The World Urban Hierarchy:
Implications for Cities, Top to Bottom

DAVID A. SMITH
Professor of Planning, Policy, and Design
University of California, Irvine

IN TERMS OF ABSOLUTE NUMBERS, there is little doubt that city-ward migration over the past hundred years constitutes the most massive movement of human population in the history of our species. Only a tiny fraction of the world's people lived in urban areas in 1800; by 1900 this proportion had risen to about one in ten. In 2000, close to half of the world's six billion humans were city dwellers, according to United Nations data, with urban residents projected to become more numerous than their rural counterparts by the year 2007.[1] The average annual population growth in cities between 2000 and 2030 is projected at 1.8%—if that rate holds, the world's urban population will double in thirty-eight years. Almost all of the growth of the world's total population during that three decade period is expected to be absorbed by cities in poorer countries/regions.[2] While many mid-twentieth century urban scholars argued, hopefully, that urbanization in "less developed countries" would lead to a "generative" and "modernizing" dynamic,[3] these "third world," or peripheral cities are in fact characterized by uneven growth, poverty, and widening inequality.[4]

The sheer scale, unevenness, and harsh human consequences of urbanization in the underdeveloped countries demand our attention, but there is another aspect of urbanization that may be equally salient in today's "globalizing" world: the emergence of global cities as the key nodes and switching points in the expanding circuits of world capitalism. By the mid-1980s (long predating the current buzz about globalization), it was becoming obvious that some urban places were playing increasingly crucial roles in the world economy, and that relationships between cities were intensifying and reconfiguring. Major changes in the organization of production and finance, which

45

DAVID SMITH is Professor of Sociology and Professor of Planning, Policy and Design at the University of California, Irvine. He recently received support from the National Science Foundation for a project on globalzation and networks of world cities, and is the author of a number of works. Most recently, with P. Ciccantell and G. Seidman, he is the co-editor of *Nature, Raw Materials, and Political Economy,* forthcoming (2005).

were variously described as the twilight of "global Fordism,"[5] the emergence of "flexible production,"[6] or the rise of a "new Leviathan,"[7] focused attention on "world cities"[8] or "global cities."[9]

These places are seen as the crucial points in the rapidly multiplying and lengthening strands of the global economic webs of trade, travel, communication, and finance that define the contemporary world economy. The emergence of "offshore" manufacturing in far-flung "global factories"[10] in the 1970s and 1980s was the beginning of a trend leading to thoroughly globalized production in a wide array of goods and services by the turn of the century. Simultaneously, flows of capital, people, commodities, and information around the planet began moving at an increasing rate. The high velocity and immense complexity of these exchanges can be dizzying, making it difficult for analysts to comprehend the process, much less offer ideas about how to control it.[11] Things are not only happening very fast—the pace is constantly increasing. Even insiders like transnational financier George Soros liken the contemporary global economy to a runaway train.[12]

Putting aside this image of "lost control," there is an emerging consensus that global cities are the switchboards or nerve centers of these worldwide corporate and financial networks, acting as "command and control centers."[13] In these centers cluster the headquarters of multinational corporations, giant banks, and new supranational economic institutions (such as trade organizations or development banks). These world cities are the increasingly dominant centers of a progressively more integrated, hierarchical world city system.[14] Perhaps paradoxically, many civic leaders aspire to global city status and see it as a key to economic dynamism and growth, though it is no panacea for urban problems. Instead of leading to the general prosperity of local citizens, growth seems to generate social polarization within these world cities.[15]

Before we embark on a lengthy discussion of the global city, it is necessary to comprehend the theoretical generation of this concept. The world/global city conceptual framework developed by John Friedman and Saskia Sassen not only stimulated research—the paradigm also engendered heated debates about the global city's basic premise, its claims,[16] and the breadth of its applicability.[17] In an era of rapid global economic change, it is not surprising that many of the major monographs on global cities consider exclusively those cities "on the top," emphasizing their cutting edge advantages as centers for multinational management, finance, and high level business services.[18] These surveys focused on the great metropoles of Western Europe, North America, and East Asia, arguing that few of even the very largest urban agglomerations in the third world (or in the poorer countries on the periphery of the world-system) can truly be called global cities.[19]

