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World-City Network: A New Metageography?

Jonathan V. Beaverstock,* Richard G. Smith,** and Peter J. Taylor*

*Department of Geography, Loughborough University
**Department of Geography, Leicester University

You cannot have a *geography* of anything that is unconnected. No connections, no geography (Gould 1991:4).

Our inability to measure and compare the flows of information between global command centres is a major problem for research on the global urban hierarchy (Short and Kim 1999:38).

During the Apollo space flights, it was reported that one of the astronauts, looking back to Earth, expressed amazement that he could see no boundaries. This new view of our world as the "blue planet," famously captured in NASA photo 22727 of the whole and unshadowed globe (Cosgrove 1991: 127), contradicted the taken-for-granted, state-centric Ptolemaic model or image of world-space that most modern people carry around in their heads: a world of grids, graticule, and territorial boundaries (see Cosgrove 1994). As a further jolt to the arrogance of modernity, it was soon accepted as a truism that the only "man-made" artifact visible from space was the ancient Great Wall of China. Interestingly, however, the Great Wall is not the only visible feature: at night, modern settlements are clearly visible as pin-pricks of electric light on a black canvas, as seen in the Hansen Planetarium photo, "Europe at Night" (Figure 1). The globality of modern society is clear for all to see in the photo prints, communicated back to Earth, of lights delimiting a global pattern of cities, consisting of a broad swath girdling the mid-latitudes of the northern hemisphere plus many oases of light elsewhere.

The fact that these "outside views" of Earth identified a world-space of settlements rather than the more familiar world-space of countries has contributed to the growth of contemporary, "One World" rhetoric[1] (also "Spaceship Earth" or "Whole Earth"), which has culminated in "borderless world" theories of globalization. Of course, geographies do not depend solely upon visibility or metaphors. The fact that state boundaries are missing from space-flight photographs tells us nothing, therefore, about the current power of states to affect world geography. The photographs can, however, influence "metageography," or the "spatial structures through which people order their knowledge of the world" (Lewis and Wigen 1997: ix). In the modern world, this has been notably Eurocentric and state-based in character.[2] It is this mosaic spatial structure that the night-time photographs challenge since, first and foremost, people live in settlements. In this paper, we consider the largest pinpricks of light, "the world cities" whose transnational functions materially challenge states and their territories. These cities exist in a world of flows, linkages, connections, and relations. World cities represent an alternative metageography, one of networks rather than the mosaic of states.

Historically, cities have always existed in environments of linkages, both material flows and information transfers. They have acted as centers from where their hinterlands are serviced and connected to wider realms. This is reflected in how economic geographers have treated economic sectors: primary and secondary activities are typically mapped as formal agricultural or industrial regions, tertiary activities as functional regions, epitomized by central-place theory. Why is our concern for contemporary cities in a world of flows any different from this previous tertiary activity and its study? First, the twentieth century has witnessed a remarkable sectoral turnabout in advanced economies: originally defined by their manufacturing industry, economic growth has become increasingly dependent on service industries. Second, this trend has been massively augmented by more recent developments in information technology that has enabled service and control to operate not only more rapidly and effectively, but crucially on a global scale. Contemporary world cities are an outcome of these economic changes. The large electric pinpricks of light on space photos are actually connected by massive electronic flows of information, a new functional space that will be crucial to geographical understanding in the new millennium.

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Figure 1. "Europe at Night," in which modern settlements appear as pin pricks of light. Copyright W. T. Sullivan III and Hansen Planetarium/SPLI Photo Researchers, Inc., used by permission.

This paper, which divides into six parts, reports preliminary research on the empirical groundwork required for describing the new metageography of relations between world cities. Such a modest goal is made necessary because of a critical empirical deficit within the world-city literature on intercity relations. In the first part, we show this to be a generic problem across all the different research schools within the literature. By concentrating on the attributes of world cities and neglecting their relations, we learn a lot about the nodes in the network, but relatively little about the network itself. In a brief second part, we introduce Castell's concept of network society, in which the world-city network does feature, and although this provides a conceptual framework for our research, the empirical problematic remains. Our particular solution to this data problem is to focus on the global office-location strategies of major corporate-service firms; in the third part, we outline this data-collection exercise. Analysis of this data is presented in two ways: the first defines a network; the second deals with relations of a single city. In part four, we provide a glimpse of the world-city network by focusing on only the ten leading world cities. In part five, we present a case study of the global reach of London in a more detailed analysis, using fifty-four other world cities. We claim both of these analyses to be unique, first empirical studies of their kind. In a brief conclusion, we consider the future implications of this new metageography: are we witnessing a dystopia in the making?

