The Spaces and Times of Globalization:
Place, Scale, Networks, and Positionality*

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Abstract: Discussions of the spatiality of globalization have largely focused on place-based attributes that fix globalization locally, on globalization as the construction of scale, and on networks as a distinctive feature of contemporary globalization. By contrast, position within the global economy is frequently regarded as anachronistic in a shrinking, networked world. A critical review of how place, scale, and networks are used as metaphors for the spatiality of globalization suggests that space/time still matters. Positionality (position in relational space/time within the global economy) is conceptualized as both shaping and shaped by the trajectories of globalization and as influencing the conditions of possibility of places in a globalizing world. The wormhole is invoked as a way of describing the concrete geographies of positionality and their non-Euclidean relationship to the Earth's surface. The inclusion of positionality challenges the simplicity of pro- and antiglobalization narratives and can change how we think about globalization and devise strategies to alter its trajectory.

Key words: globalization, place, scale, networks, positionality, space-time.

When Captain James Cook sailed the *Resolution* into Waimea Bay, Hawai'i, on 19 January 1778, the effect was to radically restructure the space/time vectors connecting Hawai'i with London. This rift in global space/time instantiated what I conceptualize here as a dramatic shift in positionality, opening a wormhole in social space/time that qualitatively increased the connectivity between the two places. The 19-month voyage to Hawai'i seems desperately slow by contemporary standards, but it effectively connected for the first time two

places that had developed in separate social universes.

These spatial dynamics have many similarities with those highlighted in accounts of contemporary globalization processes, such as the impact of free Internet access in 1998 on the traditional hammock industry of the remote Guyanan village of Lethem, connecting weaving women to elite customers in global cities and triggering a losing gendered struggle for control over the new wealth between the women and village elders (Romero 2000). In both cases, the rift in space/time had asymmetric consequences. For example, it dramatically changed the trajectory of Hawai'ian society, initiating its enrollment into European colonialism and culminating in annexation by the United States (after Queen Liliuokalani's attempts to disengage from the United States were quashed by a coup led by Sanford Dole). Hawai'i's impact on London was more marginal and beneficial, reinforcing London's growth as the preeminent political and financial center of an emergent world system.

Both are particular moments within much broader processes of capitalist globalization, shaped by political-economic processes, facilitated by technologies that transform space/time, and framed by discursive understandings of development and its human consequences. Thus, Cook was under secret orders from the British Crown to extend British dominion over the southern hemisphere and to report back on resources that Britain could exploit. His expedition required the development and assemblage of a network of geographic and other technologies, including credit systems, ships, maps, and sextants. Local knowledge, freely provided by those who were eventually colonized, was vital to this process (Law 1996; Latour 1987). It also entailed a commodification of space and time, through the interrelated technologies of clock making and cartography. In all these ways, Cook participated in a close eighteenth-century alliance among European science, imperialism, and geography (Livingstone 1991).

Discursively, generations of English schoolboys, such as myself, learned of Captain Cook as a heroic white male promoting science and civilizing the "natives." In this discursive frame, dubbed "the white man's burden" by Rudyard Kipling (penned when the United States occupied the Philippines in 1899, just five years after Dole's Hawai'ian coup), colonialism was legitimized through a modernist and orientalist discourse that Euro-American capitalist development is good for you. Critics analyzed such space/time rifts as the proximate cause of underdevelopment and the destruction of indigenous lifeworlds in the global periphery that was created (Naoroji 1901/1962; Frank 1978).

Proponents of contemporary globalization, from Colin Powell to the mainstream business press, still frame it as a process of modernization (Massey 1999a), whereby eliminating barriers to the rational operation of the free market will bring prosperity for all who are prepared to adapt and work hard (except for the prisoners of geography; see Hausmann 2001). Critics still stress the geographically differentiated consequences of contemporary globalization, albeit less pessimistically. They demonstrate how places can stem the destructive tendencies of globalization through territorial governance structures that assemble local capabilities for holding down the global (Amin and Thrift 1994). They argue that contemporary globalization is shifting the geographic scales at which territorial regulation is most effective, challenging that of the nation-state. They also point to the annihilation of space by time, arguing that although globalization does not mean the end of geography, it is being restructured into networked spaces (Castells 1996; Dicken, Kelly, Olds, and Yeung 2001).