Left out of discussions on global/world cities—but, obviously, of enormous em-

pirical importance—research on urbanization in most of the underdeveloped world consists of theoretically modest (or even candidly eclectic and descriptive) case studies, often implicitly grounded in old "developmentalist" assumptions about the ultimately progressive nature of the urban process. Exemplifying this point are some recent anthologies. Josef Gugler, editor of the mid-1990s *The Urban Transformation of the Developing World* and *Cities in the Developing World*: *Issues, Theory, and Policy*, advocates using multiple theoretical approaches while "privileging" none, with a heavy focus on distinct "regional trajectories."[20] Another two volume anthology—the arguably more influential *Metropolis Era, Volumes 1 and 2* by Mattei Dogan and John Kasarda—introduced the idea of the "mega-city;"[21] a concept suggesting that huge cities demographically epitomized "the metropolitan explosion in the third world"[22] in recent years. The image of the mega-city dominating the urbanizing landscape of underdeveloped regions of the world gained wide currency.[23]

This may be evocative, but is unfortunately, not very helpful empirically or analytically. For one thing, it turns out that the proportion of people living in mega-cities with populations over ten million is surprisingly small—most of the city growth, even in the poorer countries, is in small and medium sized urban areas.[24] Furthermore, the mega-cities view also lacks conceptual coherence. If mega-city implies anything beyond a description of sheer scale, it can only confound by implying the dubious proposition that all giant cities in the world experience common problems or tend to follow similar dynamics. Volumes of case studies belie this simplistic view.

The dramatic transformations of and in cities, the epochal shift of world urban demographic growth toward previously un- and under-developed countries, coupled with the rise of the central focus on global cities and globalization, presents an intriguing dilemma for comparative urban studies and urban sociology. How can we reframe a global perspective that probes the depths of the urban slums and poverty in underdeveloped regions, as well as the commanding heights of high arbitrage on Wall Street or in the City of London?

NETWORK AND HIERARCHY IN A WORLD CITY SYSTEM

Implicit in the world cities literature is the idea that these places occupy high places in some sort of global urban system or hierarchy. The idea of different "tiers" of interconnected world cities in Friedmann's early essays imply a network or relational aspect[25] similar to national patterns of "urban dominance" conceptualized by ecological approaches to urban sociology in the mid-twentieth century.[26] While urban scholars have long claimed that great cities are intriguing places to study global processes, some now argue that city networks are increasingly important constitutive dimensions of the glo-

bal political economy (rivaling inter-national relations in significance).[27] From this perspective, the major cities of the world are the key organizational nodes in multiple global networks of economic, social, demographic, and information flows. This relational perspective on cities and the world-system provides a powerful image. But too often arguments about the world city hierarchy and the relative ranking of urban places are inexact. Scholarly discussions often end with rough guesstimates of where particular cities fit, while popular discourse is often hijacked by civic boosterism that insists that "our" city is at or near the top.

Moving to a more rigorous image of the morphology of the global urban hierarchy has proven to be difficult. David Meyer made an early attempt, examining international banking headquarters in various cities in Latin American, North America and Europe.[28] Saskia Sassen provided volumes of both national- and city-level data to make the case for the dominance of New York, Tokyo, and London.[29] Admirable as these efforts were, they still failed to directly tap the relational aspect of global cities.[30] The obvious technique for capturing this dimension of the world city system is formal network analysis. But any research that uses this methodology requires data on connections, flows, or ties between units. This sort of information is much more difficult to obtain about any large scale global system (it is much easier to find data on the attributes of particular places than the links or flows between them); network data that is available is usually compiled for national units (for instance, flows of country-to-country trade).[31] Recently, however, researchers on both sides of the Atlantic have overcome this data problem and used quantitative network analysis techniques to examine inter-urban linkages and map the world city hierarchy in the late twentieth and early twenty-first centuries.

