.

Brain develops his survey of the social issues involved in three parts. He first overviews the common critiques made about new urbanism’s social claims. He presents a counterargument by outlining “a more complex conceptual understanding of the social agenda implied by the new urbanist project.” Importantly, the observation is made that the idea that community has been “lost” due to geographic dispersion is actually not well supported by research. The real problem may be a loss of “civility” rather than “community,” and this is a subject to which new urbanism can speak.

Second, Brain discusses varying concepts of the sociology of place and how gaps in existing analyses have neglected the particularities of place and how place is constructed. These particularities have real social significance. This is revealed by

the contrast between the sociological implications of conventional suburban development and those called for by the new urbanists. Specifically, the “techno-logic” of conventional suburban development is abstracted from the underlying relationships on which it depends. Development along commercial strips, for example, is like a machine put together so that individuals can assemble the “pieces of a lifestyle,” independent from any communal world or “the encumbrance of context.” New urbanism, by contrast, seeks a renewal that cultivates commonality in context. Its goal is to create “a framework within which choices can be understood as contributing to a common outcome.”

Finally, David Brain outlines a research agenda that might improve how we look at the connections between proposals for alternative urban forms and various social issues—that is, social interaction, connectedness, and behavior. He argues that this agenda should concentrate in particular on place-making that moves “beyond the limitations of an ‘environment and behavior’ approach” to one that looks at the idea of “civic innovation.” As a concluding proposal, Brain challenges us to think clearly about why we are researching these issues in the first place, arguing that an action-oriented research in which “the production of knowledge is closely linked to capacities for action” may be more justified. In this regard, social science, Brain argues, ought to be more sensitive to the social construction of place.

YAN SONG

Yan Song provides an in-depth look at development patterns in five counties. Hers is not the first attempt to measure urban sprawl or changes in urban development patterns over time. Hers is, however, perhaps the most detailed quantitative attempt to date. Though her results are mixed, her analysis raises the prospects for continuing progress toward our understanding of urban sprawl and toward improving our ability to address it effectively.

Song begins with a description of her study sites—Portland, Oregon; Montgomery County, Maryland; and Orange County, Florida—three of the most progressive places in the United States on land use policy. All three have some form of urban containment policy, plans for allocating public facilities, and regulations that govern the character of subdivisions. Though not a representative sample, these sites offer insights into how development trends have changed in places that pay close attention to such issues.

Song then defines her measures of urban form. These include

- internal connectivity,
- perimeter of blocks,
- lengths of cul-de-sacs,
- external connectivity,
- lot size,
- single-family density,

- single-family floor space,
- land use mix,
- average distance to commercial use, and
- pedestrian accessibility to commercial use.

Each of these is measured for each transportation analysis zone (TAZ) (about three hundred to six hundred per county), and each TAZ is dated by the median age of single-family houses developed in each zone. As a result, Song is able to show visually and statistically how urban development patterns vary within metropolitan areas, across metropolitan areas, and over time. Her results are surprising and unsurprising.

Not surprisingly, urban form varies significantly across metropolitan areas and over time. Multnomah County, Oregon, which contains the older, central city of the Portland metropolitan area, has the most internally connected, externally connected, dense, and best pedestrian accessibility to commercial uses. Also not surprisingly, many measures of urban form—external connectivity, proximity and accessibility to commercial uses, and land use mix—have gotten worse in all areas over time.

More surprisingly, some measures of urban form appear to be improving from the perspective of smart growth advocates and new urbanists. Internal connectivity, for example, began improving in the 1980s after falling for most of the postwar period. Similarly, single-family density (and the inverse of lot size) also reversed trends at about the same time. Whether this is the result of effective public policies or market forces Song does not answer. But her analysis makes this much clear: (1) sprawl is a complex problem; (2) it can be measured; and (3) continued efforts to measure and monitor are likely to yield better smart growth and new urbanist policies.

THE ROLE OF RESEARCH

Smart growth and new urbanism are movements that continue to evolve. As researchers, our interest is in making sure these movements do not become bogged down in outdated notions, ideological fervor, or unsubstantiated claims about causes and effects. There will never be completely right or completely wrong answers, but there should always be a continuing need to question assumptions, challenge the status quo, and push for new ways of dealing with an endemic problem.

This is not to say that future research must become more and more relative and conditional. The American pattern of urban growth has been less than ideal. The point of doing research on smart growth and new urbanism is to strengthen these movements by guiding them, if need be, in new or altered directions, and sometimes this requires questioning some of their initial principles and assumptions. However, advocates can find resolve in the fact that this research will be unlikely to

refute the fundamental claim that current patterns of urban growth are suboptimal in economic, social, and/or environmental terms. This resolve, after all, is what underlies the shared commitment of a broad spectrum of the American public and what has catapulted these movements to the forefront of public discourse.

Our hope is that additional research can keep the dialogue alive, continually probing for new insights that will help us deal with the problem of urban sprawl. Sustaining a depth and rigor of research interest should be highly valued by both movements, not interpreted as a threat to preconceived notions. This is the only way movements like smart growth and new urbanism can sustain themselves. We look to the broader research community to help in that endeavor.

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