In this paper, I wish to build on these important contributions. I argue that place, scale, and networks have been deployed, in turn, as geographic tropes for discussing globalization, sidelining a fourth trope: positionality within the global economy. I begin by suggesting that discussions of space, time, and globalization tend to suggest that time trumps space, neglecting ways in which situation still matters, both within the global economy in general and to the trajectories of particular places. Hawai'i's trajectory was shaped not only by its abstract incorporation into globalization, modified by local conditions, but by its specific connections to particular other places—notably the United States. I review research on the role of place and scale, suggesting that the focus on territories has attenuated attention to the role of connections between territories. The recent fascination with networks does stress horizontal spatial relationships, but in my analysis tends to place too much emphasis on the possibilities of, rather than the relational inequalities within, networked spaces. I advance the idea of positionality as a way of capturing the shifting, asymmetric, and path-dependent ways in which the futures of places depend on their interdependencies with other places, proposing the metaphor of wormholes (from physics) as a way of representing the highly non-Euclidean spatiality of the global economy since at least 1778. Finally, I discuss some implications of positionality

for how we conceptualize the processes behind, the differential livelihood possibilities enabled by, and the alternatives to contemporary globalization. Although positionality is presented here by stressing some limitations of the other tropes, I do not intend that it should replace the others. Rather, I make a broader plea for a both/and, rather than an either/or, approach to our use of geographic concepts when theorizing spatial economic dynamics (cf. Brenner 2001).

Metaphors for Space/Time in Globalization Research

It has been widely asserted that space has become less important as a result of globalization. Examining international financial relationships, Richard O'Brien (1992, 1–2) gained notoriety among geographers for asserting that "geographical location no longer matters, or matters less than hitherto. . . . Money, being fungible, will continue to try and avoid, and will largely succeed in escaping, the confines of the existing geography." Similarly, Frances Cairncross (1997, xi) of *The Economist* wrote: "Distance will no longer determine the cost of communicating electronically. . . . No longer will location be key to most business decisions." Both are deliberately provocative, restrict their comments to activities that can be carried out electronically, and describe their vision of the near future rather than the present. Nevertheless, they are consistent with the space/time imaginary of many mainstream neoliberal globalization theorists who argue that globalization makes old territorial structures irrelevant and equalizes development possibilities everywhere. Some mainstream economists have recently highlighted an important role for geography as a constraint to realizing full globalization (i.e., ubiquitous development) because of the constraints imposed by tropical climes and distance from the sea (Gallup, Sachs, and Mellinger 1999; Hausmann 2001). Yet all these analyses share what Doreen Massey (1999a, 1999b) identified as an impoverished

space/time imaginary—one that eliminates spatial difference in favor of a universal narrative of change; a new modernization theory (Porter and Sheppard 1998, chap. 5).

While critical of this imaginary, geographers have nevertheless collaborated in mobilizing metaphors that emphasize a "shrinking world" (Kirsch 1995), in which space is progressively dominated by time. This emphasis can be dated to Don Janelle's (1969) writings as part of the "spatial science" tradition of the 1960s, resurrected more recently within both this tradition and political economy. The phrases used to articulate this include "time-space convergence" (Janelle 1969), "collapsing space and time" (Brunn and Leinbach 1991), and "time-space compression"—coined by David Harvey (1989) to express the foreboding that our globalizing world can be "characterized by speed-up in the pace of life, while so overcoming spatial barriers that the world sometimes seems to collapse inwards upon us" (p. 242). These phrases have been applied to a variety of experiences of space, from the lived to the representational (Lefebvre 1974/1991), but present a common imaginary—a simultaneous speeding up of time and collapsing of space in absolute terms.

Harvey made much of the "annihilation of space by time," originally expressed by Karl Marx (1857–8/1983) in *Die Grundrisse*. Mobilized in conjunction with space/time compression, this phrase has come to mean that, while space is collapsing and time is speeding up in absolute terms, under globalization time is becoming relatively more critical than space (see also Jessop 2001). Indeed, speed has become a central metaphor for what is distinctive about contemporary globalization. Nigel Thrift (1994) discussed the emergence of a "structure of feeling," a culture of mobility emphasizing speed, light, and power. Paul Virilio (1995, 151; 1993, 10) referred to this "third interval" as one in which "the computer motor" is bringing about a situation in which "the tyranny of distances" gives way to the "tyranny of real time." Tim Luke and Gearóid Ó Tuathail (1998, 90) described an era of postmodern fast geopolitics, in which

"global flowmations . . . are re-mastering global space." Like many globalization theorists, Virilio and Luke and Ó Tuathail concluded that the digital revolution is enabling time to trump space (Agnew 2000).