The largest and most extensive project is the "Globalization and World Cities Study Group and Network" at Loughborough University, led by Peter Taylor. This project systematically collected data on city-to-city ties based on 1) a content analysis of business news, 2) survey data on the movement of skilled labor within firms, and 3) the concentration of "producer services" in cities.[32] The result is an impressive compendium of studies that rank as many as 316 major urban centers across six continents and many countries.[33] Arthur Alderson and Jason Beckfield at Indiana University use a similar array of quantitative techniques and empirically different but conceptually similar data, such as the branch locations of Fortune 500 multinational enterprises in a large number of cities around the world, ultimately ranking the top fifty world cities.[34] Finally, my colleague Michael Timberlake and I also use formal network analysis to examine inter-urban linkages. But instead of using information on corporate or financial firm branch offices, like our two sets of colleagues, we use information on international air travel (from airport-to-airport).[35]

Each of these collaborative research projects on the world city system as a network has yielded a great deal of information, and each have distinct strengths and weaknesses.[36] Despite using different measures for inter-city linkages and different network methodological tools, there is quite a bit of overlap in the results: New York, London, Paris, and Tokyo are among the most dominant or prominent in each ranking system, the top echelon of the next twenty-five to fifty cities tend to be North American, East Asian, and Western European—regional "clique" patterns emerge.

Leaving aside the details of these studies, the main point to emphasize is that it is not only possible to conceptualize a global city system, researchers now have the data and the analytical tools to rigorously measure where the world's urban places "fit" into a global urban hierarchy. With the idea of a world city hierarchy whose general contours we can discern, it is possible to re-theorize urban dynamics, even in those places that are incorporated into this network at its lower reaches.

> There is some truth to the claim that, "All cities today are world cities." All the emerging cities of Africa, Latin America, and Southeast Asia are linked to the global economy and, particularly, to the network of world cities.

49

THE URBAN PERIPHERY: LINKED CITIES IN THE UNDERDEVELOPED REGIONS

I began this essay highlighting the importance of understanding urbanization in the poorer regions and countries of the world, emphasizing the fact that recent massive rural-to-urban migration and the rapid growth of cities there represented an epochal shift, at least as important as the much noted rise of world cities in the rich postindustrial societies in the past couple of decades. In this concluding section, the focus will return to cities of the poor in underdeveloped regions.

There is some truth to the claim that, "All cities today are world cities."[37] All the emerging cities of Africa, Latin America, and Southeast Asia are linked to the global economy and, particularly, to the network of world cities, in a variety of ways. But it is also clear that various metropolises fit into the world urban hierarchy at different levels and play very distinctive roles in that wider system. Analysis of urban systems, whether global, national, or regional, from the perspective of geography or sociology, using the old human ecological framework or the newer urban political economy approach, emphasizes power and dominance.[38] Furthermore, one of the key advantages of identifying where places fit into positions in these systems, is that "structural isomorphism" will lead to similar roles. In other words, if two cites are at or about the same level in the

urban hierarchy, we should logically expect them to follow broadly similar dynamics.[39]

In the 1970s and 1980s, at a time when the neo-Marxist world-system scholarship was blossoming, an "urbanization in the world-economy"[40] approach emerged. This perspective took its initial impetus from Manuel Castells' suggestion that we should consider the growth of third world cities as "dependent urbanization."[41] This developed into a theory of "dependent urbanization," which attempted to apply world-system categories to the growth of cities in various "zones" (core, periphery and semiperiphery) of the globe.

Today's emphasis on world city systems allows us to think about (and even rigorously classify) urban places around the world in terms of their place within the global urban hierarchy.

Scholars using this approach were very productive,[42] and their work was a major improvement upon the conventional comparative urban research of the proceeding era that was very invested in "developmentalism" and "modernization theory." But it was also problematic.

There are many variations on urban themes around the world, reflecting local historical conditions and regional trajectories, and it was unrealistic to expect that urbanization could be "explained" by world-system categories. Furthermore, the world-system approach itself (like most of comparative sociology at the time) remained "state-centric" in this period, focusing on nations as the critical unit to categorize and the main locus of development or underdevelopment.