Attributes without Relations: Research Clusters in World-City Studies

Studies of world cities are generally full of information that facilitates evaluations of individual cities and comparative analyses of several cities. Yet the data upon which these analyses are based has been overwhelmingly derived from measures of city attributes (Taylor 1999). Such information is useful for estimating the general importance of cities and for studying intracity processes, but it tells us nothing directly about relations between cities. Hence cities can be ranked by attributes, but a hierarchical ordering aimed at uncovering flows or networks requires a different type of data based upon measures of relations between cities (Taylor 1997). It is the dearth of relational data that is the "dirty little secret" (Short et al. 1996) of this research area.[3] In other words, we know about the nodes but not the links in this new metageography. Of course, a proper understanding requires an integrated knowledge of both nodes and links. Hence, our brief reviews of the main clusters of world-city research has two purposes: first, to illustrate the pervasive nature of the Achilles heel, and second, to find world-city formation processes that can direct our search for information on world-city network-formation processes.

Early Studies: From Cosmopolitanism to Corporate Economy

Peter Hall (1966) initiated the modern study of world cities with a very comprehensive study of the attributes—politics, trade, communication facilities, finance, culture, technology, and higher education—that placed London, Paris, Randstad-Holland, Rhine-Ruhr, Moscow, New York, and Tokyo at the top of the world urban hierarchy. Stephen Hymer initiated the "economic turn" in world-city studies that has continued to dominate to the present. In an emerging global economy, he argued, corporate control mechanisms were crucial, and hence multinational corporation headquarters tend to be concentrated in the "world's major cities—New York, London, Paris, Bonn and Tokyo . . . along with Moscow and Peking" (1972: 50). Using the distribution of headquarters to rank cities has since become commonplace (e.g., Feagin and Smith 1987; Meijer 1993; Short et al. 1996), but although such attribute data can define the relative importance of cities, it cannot specify a hierarchy within a network.

Command Centers and Basing Points: The New International Division of Labor and World-City Hypothesis

Most studies of world urban hierarchies have drawn inspiration from John Friedmann's (Friedmann and Wolff 1982; Friedmann 1986) seminal world-city hypothesis. Following Cohen's (1981) new hierarchy of predominant (New York, Tokyo, London) and secondary-level (Osaka, Rhine-Ruhr, Chicago, Paris, Frankfurt, and Zurich) world cities, Friedmann drew his ideas from the organizational implications for capital in Frobel et al.'s (1980) New International Division of Labor thesis. The restructuring of industrial production in the 1970s posed new problems for capital that world cities helped solve by becoming both command centers and basing points for capital in its perennial movement around the globe. Friedmann's hierarchy is frequently cited for its pedagogic and heuristic value, but it is based upon a limited attributive survey whose key variables and heights were difficult to measure and calibrate. These included the concentration of finance, multinational corporation headquarters, business services, manufacturing activity, transportation, and population (Friedmann 1986: 72). Many have now developed elaborate critiques of Friedmann's original hierarchy (e.g., Beaverstock et al. 2000; Korff, 1987; Taylor 1997), and Friedmann himself (1995) has noted some of its limitations. Yet subsequent research has allocated cities to hierarchies based upon their command-and-control criteria, measuring attributes of world cities and then ranking them in order of magnitude (e.g., Brotchie et al. 1995; Daniels 1993; Fujita 1991; Lo and Yeung 1998; London Planning Advisory Committee 1991; Lyons and Salmon 1995; Meijer 1993; Shacker 1994).

International Financial Centers

The rise of global financial markets has been one of the most noted elements of economic globalization, and their integration into international financial centers has stimulated a particular strand of world-city research. The pioneering work of Reed (1981) produced the first major quantitative analysis of world cities. Using a multivariate analysis of more than fifty financial, cultural, economic, geographical, and political attributes across seventy-six cities between 1900–1980, Reed produced an evolving hierarchy of international financial centers. Like Friedmann's (1986), this hierarchy has been widely discussed for its pedagogic value (e.g., Drennan 1996; "A Survey of International Financial Centres" 1998; Thrift 1987), but its principal weakness is that it neglects relations *between* financial centers. No matter how sophisticated an analysis of attribute data, such rankings can only produce a hierarchy, and world-city financial relations can only be inferred. Furthermore, consideration of the functions of financial intermediaries, with no inter-financial center data analysis, as advocated by Meyer, does not constitute a "world city hierarchy of financial centres" (1998: 428).