Others are more cautious about the dominance of time. Harvey's use of the "annihilation of space by time" in his political economic theorizing is more nuanced than the term suggests. Harvey stressed how space is continually restructured and produced under capitalism, both in the abstract as a commodified space/time (Harvey 1996), and as a concrete spatial fix for the crises of capitalism (Harvey 1982). It is less widely recognized, although Harvey does discuss it, that Marx used the concept also to describe how speeding up the spatial circulation of commodities enhances profitability, making investments to reshape space (new means of transportation and circulation) that are essential to capital accumulation. Thrift (1994, 221) argued that mobility "takes up both space and time" and that it is misguided to prioritize time or space. Although Manuel Castells (1996) went further in some respects than anyone in arguing that time has changed under the digital revolution, he insisted that the new "space of flows" determines a "timeless" time: "Space shapes time in our society, thus reversing a historical trend" (p. 465). Yet, while some geographers insist that spatiality still matters, such analyses are posed at a high level of abstraction. There are, in fact, contrasting views on what aspects of spatiality matter most.

Territorial Thinking: Place and Scale

Discussing the end-of-geography thesis, Ron Martin (1999, 15–16) took a position that resonates with much recent work in economic geography: "Globalisation may well have eliminated *space* . . . , but it has by no means undermined the significance of location, of *place*." Places are usually represented as territorial spaces, and debates about place and globalization have focused on how territories still matter in a space of flows. Two complementary approaches have been taken on this issue. Some, drawing inspiration from the literature on industrial clusters, have sought to understand how globalization has been accompanied by the growing influence of certain localities, such as new industrial spaces or financial centers. The economic dynamism of such places is typically explained in terms of certain place-based attributes that can fix globalization locally. By contrast, others have looked at how globalization is associated with the construction of scale, noting the enhanced importance of supra- and subnational scales since the crisis of First World Fordism. In this view, local trajectories depend on how places are embedded in a range of territorial scales, from the local to the global. In both cases, the conceptualization of space/time can be characterized as territorial. The prospects of localities depend on place-based processes and both shape and are shaped by the regional, national, and global territories in which they are embedded.

The Significance of Place

A major intervention by geographers into debates on globalization has been to demonstrate the importance of territorial economies and governance structures. Geographers have been critical of prioritizing the nation-state scale in such analyses (Agnew 1994; Taylor 1996), highlighting smaller-scale territories or places: industrial districts and city-regions, located within but occasionally seen as crossing, national boundaries. There is widespread agreement that globalization has increased the importance and influence of such subnational territorial economies and polities. Marxist geographers have long argued that capitalism successively creates agglomerations of economic activity as spatial fixes to facilitate accumulation, only for these spatial fixes later to become barriers to further accumulation. Spatial fixes require investments by both firms and the state in the built environment and social infrastructure in places that

become problematic as growth sectors, production technologies, and locational preferences shift. Thus, space adds an important extra complication to the instabilities of capitalism (Harvey 1982; N. Smith 1984; Storper and Walker 1989).

Under conditions of space-time compression, relative locational advantage is argued to have become less important, and place-based characteristics more important, in determining the relative attractiveness of places for capital (Leitner and Sheppard 1998). Places aggressively seek to differentiate themselves in the competition for investment, and geographically mobile capital becomes both responsive to small differences between places and able to manipulate localities to create favorable conditions (Leitner 1990). A real differentiation has thus accompanied globalization: as the global economy shrinks, differences and inequalities between places are growing.

The observation that the end of Fordism brought with it the rise of new industrial spaces (Scott 1988) catalyzed a place-based spatial **imaginary**.[1] Economic geography shifted from a paradigm dominated by ideas of uneven development, industrial restructuring, and dependency theory, in which the economic prospects of a place were argued to be driven by external forces, to one dominated by industrial districts, whose economic prospects were argued to be driven by local, place-bound characteristics. Over time, the list of these characteristics has broadened from the transactional advantages of industrial agglomerations, particularly when characterized by the emergent characteristics of flexible specialization, to embrace the local political, social, and cultural milieu within which economic activities are embedded and through which they may be catalyzed (Storper and Scott 1993). Yet the logic of argument has not shifted and, indeed, has been embraced across the ideological spectrum of economic geography (Sheppard 2000).

