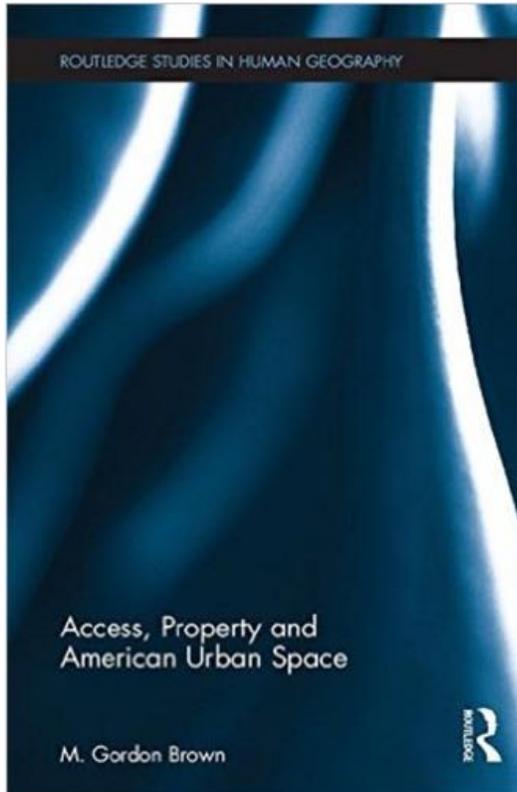


***Access, Property and American Urban Space* by M. Gordon Brown** Some Essentials  
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This book addresses the economic effect of urban spatial form. Since the 1950s, the American population doubled to over 310 million. In 1940, 32.5 percent of the U.S. metropolitan population lived in central cities and 15.3 percent in suburbs. By 2000, more people settled in new suburban developments bringing the suburban share of metropolitan population up to 50.0 percent, while the proportion living in central cities stayed about the same as in 1940: 30.3 percent.

But while population of suburbs grew, over the past 40 years,

- America's annual economic growth declined 40%;
- Successful entrepreneurship decreased over 40%;
- Real estate debt doubled.

*Access, Property and American Urban Space* describes how a spatial-economic regime shift took place. It is a critique in words, numbers and graphics of conventional thought about cities. It shows how form promoters from transportation and land use planning, eminent domain and related law, architecture, real estate and finance influenced both government policy and consumer preferences. There are a few names in this long game: Christopher Alexander, Anthony Giddens, Adam Smith, Thomas Jefferson, Gouverneur Morris and Frank Lloyd Wright, but most are virtually anonymous.

The critical and analytic framework uses concepts not common in urban thought: general purpose technologies, rent seeking, path dependence, complexity, prospect-refuge theory, heuristics and biases, exponential and scale-free networks, moral design and transaction costs. Crucial states in the progress of spatial thought and the thinking of the Founding Fathers play major roles. The research behind the book goes beyond typical published information and data sources into engineering reports, court opinions, newspaper articles, maps and plans to identify factors below the radar. Moreover, it shows that theories of some influential urban theorists are questionable.

Fifty years ago American core cities were in dire straits and suburbs were growing. Today, new modes of thinking addressing sustainability, density, transit, smart cities, movements like the New Urbanism and the popularity of core cities as a location for technology companies suggest American cities are making big changes. But this ignores the expansive geography of continuously growing and sprawled new suburbs (including the people who live in them), the thinking that developed these places, and the stubborn realities that not only maintain the regime shift and separate suburban and core city life but, without being intelligently and massively addressed, will further limit human interactions that for millennia have led to economic growth.

The new economic geography associated with Krugman addresses phenomena wherein urban areas are chunks fitting into a much larger national and international spatial structure. Like it, but focused on these urban chunks themselves, the idea behind this book is that in these chunks are structures of finer-grained, spatial-material linkages fostering concentration and access many in pre WWII urban areas, and, in most post-WWII areas, inhibiting concentration and access. But, unlike the new economic geography, the form of these structures does not emerge from invisible-hand processes but from the beliefs and decisions of a relative small group of form promoters. To reach the point where it's possible to understand how urban form and productivity are linked, it's essential to go beyond the usual design critiques and economic notions of form in bid-rent theory

and its predecessors into everyday practical thinking about space in real estate and architecture. This requires looking back at how human spatial cognition developed over the long period that led to the innovations of permanent settlements and authentic cities without the assistance of formal geometry and geography.