The Producer-Service Complex and the "Triad" of Global Cities

If international financial centers represent an "unpacking" of the world-city concept, Sassen's (1991) concept of global city is the beginning of a repacking. In addition to financial services, she identifies the production of other advanced producer services (e.g., accountancy, advertising, insurance, commercial law, etc.) in the creation of global city complexes, as epitomized by London, New York, and Tokyo, with concentrations of theoretical and practical knowledges. The servicing of global capital in these localized complexes creates the concentration of functions we know as world cities. Yet while Sassen interprets this triad of cities as the apex of a global urban hierarchy, her analyses are likewise wholly dependent upon attribute data. The result of her many studies (Sassen 1994a, 1994b, 1995) is a rich knowledge of the triad in comparative terms but with no direct evidence of relations between the three cities or between them and other cities.[4]

The Los Angeles School

A part of the postmodern and cultural "turns" in geography and urban planning has been the rise of the so-called "Los Angeles School," which highlights the conceptual shift from the largely positivist Chicago School of the early twentieth century (examples include Davis 1990; Soja 1989, 1996; Scott 1988; Jameson 1992; Scott and Soja 1986). By focusing on a single city, Los Angeles, as the archetypal, paradigmatic, or "celebrity city" of contemporary world-city processes (the place where it "all comes together"; Soja 1989: 8), however, relations between cities have largely been neglected. One strand within this school, Michael Storper's "social organization of economic reflexivity" (1997: 244), is focused upon the proximity of places serving as vital innovation centers for capital. The city is treated by Storper (1997: 222) as a "privileged site" for reflexivity, because of its embedded knowledge and learning structures. Going beyond producer services to specialized manufacturing, with Hollywood as the classic "privileged site," this work nevertheless fails to treat the wider spatial role of cities, such that their connections in an economy of flows remains invisible. While reference is made to the "society of cities" (Storper 1997: 222), intercity relations are precisely what is absent from this work. Economic reflexivity need not be strictly local and territorial; we agree with Amin and Thrift (1992), that there is critical reflexivity embedded in and reproduced through global corporate networks: or, as we would like to put it, through the relational network of world cities.

In summary, the world-cities literature is seriously unbalanced: it has a surfeit of interesting theoretical concepts for treating the nodes of the world-city network, but these exist alongside a deficit in empirical concern for measuring relations between the nodes.

World Cities in a Network Society

One author, in particular, has attempted to advance theoretical knowledge of the world-city network. Castells (1996) conceptualizes the contemporary informational economy as operating through a "space of flows" that constitute a network society. This operates at several levels, one of which is the world-city network. Thus, instead of the static world-city concepts considered above—centers, points, complexes, sites—Castells conceptualizes world cities as processes "by which centers of production and consumption of advanced services, and their ancillary local societies, are connected in a global network" (1996: 380). Hence, cities accumulate and retain wealth, control, and power because of what flows through them, rather than what they statically contain, as is typically measured with attribute data.

It was not part of Castell's (1996) brief to engage in new data generation, and therefore, despite his theoretical contribution, his work reflects the prevailing use of attribute data (Taylor 1999). His chief use of data to specify space of flows is a broad resolution (one origin, nine destinations) set of data from Federal Express originally analyzed by Michelson and Wheeler (1994: 382–83). Castells does not offer an empirical advance on the world-city network, but with the other theoretical studies of nodes, he provides a framework for our empirical work on world-city network formation in a space of relations. World cities are produced by relations of corporate networking activities and connectivity between cities based upon knowledge complexes and economic reflexivity. These fruitful concepts notwithstanding, the key to unlocking the "spaces of relations" of world cities is new data collection (Smith and Timberlake 1995a, 1995b).