This logic has two components. First, globalization after Fordism is seen as promoting a regime of accumulation, a flexible capitalism, which has catalyzed the growth of subnational industrial and technological districts that are becoming increasingly influential, relative to nation-state territories. Scott (2000, 87) argued that current economic conditions involve two kinds of transactions: those requiring close physical proximity because "the spatial costs of transacting are . . . extremely high" and those for which these costs are "extremely low." These conditions are ideal for the formation of "new urban superclusters" in which firms in those economic sectors characterized by the former kinds of transactions agglomerate. Second, and following from this point, successful places are seen as possessing key relational assets that create competitive advantage. This competitive advantage enables them to channel the uncertainties of globalization to their advantage because they offer attractive conditions for globally mobile investment capital. As a consequence, territorial economies can still flourish and local livelihoods can prosper within the space of flows (Amin and Thrift 1994; Storper 1997; Leyshon and Thrift 1997). Considerable theoretical and empirical effort has been devoted to determining which place-bound characteristics support the kind of local market-oriented cooperation that breeds success when localities compete with one another (Jessop 1999) through a close examination of the attributes of successful agglomerations (Signorini 1994; Markusen 1996; Malmberg, Sölvell, and Zander 1996).[2]

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[1] A place-based geographic imaginary has become remarkably popular in and beyond geography. It can be traced to Andrew Sayer (1984); for critique, see Sheppard (1996). By the end of the 1990s, Dirlik (1999b) had identified a general "irruption of place consciousness into social and political analysis," now also diffusing into mainstream science (Kates et al. 2001).

[2] We still lack systematic parallel analyses of failed places, which makes it difficult to determine definitively the causes of success.

In focusing on territorial economies, this literature does not conceive of such places as bounded. What happens within a territory depends heavily on its interdependence with the broader political economy, the locations in which such clusters emerge are seen to depend on the locational conditions favoring an emergent industrial cluster, and the very existence of industrial districts depends on the importance of proximity as a locational factor. At times, it is also acknowledged that such territories need not be geographically contiguous places. At the same time, the burden of analysis is on the coherence and functional effectiveness of the territory as the key to its economic prosperity. Transactions whose spatial costs are extremely high take place within a territory and are key to building the bundle of relational assets that make success possible. By contrast, for transactions whose spatial costs are extremely low, relative location does not matter. The broader situation of these places within the global economy is not seen as important to their success. These places tend to be seen as fixing themselves within an undifferentiated space of flows whose structural logic is "placeless" (Castells 1996, 413), a "pure flow economy" (Storper 1997, 28), or a field of transactions of "unlimited geographical range" (Scott 2000, 88). Global space thus has become so small, fluid, and interdependent that relative location matters much less than territorial conditions. As a consequence, the residents of a place are held primarily responsible for its success (Sheppard 2000).

Scott argued that this conceptualization of territorial economies has dramatic implications for the geography of globalization, in ways reminiscent of Kenichi Ohmae's (1995) arguments. Global city-regions now "constitute a mosaic that is beginning to override the core-periphery relationships that have hitherto characterized much of the macrogeography of capitalist development" (Scott 2000, 87). They also may play an important normative role—facing distinctive governance challenges that, if resolved successfully, may catalyze an alternative governance structure and a more socially beneficial kind of globalization than the neoliberal model. Their success is based on their possessing certain economic, political, and cultural characteristics, rather than their location in global cores or peripheries. Scott struggled to make good on this vision, however, when he noted that 24 of the world's potential city-regions, all located in the global south, do not yet qualify as such. Perhaps situation still matters.

In many ways, such territorial economies invoke a global sense of place:

> Instead, then, of thinking of places as areas with boundaries around, they can be imagined as articulated moments in networks of social relations and understandings, but where a large proportion of those relations, experiences and understandings are constructed on a far larger scale. . . . And this in turn allows a sense of place which is extroverted . . . which integrates in a positive way the global and the local. (Massey 1994, 5, 154–5)

Industrial geographers share many aspects of this vision and that of other feminist and postcolonial scholars, which emphasizes that resistance to globalization will come from below—formed within the local places whose importance to globalization has been underestimated. Phil Cooke (1989) stressed the proactive nature of localities. Arif Dirlik (1999a) contended that place-based politics are the key to resisting and challenging capitalist globalization from below. In his view, negative local experiences of globalization stimulate people to question the universal and placeless narrative of globalization that dominates discourse and to recover the importance of distinctive local understandings, norms, and narratives of social change. Carla Freeman (2001, 1012) argued that feminizing globalization theory requires challenging "the portrayal of the local as contained within, and thus defined fundamentally by, the global" (see also, Nagar, Lawson, McDowell, and Hanson 2002), and Cindy Katz (2001) called for a topographic analysis of how places are affected by, but also find ways of resisting, reworking, and surviving, globalization.