### **Access**

Why do people live in cities? A common answer is that cities provide access: access to resources one doesn't possess or own but might need. Cities aren't the only way to gain access to needed resources. The screen I see as I type this gives me another way to gain access to resources I might need. And for many resources, it's a lot easier. But not for everything, especially those incalculable opportunities for face-to-face interactions that ultimately drive economic growth. Urban form organizes resources and access is the mechanism that generates urban form.

Over the past 50 years there has been an almost imperceptible but pervasive shift in the spatial structure of highways, streets and walkways that once enabled access to the myriad resources cities offer. Large parts of the population have either gradually abandoned old routines or grown up knowing only new ones. In the built environment, access is both a) the link between a street and the facilities on privately owned parcels of real estate and b) the street and road system itself. Access changes in the former are mostly affected by eminent domain; in the latter mostly by the police power. In addition, new roads, streets and highways, and modifications to street and road systems over the past six decades have led to massive changes in real estate development and other practices. Roads, streets and highways once connected separations. Now they are separated connections.

Commentary about access case law, whether from the government's or the property owner's perspective, bluntly indicates that the law is confusing and contradictory. As one analysis of of court opinions put it, "... the definition of reasonable access is a purely subjective one. Inconsistencies in the analysis of reasonable access litigation indicate that no uniformity exists, and the individual judge may determine what he/she believes to be reasonable." But access now can be measured.

Initiating the regime shift began with a paternalistic bias about how access had to be regulated that seeped into many professional and bureaucratic practices. This occurred slowly from the mid 19<sup>th</sup> to the mid 20<sup>th</sup> century and rapidly after WWII. One reason this shift has had economic effects is that these configurations are inconsistent with the human spatial cognition that has developed for millennia.

### **Property**

Parcels of real estate, mostly private, and street and road systems, mostly public, are forms of real property unknown before authentic cities emerged over 5000 years ago. They are based on earlier customs of spatial use resting partly on developments during the agricultural revolution and early permanent settlements.

Access is addressed in property law. The commonsense view of property is that it is objects or corporeal things. The view in law is that property is a bundle of rights. In the law, access is clearly and widely considered a property right, but it's not considered a corporeal thing, partly because of the lack of substance or material to the spatial character of access. Although access has an irreducible spatial character evident in graphic and diagrammatic representations, the law relies heavily on sentential or lexical representations that inhibit reasonable measurement and analysis. As a result, courts say access should be reasonable, not necessarily convenient. In most urban areas today, access has become very inconvenient.

The property dimension has been ignored in urban theory and the law has ignored the spatial dimension. A reason *reasonable* is misunderstood is that real estate and real property are conflated. They're not the same. Real estate refers to *brute facts*, the spatial-materiality of buildings, improvements and the land they occupy. Real property refers to *institutional facts*, the abstract financial, legal, agency and other conditions and rights inherent in the ownership of real estate.

## **American Urban Space**

Europeans marveled at the rationality of American street systems on their visits here in the 19<sup>th</sup> century. It was understood towns and cities would have grid-form streets while roads in rural areas would follow the horizontal and vertical curvatures of the natural environment. Many 19<sup>th</sup> century railroad suburbs had both traditional grids and the curvilinear grids introduced by Olmstead and Vaux.

The configuration of most residential areas built since the 1950s deviated strikingly from these grid-form settlement patterns. In addition, many street patterns in central cities changed to accommodate movement between suburb and core city. These changes were so pervasive they caused a regime shift in settlement patterns beginning in the 1970s from an exponential network structure to a scale-free structure that diminished economic growth and resilience.

The regime shift concept is used extensively to describe changes in the natural environment but it applies broadly. Depending on its scale, a shift in one regime can have a cascading effect by breaching multiple thresholds across scales of space, time and organization into other domains: ecological, social, cultural and economic for example. It results in a loss of resilience because former functions, structures, feedbacks no longer work. Close to 30 percent of the American population now lives in these new configurations and 30 percent more are directly affected.

## **Chapter summaries**

*Chapter 1* introduces the problem in the context of secular stagnation. Few economists understand urban form. But branches of economic thought bear on urban form's economic impact. These include behavioral economics, law and economics, political economics, growth economics, public choice economics (rent seeking), the deductivist economics critique and transaction economics. All are relevant; none dominate.

*Chapter 2* opens with a brief look at changes in settlement form from early 19th- to late 20th-century America in order to introduce the idea of path dependence and show why access is different from accessibility. Next is a review of thought about patterns of disconnection developed over the post-World War II decades and why the relationship between real property and wealth needs to be understood in the context of urban form. Local conflicts illustrate the politics of access that repeatedly shows itself in legal disputes. A review of the deficiencies of theories of urban form follows.