Global Office Location Strategies

The only published data available for studying relations between cities at a global scale are international airline-passenger statistics. Not surprisingly, therefore, empirical studies that present *networks* of world cities have focused upon this source (Keeling 1995; Kunzmann 1998; Rimmer 1998). There are, however, serious limitations to these statistics as descriptions of relations between world cities (Taylor 1999): first, the information includes much more than trips associated with world-city processes (e.g., tourism), and second, important intercity trips within countries are not recorded in international data (e.g., New York–Toronto does feature in the data, New York–Los Angeles does not). While the latter can be overcome by augmenting the data with domestic flight statistics, the particularities of hub-and-spoke systems operated by airlines creates another important caveat to using this data to describe the world-city network.

Studying the global location strategies of advanced producer-service firms is an alternative approach for describing world-city networks, one which overcomes these problems. Firms that provide business services on a global scale have to decide on the distribution of their practitioners and professionals across world cities. Setting up an office is an expensive undertaking, but a necessary investment if the firm believes that a particular city is a place where it must locate in order to fulfil its corporate goals. Hence the office geographies of advanced producer firms provide a strategic insight into world-city processes by interpreting intrafirm office networks as intercity relations. In this argument, world-city network formation consists of the aggregate of the global location strategies of major, advanced producer-service firms.

Information on the office networks of firms can be obtained by investigating a variety of sources, such as company web sites, internal directories, handbooks for customers, and trade publications. We have collected data on the distributions of offices for 74 companies (covering accountancy, advertising, banking/finance, and commercial law) in 263 cities. An initial analysis of this data identified the 143 major office centers in these cities, and 55 of these were designated world cities on the basis of the number, size, and importance of their offices (for details of this classification exercise, see Beaverstock et al. 1999a). No other such roster of world cities exists; it is used here as the basic framework for studying the world-city network.

An Intercity Global Network

The roster of 55 world cities is divided into three levels of service provision comprising 10 Alpha cities, 10 Beta cities, and 35 Gamma cities.[5] Only the Alpha cities—Chicago, Frankfurt, Hong Kong, London, Los Angeles, Milan, New York, Paris, Singapore, and Tokyo—are used in this section to illustrate how office geographies can define intercity relations. Note the geographical spread of these top 10 world cities; they are distributed relatively evenly across three regions we have previously identified as the major "globalization arenas": the U.S., western Europe, and Pacific Asia (Beaverstock et al. 1999b). World-city network patterns are constructed for these Alpha world cities, using simple presence/absence data for the largest 46 firms in the data (all of these firms have offices in 15 or more different cities).

Shared presences are shown in Table 1. Each cell in this intercity matrix indicates the number of firms with offices in both cities. Thus, London and New York "share" 45 of the 46 firms; only one firm in the data does not have offices in both of these cities. Obviously these two cities are the places to be for a corporate-service firm with serious global pretensions. This finding is not, of course, at all surprising; interest comes when lower levels of intercity relations

Table 1. Relations between Alpha World Cities: Shared Firm Presences

	Number of Firms with Offices in Both Cities									
	CH	FF	HK	LN	LA	ML	NY	PA	SG	TK
Chicago										
Frankfurt	21									
Hong Kong	21	30								
London	23	32	38							
Los Angeles	21	23	29	33						
Milan	19	28	29	32	22					
New York	23	32	38	45	32	32				
Paris	21	30	32	35	27	28	34			
Singapore	20	30	34	35	26	29	35	32		
Tokyo	23	30	34	37	30	29	37	32	32	

are explored. In Figure 2a, the highest 20 shared presences are depicted at two levels of relation. The higher level picks out Sassen's (1991) trio of global cities—London, New York, and Tokyo—as a triangular relationship (but note that, in addition, Hong Kong has such a relationship with London and New York). Bringing in the lower level of relations, London and New York have shared presences with eight other cities in all, but note again the high Pacific Asia profile in this data: Singapore joins with Tokyo and Hong Kong in showing relations with five other cities, the same level as Paris. This contrasts with the U.S. world cities below New York; Los Angeles is in the next-to-bottom class of shared presences with Frankfurt and Milan, and Chicago stands alone, with no intercity relations at the minimum level for inclusion in the diagram. This pattern can be interpreted in terms of the different degrees of political fragmentation in the three major globalization arenas. In the most fragmented, Pacific Asia, there is no dominant world city, so that presences are needed in at least three cities to cover the region: Hong Kong for China, Singapore for southeast Asia, and Tokyo for Japan (Taylor 2000). In contrast, the U.S. consists of a single state such that one city can suffice for a presence in that market. The result is that New York throws a shadow effect over other U.S. cities. In between, western Europe is becoming more unified politically, but numerous national markets remain so that London does not dominate its regional hinterland to the same degree as New York.