There remain important differences between an industrial geographic and a feminist perspective, however. Industrial geographers stress the coherence and capability of territories as political economic units, whereas Massey (1994) emphasized difference within and the openness of global places. In particular, feminists have argued that local alternatives to globalization are part of this difference—heterogeneous realms of local life, such as noncommoditized social reproduction or local noncapitalist production systems, that others overlook (Katz 2001; Gibson-Graham 1996). Feminists have also stressed that collaboration, rather than competition, between places is the key to successful resistance, articulated variously by Gillian Rose (1993) as paradoxical spaces and by Katz as countertopographies (see also Leitner and Sheppard 1999 for a similar argument in political economy). It is only in this last topic, however, that the positionality of places within the global economy receives much attention—focusing on positionality as a resistance strategy, rather than the role of positionality in shaping local trajectories of globalization.

The Construction of Scale

Any discussion of place and globalization, and thus of the local-global nexus, invokes a concept of geographic scale, but scale has recently become an influential theoretical framework for thinking about the spatial dynamics of globalization. Theorists of scale build on research on place by asking how change in any one territorial unit is affected by change at other geographic scales. The existence of a vertical hierarchy of scales from the body to the globe is generally taken for granted, and certain kinds of activities are often associated with particular scales (trade with the global, trade unions with the national, and caring work with the home). Scale theorists have argued, however, that these are not necessary relations but artifacts of how scales are constituted under certain conditions. Emphasizing that all scales are socially constituted in relation to

one another, scale theorists have sought to conceptualize how scales come into existence and articulate with one another and how events at a particular scale are shaped by their relationships with different scales (Smith 1992; Delaney and Leitner 1997).

This approach has been applied to analyze globalization. Stimulated by Neil Smith's reflections on the production of scale (1992, 1996), and Bob Jessop's speculations on the hollowing out of the nation-state (1994), Erik Swyngedouw (1997b) and Neil Brenner (1999) pioneered a scalar theory of globalization. In this view, between 1945 and the early 1970s, when First World industrial capitalist nations were dominated by a Fordist regulatory regime, the nation-state was the dominant geographic scale at which economic relations were organized and governed. Buoyed by strong national regulation of international economic flows and unequal international exchange with Third World nations (Jessop 1999) and in a geopolitical era that saw the dissolution of supranational colonial-scale empires under the Bretton Woods agreement (Porter and Sheppard 1998), the national scale was produced as the dominant arbiter of economic fortunes. New scales have emerged as important, however, since Fordism entered a crisis triggered by declining national productivity (particularly in the United States and Britain), by organized labor's ability to demand more of the surplus, and by intensified international competition that has undermined key Fordist industries in the First World.

Most often discussed, of course, is the rising importance of the global scale. Yet the argument developed by scale theorists is more complex. Observers of transnational corporations, typically seen as the vanguard of globalization, have concluded that their global reach has not resulted in a loss of either national identity or attachment to localities (cf. Ruigrok and van Tulder 1995). Instead, transnational corporations engage in a strategy of global localization, whereby global competitiveness is rooted in close relationships with particular localities, including headquarter locations, low-cost

production sites, industrial districts, and demand nodes (Mair 1997). Since Fordism, nation-states have also actively participated in supranational organizations and agreements (harmonizing market regulation and dismantling national barriers to commodity and capital flows), while simultaneously promoting their own local, particularly metropolitan, economies as vital to national economic competitiveness and as responsible for their own success or failure (Jessop 2001). Thus, political and economic processes are both globalizing and localizing—dubbed glocalization by Swyngedouw (1997b). As Brenner (1999, 52–3) put it:

> the contemporary round of globalization has radically reconfigured the scalar organization of territorialization processes under capitalism, *relativizing* the significance of the national scale while simultaneously *intensifying* the role of both sub- and supra-national forms of territorial organization. . . . Processes of territorialization remain endemic to capitalism, but today they are jumping at once above, below, and around the national scale upon which they had converged throughout much of the last century.