Today's emphasis on world city systems allows us to think about (and even rigorously classify) urban places around the world in terms of their place within the global urban hierarchy.

In the empirical work on world city networks, major cities in underdeveloped countries often appear as "near isolates" or weakly connected, and at, or near, the bottom of the hierarchy.[43] Many of these places are truly peripheral to the network—they are part of the system, but tend to have fewer links to other cities in general, sparse connections to other similarly low ranking urban places (even in their own world regions), and strong bilateral ties to one of the core world cities. This relationship to one of the "top" cities is often reminiscent of (and may even have originated in) old colonial and neo-colonial geopolitical relations (examples might include West African capital cities' air links to Paris, Latin American urban ties to New York, or Southeast Asian cities' financial connections to Tokyo). The structural similarity between these cities at the nether reaches of the global urban hierarchy should have theoretical import, and help unravel patterns of social change within these places.

Understanding the global urban hierarchy and how these large, growing, but

lower echelon cities fit into it, should provide scholars new conceptual traction. We can locate local urban process in terms of both their place in the world urban system and the wider global economy, and probe the interaction between the two. Cities that hold places on the lower rungs of the world city system, and are also located in peripheral zones of the world-economy (for example, much of sub-Saharan Africa, most of Latin America, and large swathes of Southeast Asia) may be doubly disadvantaged—and in specific ways that can be more fully understood via theoretically-informed studies. Conceptualizing city dynamics in terms of the articulation of their structural positions/roles in these larger dual global structures suggests an incipient conceptual framework for studying urban dynamics in underdeveloped regions that have been ignored by default in much of the recent work on world cities.[44]

It is important that these rapidly growing cities of the poor be brought back into conceptual focus. I strongly agree with recent calls by other scholars that urbanization in poor countries must return to a central place in our thinking about global urban processes. They are far too important to be left "off the map."[45] But neither a retreat into eclecticism (emphasizing the diversity of the world's cities) nor a return to a generic "cosmopolitan urban theory" (that suggests all cities in the world share similar dynamics) offers constructive directions for future research. Comparative urban scholars need solid conceptual foundations to ground their research, help them formulate central questions, and channel their investigations of different cities and patterns of urbanization in a way that maintains dialogue with one another and builds common and maybe even cumulative theoretical understanding. Rather than eschewing categories or pretending that cities can escape "global logics," we must work to illuminate the multiple, cross-cutting, world processes, and hierarchies in which all urban areas are interwoven and enmeshed. Some classification systems are better than others, hypothesized patterns fail to materialize with some regularity, and even entire theoretical paradigms can fall (witness the old "developmentalist/modernization" approach). But the rapidly growing, poverty-stricken cities of the global South, need to be viewed through a conceptual lens, and locating them on grids of global networks, including the world city hierarchy, offers a promising starting point.

Finally, some brief comments on attempts to bring about change. Most comparative urban scholars are interested in cities and development because we would like these processes to lead to better outcomes, even a better world. How does the image of cities in a global urban system relate to images of urban utopia? To begin, I think it is a mistake to place much onus on academic theory for the dire conditions of contemporary cities. Suggestions that scholarship on world cities is the prime motivation behind urban elite efforts to implement frequently counter-productive and regressive urban development policies to move their cities up the hierarchy[46] grossly underestimates the

51

ability of place-based capitalists and growth coalitions to identify their own narrow interests.[47] Truly, policymakers do not require urban theory to justify these goals, and probably very few read any of it.