Shared presences define a symmetric matrix that shows sizes, but not the direction, of intercity relations. By contrast, Table 2 is an asymmetric matrix showing probabilities of connections. Each cell contains the probability that a firm in city A will have an office in city B. Thus, Table 2 shows that if you do business with a Chicago-based firm, then there is a 0.91 probability that that firm will also have an office in Frankfurt. On the other hand, go to a Frankfurt-based firm, and the probability of it having an office in Chicago is only 0.66. Such asymmetry is represented by vectors in Figures 2b and 2c. Primary vectors are defined by probabilities above 0.95. Note that all cities connect to London and New York at this level (Figure 2b). As in Figure 2a, only Tokyo and Hong Kong reach this highest category of connection, but each with only one link. Again, it is also interesting to look at the lower level relations, and these are shown in Figure 2c. This diagram reinforces the interpretation concerning the three globalization arenas presented above: Chicago and Los Angeles have no inward vectors from the other arenas in what is largely a Eurasian pattern of connections. Vectors to the Pacific Asian cities dominate, but Frankfurt and Paris also have a reasonable number of inward vectors.

This is the first time intercity relations on a global scale have been studied in this way. As expected of such initial research, several opportunities for further investigations are suggested, not least using more cities and more sophisticated network analysis to tease out further features of the contemporary world-city network. But the most urgent task is to go beyond this cross-sectional analysis and study changes over time in order to delineate the evolution of world-city network formation. Only in this way will we be able to make informed assessments of how the network will develop in the new millennium and how this will affect different cities. For instance, is the New York shadow effect growing or declining? We simply do not know.

Case Study: London's Global Reach

There is no published study assessing the global capacity of a world city in terms of its relations with other world cities. The producer-service-office geography dataset is particularly suited for such an exercise; here we illustrate this with a brief case study of London (Figure 3).

The data we employ for London differs from that used in the last section in three ways. First, it is obvious that since we will consider only London-based firms, one of the firms used previously is dropped. In addition, we add data for smaller London-based firms, creating a total of 69. Second, we consider all 55 world cities in our roster. Third, for many firms, there is richer information than simply whether they are present or absent in a city. Further information provides interval-level measurements, on the numbers of practitioners or professionals employed by a firm across all its offices, as well as ordinal-level measurements in which the importance of offices was allocated to ranked classes on the basis of given functions. In order to combine this data into a single, comparable set of measures, all three levels—interval, ordinal, and nominal (presence/absence)—were combined as a single ordinal scale. For every