*Chapter 3* discusses how built environment disciplines such as traffic engineering, architecture and urban design framed the vehicle movement problem so it led, through law, to widespread post-World War II changes in settlement configurations. Driven by tacit and paternalistic moral design concepts, form promoters both before and after World War II sought to reform urban form to control automobiles. The influential design theorist Christopher Alexander claimed the street was obsolete. Phases of reform repeatedly emerge in American society, and when they joined in this instance with moral design, the result was a false utopia. The meanings of terms used in traffic engineering, urban design and law elide clarity and bias thinking toward categorical approaches. Courts claimed only reasonable access was necessary but had no way of defining reasonable access. A result is that spatial-material characteristics that don't fit in convenient categories are ignored. Currently beginning a scientific turn, the law should gear up for access. But natural language can't yield a useful measure of access.

Measuring access networks and interfaces requires appropriate representations. *Chapter 4* describes the backgrounds of network analysis and complexity theory, as well as the simple geometric specifics of the models and measures employed. Mental maps show that the spatial-material details of the places and paths we move through are more complex than we realize, are difficult to recall with precision, and subject to the weaknesses of describing them in natural language. Ontological primitives extracted from functional distance, a previously undefined concept that has been around for about 50 years, are used to expose the underlying structure of access networks and interfaces. Two analytic models are then developed: one for the access network of street systems and one for the access interfaces between streets and private property.

*Chapter 5* applies the models developed in chapter 4 to real cases of problematic pedestrian and vehicle access. Recognition of primitive spatial shapes is fundamental to human movement in the spatial-material world. These distinctive spatial shapes and intervals connect in natural and built human environments to form networks that encourage or discourage human movement on one hand and planned and unplanned reactions or responses to human movement on the other. Part 1 looks at the relation between congestion and configuration in first- and second-tier cities. Part 2 at eminent domain access takings. The value loss in an access taking is the rough equivalent of increased spatial transaction costs. Part 3 at failed pedestrian-exclusive environments in public and private contexts. Of interest is that the network structures of heavily congested road systems and failed real estate (problem property) are substantially similar.

*Chapter 6* contrasts spatial conceptions in real estate and architecture, the two fields most responsible for developing urban form, showing how space and property, both public and private, overlap each other. Sometimes these words have importantly narrow meanings; in others the meanings are muddled. Everyday urban space and real property interact with and impact urban form, but the disciplines of professionals and academics shaping and tinkering with urban form don't recognize the differences between institutional and brute facts.

*Chapter 7* addresses spatial history and prehistory and recent changes in spatial thought. Turning permanent settlements into cities took 5000 years of trial and error effort. The ancient Greeks gave serious thought to space and the Romans thought of space as intervals similar to temporal intervals, but urban space did not become a topic of theoretical interest until the 19th century when geographical, urban and architectural space required recognition soon after economic space expanded. But the capability we have in configuring space to meet our needs began long before permanent settlements and writing—indeed, long before human language—when, to survive, we had to think with space, not about it. Thus fundamental neurological, cognitive and social mechanisms link to our use of spatial form and real property and establish a tacit logic of spatial heuristics, a baseline for why the vast majority of human settlements have grid-form street systems.

The post World War II access reform movement was one of several moral design movements over the past 200 years that eventually led to the regime shift transforming American urban form. *Chapter 8* shows new design patterns arriving in 50-year intervals in relation to social, economic and cultural phenomena. Existing grid patterns in the core cities continued but would eventually be retailed, while new settlements were tattooed with new patterns. Supplanting the grid was possible because it was already being discredited during the decades preceding World War II. The decisions by the relatively few form promoters in planning, design, engineering, real estate and transportation development and finance, whether in the public or private sector, as well as the mass building techniques pioneered by Levitt & Sons, Inc., led to more complex spatial patterns. When the many instances of these increases are aggregated for an entire metropolitan area, the result is a regime shift. The new pattern may appear to have market acceptance, but it's resulted in path dependence.

*Chapter 9* concludes with brief essays considering realities that emerge from putting access in a broader context. One shows that the micro transformations of access and the resulting regime shift are key tools inducing a large-scale economic and social restructuring of American society. Another reframes the American street grid as a general-purpose technology. Others show how links between an ideology of a pastoral ideal, a communications utopia and rent seeking led to increased spatial transaction costs enabling a shift of economic surplus from consumers to producers. To the Founding Fathers, a street grid was a tacit element of America's unwritten constitution fundamental to American spatial and economic order.

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