How does situating cities in global structural hierarchies affect prospects for planned progress or citizens initiatives towards more livable cities? In order to answer this, we need to disabuse ourselves of the notion that conceptualizing how urban places fit into global structures, even highly constraining ones, necessarily limits individual and community agency. In fact, understanding structural constraint is a necessary pre-requisite for constructive resistance against repressive power.[48] Peter Taylor argues that the emerging world city network will be one of increasing importance in global politics and economics—and he sees it as a potential point of freedom, cooperation, and even "transnational democracy," with "knowledge capitalists" who are also global "network capitalists" providing a possible vanguard.[49] For now, I would argue for a more limited and guarded view, particularly in regard to cities in poorer countries. Understanding a city's structural location in the global city hierarchy (and along other overlapping grids) should help progressive policy makers and popular movements identify global allies, make wider alliances, and understand the limits of the possible. This should enable them to take action that will help their communities get a more equitable share of global wealth and move these places toward more sustainable growth. Hardly a utopia, but better than the status quo in many peripheral cities today. ⓌⒶ

52

NOTES

1. United Nations Department of Economic and Social Affairs, *World Urbanization Prospects: The 2003 Revision* (New York: United Nations, 2004), See especially Table 1.

2. Ibid., Figure 2.

3. Bert Hoselitz, "Generative and Parasitic Cities," *Economic Development and Cultural Change* 3 (1954): 278-294; Leonard Reissman, *Urban Process: Cities in Industrial Societies* (Glencoe, IL: Free Press, 1964).

4. Bryan Roberts, *Cities of Peasants: The Political Economy of Urbanization in the Third World* (Beverly Hills, CA: Sage, 1978); Warwich Armstrong and Terry McGee, *Theatres of Accumulation: Studies in Asian and Latin American Urbanization* (London: Methuen, 1985); David A. Smith, *Third World Cities in Global Perspective: The Political Economy of Uneven Urbanization* (Boulder, CO: Westview Press, 1996).

5. Alain Lipietz, *Mirages and Miracles: The Crisis of Global Fordism* (London: Verso, 1987).

6. Allan Scott, "Flexible Production Systems and Regional Development," *International Journal of Urban and Regional Research* 12 (1988): 171-186.

7. Robert Ross and Kent Trachte, *Global Capitalism: The New Leviathan* (Albany, NY: State University of New York Press, 1990).

8. John Friedmann and Goetz Wolff, "World City Formation: An Agenda for Research and Action," *International Journal of Urban and Regional Research* 6 (1982): 309-344; John Friedmann, "The World City Hypothesis," *Development and Change* 4 (1986):12-50.

9. Anthony King, *Global Cities: Post-Imperialism and the Internationalization of London* (London:

Routledge, 1990); Saskia Sassen, *The Global City: New York, London* (Princeton, NJ: Princeton University Press, 1991); Janet Abu-Lughod, *New York, Chicago, Los Angeles: America's Global Cities* (Minneapolis: University of Minnesota Press, 1999).

10. Annette Fuentes and Barbara Ehrenreich, *Women in the Global Factory* (Boston, MA: South End Press, 1982).

11. Robert Wade, "Globalization and Its Limits: Reports of the Death of the National Economy are Greatly Exaggerated," in Suzanne Berger and Robert Dore, eds., *National Diversity and Global Capitalism* (Ithaca, NY: Cornell University Press), 118-134; Saskia Sassen, *Losing Control? Sovereignty in an Age of Globalization* (New York: Columbia University Press, 1996).

12. George Soros, "The Capitalist Threat," *The Atlantic Monthly* 249 (1997): 45.

13. Sassen (1991), *op. cit.*

14. Paul Knox and Peter Taylor, eds., *World Cities in a World-System* (New York: Cambridge University Press, 1995); David A. Smith and Michael Timberlake, "Conceptualizing and Mapping the Structure of the World System's City System," *Urban Studies* 32 (1995): 287-302.

15. Sassen (1991), *op. cit.*

16. See for example Taylor and Knox (1995); or James W. White, "Old Wine, Cracked Bottle? Tokyo, Paris, and the Global City Hypothesis," *Urban Affairs Review* 33 (1998):451-477; Saskia Sassen, "Swirling that Old Wine around in the Wrong Bottle: a Comment on White," *Urban Affairs Review* 33 (1998): 478-481; Michael Peter Smith, "The Global City—Whose Social Construct is it Anyway? A Comment on White," *Urban Affairs Review* 33 (1998): 482-488; James W. White, "Half-Empty Bottle or no Bottle at all? A Rejoinder to Sassen and Smith," *Urban Affairs Review* 33 (1998): 489-491.