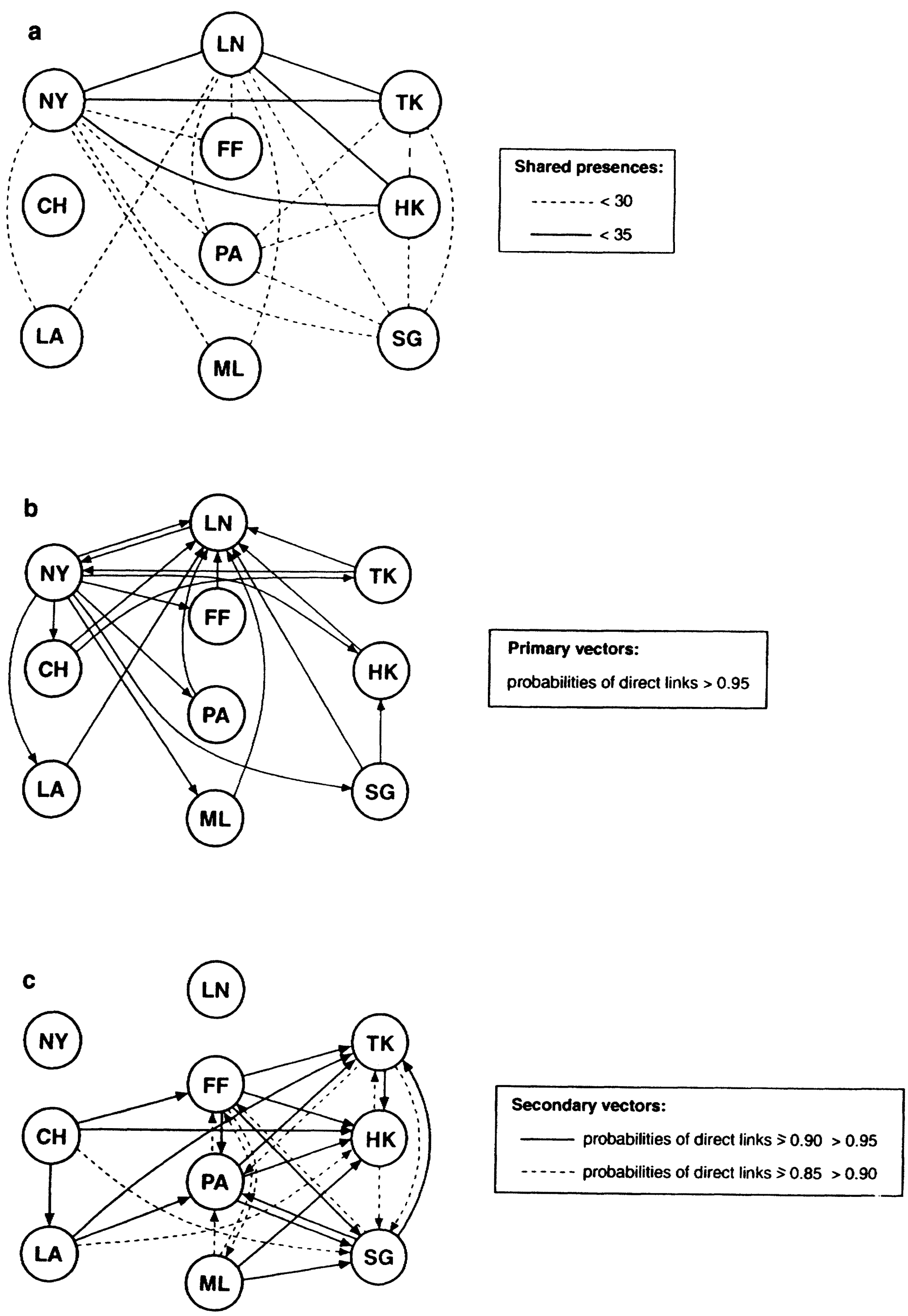

Figure 2. (a) Shared presences among Alpha world cities; (b) primary vectors (probabilities of links) among Alpha world cities; (c) secondary vectors (probabilities of links) among Alpha world cities.

Table 2. Matrix of Office-Presence Linkage Indices for Alpha World Cities

	Linkage to									
Linkage from	CH	FR	HK	LN	LA	ML	NY	PA	SG	TK
Chicago		89	89	100	91	79	100	89	83	100
Frankfurt	67		93	100	72	87	100	95	94	95
Hong Kong	60	82		100	80	80	100	85	92	90
London	59	77	87		78	78	98	83	83	86
Los Angeles	67	73	89	100		70	97	84	81	89
Milan	59	88	93	100	67		100	88	91	93
New York	59	77	87	98	77	77		79	83	85
Paris	64	85	90	100	80	81	97		90	90
Singapore	60	87	98	100	78	83	100	92		95
Tokyo	64	84	93	100	83	81	100	87	88	

world city, each firm is scored as one of the following: (0) indicating absence; (1) indicating presence, or where additional information is available, indicating only minor presence; (2), when additional information indicates a medium presence in a city; and (3), when additional information indicates a major presence. In delineating these data when additional information is available, we were careful to be sensitive to the range of data; for large accountancy firms, for example, "minor presence" was defined as less than 20 practitioners in a city, while "major presences" required more than 50 professionals; yet, for law firms, the equivalent figures were 10 and 20. Through this approach, we can move beyond simple geographies of presence to geographies of the *level* of producer services available in a city.