17. Richard Child Hill and June Kim, "Global Cities and Developmental States: New York, Tokyo, and Seoul." *Urban Studies* 37 (2000): 2167-2195; Alan Gilbert, "World Cities and the Urban Future: The View From Latin America," in Fo Chen Lo and Yue-man Yeung, eds., *Globalization and the World of Large Cities* (Tokyo: UN University Press, 1998).

18. King (1990) *op. cit.*; Sassen (1991) *op. cit.*; Abu-Lughod *op. cit.*

19. For a critique, see Jennifer Robinson, "Global and World Cities: A View from Off the Map," *International Journal of Urban and Regional Research* 26 (2002): 531-554. She claims that the global and world cities literature is highly problematic because it implies that large parts of the world—in places such as Africa and Latin America—are "the 'voids' of world and global cities approaches" (537), and these places are consigned to "structural irrelevance." While this impression is conveyed in much of this literature, it is worth noting that Sassen clearly does not believe that all cities in "the South" are irrelevant. See Saskia Sassen ed., *Global Networks, Linked Cities* (New York: Routledge, 2002).

20. Josef Gugler, ed., *The Urban Transformation of the Developing World* (New York: Oxford University Press, 1996); Josef Gugler, ed., *Cities in the Developing World: Issues, Theory, and Policy* (New York: Oxford University Press, 1997).

21. Mattei Dogan and John Kasarda, *The Metropolis Era, Volume 1: A World of Giant Cities* and *The Metropolis Era, Volume 2: Mega-Cities* (Newbury Park, CA: Sage, 1988).

22. Ibid., "Introduction," Volume 1, 18.

23. For a sense of the pervasiveness of this idea, conduct an electronic search on either the Worldwide Web or a database of journal article abstracts: literally dozens of items show up, including some research and policy conferences, academic centers, and even videos on the subject.

24. United Nations Department of Economic and Social Affairs, *World Urbanization Prospects: The 2003 Revision* (New York: United Nations, 2004), see especially Table 6.

25. Friedmann and Wolff (1982), *op. cit.*; Friedmann (1986), *op. cit.*

26. Amos H. Hawley, *Human Ecology: A Theory of Community Structure* (New York: The Ronald Press, 1950), see particularly, Chapter 12 for discussions of "dominance" and "dependence"; for a sweeping empirical study of the dominance hierarchy in the United States urban system, see Otis D. Duncan, William R. Scott, Stanley Lieberson, Beverly Duncan and Hal Winsborough, *Metropolis and Region* (Baltimore, MD: Johns Hopkins University Press, 1983).

27. Manual Castells, *The Rise of Network Society* (Cambridge, Mass.: Blackwell Publishers, 1996); Saskia Sassen, "Introduction: Locating Cities on Global Circuits," in Saskia Sassen (2002), *op. cit.*, 1-36; Peter

53

Taylor, "Recasting World-Systems Analysis: City Networks for Nation-States," in Wilma Dunaway, ed., *New Theoretical Directions for the 21st Century World-System* (Westport, CT.: Greenwood, 2003), 130-140.

28. David Meyer, "World System of Cities: Relations between International Financial Metropolises and South American Cities," *Social Forces* 64 (1986): 553-581.

29. Sassen (1991), *op. cit.*

30. Taylor says this particularly well: "'unrelational' research on cities...continues to dominate urban studies even within the world city literature." Peter Taylor, *World City Network: A Global Urban Analysis* (London: Routledge, 2004).

31. For a formal network analysis of international commodity trade, yielding an image of the modern world-system, see David A. Smith and Douglas R. White, "Structure and Dynamics of the Global Economy: Network Analysis of International Trade 1965-1980," *Social Forces* 70 no. 4 (1992) :857-893.

32. This is quite true to the main thrust of Sassen's arguments about what really gives world cities their power to "command and control." It is also analogous to the strategy developed by Meyer (1986), *op. cit.*, for a smaller regional group of cities.

33. Readers can get a sense of almost a decade of research, leading to over 150 electronically accessible research bulletins, by visiting the "Global and World Cities" (GaWC) website at <http://www.lboro.ac.uk/gawc>. Taylor and his colleagues have published many scholarly articles in the past few years, but the most thorough source now available is Taylor (2004), *op. cit.*

34. Arthur Alderson and Jason Beckfield, "Power and Position in the World City System," *American Journal of Sociology* 109 (2004): 811-851.

35. David A. Smith and Michael Timberlake, "Conceptualizing and Mapping the Structure of the World System's City System," *Urban Studies* 32 (1995): 287-302; David A. Smith and Michael Timberlake, "World City Networks and Hierarchies, 1977-1997: An Empirical Analysis of Global Air Travel Links," *American Behavioral Scientist* 44 (2001): 1656-1678.

36. The use of data on elite financial services firms and Fortune 500 firms by Taylor et al, and Alderson and Beckfield is faithful to Sassen's conceptualization of "the global city." But critics like Robinson (2002), *op.cit.*, argue that by focusing exclusively on particular measures of global corporate power much is missed: "...a view of cities emerges where millions of people and hundreds of cities are dropped off the map of much research in urban studies, to service one particular and very restricted view of significance or (ir)relevance to certain sections of the world economy" (535). On the other hand, city-to-city airline connection data are touted as the key indicators of emerging global transportation systems, critical to maintain worldwide "command and control"—"air networks and their associated infrastructure at the most visible manifestations of world city interactions" (David Keeling, "Transport and the World City Paradigm," in Paul Knox and Peter Taylor, eds., *World Cities in a World-System* (New York: Cambridge University Press), 115-131). But air traffic information has obvious drawbacks, too: technical limitations on compiling inter-national and intra-national flows or final destinations versus flows on major routes, the distortion created by the use of some airports as "hubs," and larger issue of quantifying passenger flows that include business travelers, tourists, and migrants.

37. Anthony King, *Urbanism, Colonialism, and the World-Economy* (London: Routledge, 1990). Quotation from page 82, also cited in Robinson (2002), *op. cit.,* 534.

38. David A. Smith, "The New Urban Sociology Meets the Old: Rereading Some Classical Human Ecology," *Urban Affairs Review* 30 (1995): 432-457.

39. Hawley (1950), *op. cit.*; For a more contemporary discussion: Amos H. Hawley, "Human Ecological and Marxian Theories," *American Journal of Sociology* 89 (1984): 904-917.

40. Michael Timberlake, ed., *Urbanization in the World-Economy* (New York: Academic Press, 1985).

41. Manuel Castells, *The Urban Question: A Marxist Approach* (Cambridge, MA: MIT Press, 1977).

42. For a summary and bibliography, see David A. Smith, "Method and Theory in Comparative Urban Studies." *International Journal of Comparative Sociology* 32, no. 1-2 (1991): 39-58.

43. For example, see Peter Taylor, Gilda Catalano and David Walker, "Measurement of the World City Network," *Urban Studies* 39, no. 13 (2002): 2367-2376.

44. Robinson (2002), *op. cit.*

45. Reference to Robinson (2002), *op. cit.*; also see Josef Gugler, "World Cities in Poor Countries: Conclusions from Case Studies of the Principal Regional and Global Players," *International Journal of Urban and Regional Research* 27, no. 3 (2003): 707-712.

46. A recurring theme in Robinson (2002), *op. cit.*, and one of her main objections to this entire theoretical approach.

47. John Logan and Harvey Molotch, *Urban Fortunes: The Political Economy of Place* (Berkeley: University of California Press, 1987).

48. For a general discussion, see James Mittelman, *The Globalization Syndrome* (Princeton, NJ: Princeton University Press, 2000); Peter Evans, ed., *Livable Cities: Urban Struggles for Livelihood and Sustainability* (Berkeley: University of California Press, 2002), provides an excellent discussion of this process in "third world cities."

49. Taylor (2004), *op. cit.*, Chapter 9.

55