For each of the producer-service sectors represented in our data, levels of service are summed for London-based firms in each of the other 54 world cities. This provides an estimate

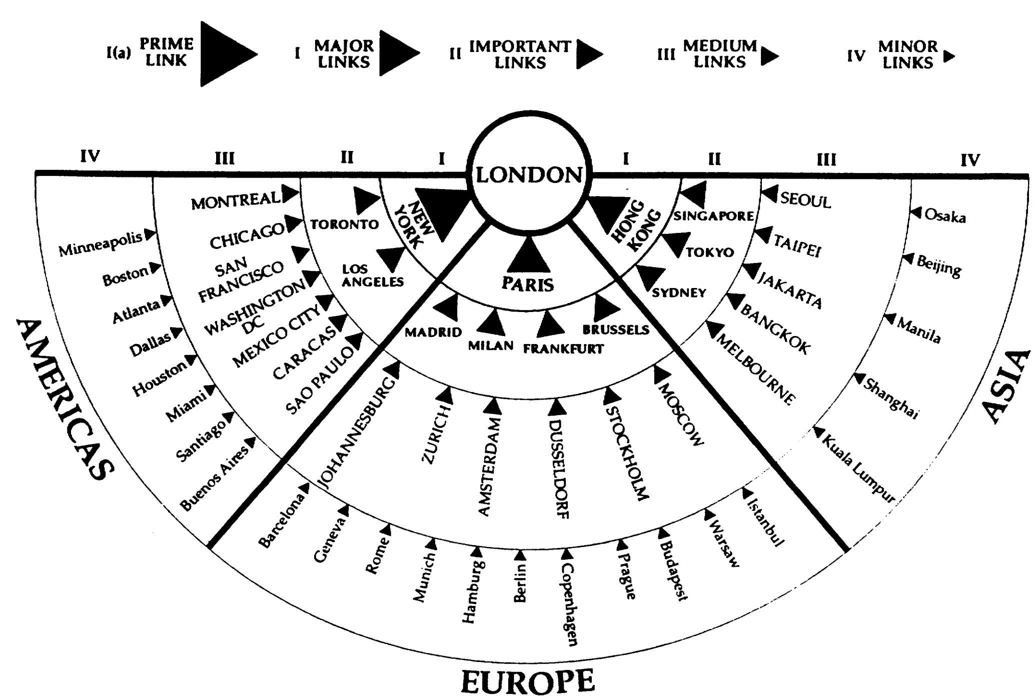

Figure 3. World city links to London.

of the level of external service that can be expected when doing business in another world city from London. In Table 3, the top 10 world cities are ranked in terms of service available for each of the producer services represented in our data. As would be expected, the Alpha cities, identified in the last section, figure prominently in these rankings, with New York first or first equal in all four sectors. Yet, other world cities now make an appearance: the notable examples are the key political cities of Washington, DC and Brussels featuring prominently in law, Dusseldorf easily out-ranking Germany's Alpha world city Frankfurt in accountancy, and Britain's imperial links being represented by Sydney and Toronto in several lists. Average levels of linkage have been computed from standardized sector scores (city totals as percentage of maximum possible; i.e., 3 [maximum score] × number of firms in a given sector), showing all the Alpha cities in London's top 10 except Chicago. Given also Los Angeles's bottom ranking in the list, this can be interpreted as the New York shadow effect operating even from London.

Average levels of linkage with London, when computed for all other world cities, provide an illustration of London's global reach within the world-city network. These average percentages range from a top score of 87 for New York, followed by Paris (68) and Hong Kong (64), to the lowest score for Minneapolis of only 15, with Osaka (21) and Munich (22) just above the bottom. Using these averages, world cities can be divided into five groups in terms of the intensity of their relations with London. Out on its own is New York, the "prime link," followed by Paris and Hong Kong as the other two "major links." Below these three and all with scores over 50, come 9 "important links." The remainder of the cities are divided between 18 "medium links" (36–50) and the remaining 24 "minor links." These links are arrayed in Figure 3, showing a relatively even distribution across the three globalization arenas and their adjacent regions, the New York shadow effect notwithstanding.

The big question for London, as we enter the next millennium, is whether it can retain its position as Europe's leading world city. With the European Central Bank located in Frankfurt, the scene is set for some intense intercity competition. Currently, as we showed in the previous section, London is clearly preeminent in relation to all its European rivals but, as before, in order to see which way this competition is moving, we need to supplement our cross-sectional analysis with evolutionary data and analysis, and repeat the exercise across several cities.

Conclusion: Metageographic Dystopia?

Riccardo Petrella, sometimes referred to as the "official futurist of the European Union" (1995: 21), has warned of the rise of a "wealthy archipelago of city regions . . . surrounded by an impoverished *lumpenplanet*" (p. 21). He envisages a scenario in which the 30 most powerful city regions (the CR-30) will replace the G-7 (the seven most powerful states), presiding over a new global governance by 2025. Such a sce-

Table 3. Top Ten Office Linkages to London by Advanced Producer Services

Accountancy	Advertising	Finance	Law Services	Average
1. Dusseldorf, New York, Paris, Tokyo, Toronto	1. New York 2. Brussels, Madrid, Sydney, Toronto	1. New York 2. Singapore 3. Hong Kong, Tokyo	1. New York 2. Washington 3. Brussels, Hong Kong	1. New York 2. Paris 4. Hong Kong
6. Chicago, Milan, Sydney, Washington	6. Milan, Paris	5. Frankfurt 6. Paris, Zurich	5. Paris 6. Los Angeles	5. Tokyo 5. Brussels
10. Atlanta, Brussels, Frankfurt, San Francisco	8. Los Angeles, Singapore, Stockholm	8. Sydney 9. Madrid 10. Milan, Taipei	7. Tokyo 8. Singapore 9. Moscow 10. Frankfurt	6. Singapore 7. Sydney 8. Milan 9. Frankfurt, Los Angeles, Toronto

nario is given credence by the fact that contemporary world cities are implicated in the current polarization of wealth and wages accompanying economic globalization. World-city practitioners and professionals operating in a global labor market have demanded and received "global wages" (largely in the form of bonuses) to create a new income category of the "waged rich"; with reference to London, they have been called the new "Super Class" (Adonis and Pollard 1997).

Petrella sets out his global apartheid dystopia as a warning about current trends so as to alert us to the dangers ahead. But cities do not have to play the bête noire role of the future. It is within cosmopolitan cities that cultural tensions can be best managed and creatively developed. Certainly modern states, in their ambition to be nation-states, have an appalling record in dealing with matters of cultural difference. But the key point is that this is not a simple matter of cities versus states (Taylor 2000). World cities are not eliminating the power of states, they are part of a global restructuring which is "rescaling" power relations, in which states will change and adapt as they have done many times in previous restucturings (Brenner 1998). The "renegotiations" going on between London's world role and the nation's economy, between New York's world role and the U.S. economy, and with all other world cities and their encompassing territorial "home" economies, are part of a broader change affecting the balance between networks and territories in the global space-economy. In this paper, we have illustrated how empirical analysis of city economic networks might be undertaken to complement traditional economic geography's concern for comparative advantage between states. Our one firm conclusion is that in the new millennium, we cannot afford to ignore this new metageography, the world-city network.

Acknowledgments

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Notes

1. We are aware that these rhetorics can dehumanize and decontextualize the world, and that one has to be careful and critical about "the modes and metaphors of representation within which geographical discourse is framed" (Cosgrove and Rogers 1991: 37).
2. Denis Cosgrove points to the eurocentric nature of maps compared to the view of Earth from space. Discussing NASA photo 22727, he observes that: "The photo de-centres Europe and the Atlantic, to the advantage of Africa, the least 'significant' of all the continents in the conventional system. . . . Thus, our most familiar global image today privileges the 'Third World' and the 'South' . . . Earth is no longer an extension of European earth" (1991: 127).
3. Richard Rogers in his *Cities for a Small Planet* (1997: 175), discusses "networks of cities across the world," but in the context of sustainable development: "sharing knowledge, technologies, services and recycled resources, and framing joint policies that both respect local cultures and implement common environmental objectives."
4. In her latest article, Sassen (1999: 78) argues that "New York and London, will continue to tower above the rest" in the world city hierarchy, though "a leaner system dominated by a handful of cities is evolving." Immediately under London and New York, she places Frankfurt, Tokyo, and Hong Kong, and under them, she places Singapore and Sydney. Again, however, this is not based on direct evidence of relations between the cited cities.
5. In keeping with our image of the Earth from space with lights delimiting a global pattern or constellation of cities, we have classified the world cities as one does with stars: Alpha (the brightest), Beta (second brightest), or Gamma (third brightest).

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Correspondence: Department of Geography, Loughborough University, Loughborough LE11 3TU, U.K., email J.V.Beaverstock@lboro.ac.uk (Beaverstock); same (Taylor); email P.J.Taylor@lboro.ac.uk; Department of Geography, Leicester University, Leicester, LE1 7RH U.K., email rgs10@le.ac.uk. (Smith).