Brenner insisted that the result is not a zero-sum game, in which local-scale processes are gaining at the expense of national-scale processes, arguing that nation-states are active participants in (rather than victims of) globalization. Nation-states encourage localization, and metropolitan economies still depend on nation-states to champion them and their products in global markets. State territorial power no longer maps neatly into the boundaries of the nation-state. "The globalization of urbanization and the glocalization of state territorial power are two deeply intertwined moments of a single process of global restructuring . . . since the early 1970s. . . . From this point of view, globalization must be understood as a rescaling of global social space, not the subjection of localities to the deterritorializing, placeless dynamics of the 'space of flows'" (Brenner 1998, 27). In this view, phase shifts in the dynamics of global capitalism are seen as precipitating scalar shifts in its territorial organization. Jessop (1999, 35) offered a somewhat different analysis, placing more emphasis on the conflicts with the national state that result from cities orienting themselves beyond the national space, a process he called glurbanization.

Both Swyngedouw and Brenner see the spatial dynamics of capitalism as the central driving force in this rescaling, reworking a Marxian analysis of the production of space through the lens of scale. Whereas Brenner is more concerned with the economics of this process, Swyngedouw (1997a, 173, 176) argued that the politics of scale is also crucial to these shifts and to challenging antidemocratic tendencies associated with them:

> [T]he "glocalization" or rescaling of institutional forms leads to more autocratic, undemocratic and authoritarian (quasi-)state apparatuses. . . . These new institutional forms are riven with all manner of conflict and tension. First, this . . . is highly contested, particularly by those who become marginalized in or excluded from these new institutions. Second, the new alliances . . . accentuate the need from the part of boosters to try and create a new hegemony of vision. . . . The politics of scale are surely messy, but ought to take center-stage in any successful emancipatory political strategy.

Helga Leitner (1997, 125) emphasized that the politics of scale is not just driven by economic dynamics, but is politically constructed, using the term *construction of scale* to bring attention to political structures and to the importance of agency in the politics of scale (Leitner forthcoming). Sallie Marston (forthcoming) adds an important third element—social reproduction and the gendering of scale—although she does not address its implications for globalization.

In short, contemporary scale theorists share with those who focus on place a common emphasis on the territorial nature of societal organization and its implications for globalization. Their important addition is stressing the need to consider how the

fortunes of territories of a particular scale are shaped by the social construction of scale in coevolution with globalization. Changes in places of a particular scale thus depend on how they articulate with changes at other scales, implying that globalization and localization are not independent processes but need to be considered in relation to one another (Brenner 2001). Scales themselves may shift in importance as a result of such processes, giving globalization a far more complex geography than the commonly accepted narratives of global homogenization or the disappearance of the nation-state. As a consequence, political resistance to globalization cannot just occur in local places, even when local negative experiences motivate resistance. Local resistance must be complemented by scale jumping (N. Smith 1992; Harvey 2000).

Scale theorists certainly examine how social processes stretch horizontally through space, as well as vertically across scales. Most analyses of scale work with received categories, a hierarchy of embedded territorial units (body, neighborhood, city, region, nation-state, supranational bloc, globe).[3] When globalization makes scales of greater geographic scope more important, smaller places that are separated from one another at one scale become connected through their common association with a higher scale. In this sense, the analysis splays outward as it moves to higher scales.[4] Yet, as Brenner (2001) argued, it does not follow that scale is sufficient to capture all aspects of the spatiality of globalization. He suggested, first, that scale theory is not necessary if analysis is restricted to changes at a single scale because these are really studies of a certain kind of place. Second, the scales that are conventionally invoked, in a relational

analysis of already-existing scales, are contiguous geographic territories often with fairly well-defined boundaries, where smaller scale units nest within larger scale units. There are attempts to imagine new scalar forms, such as territories that do not nest within larger units or the fuzzy and noncontiguous spaces of geographic networks, but it is far from obvious that such phenomena can comfortably be incorporated into scale theory (Leitner, Pavlik, and Sheppard forthcoming). Finally, scale theory only connects geographically distant localities indirectly, moving up to a larger scale and then down again to the locality, without examining direct interconnections. A focus on territories, even when modified through the vertically splayed approach of scale theory, is not sufficient to capture such horizontal geographic relations.

Unpacking Space/Time

Equating the significance of geography with territoriality, at and across different scales, has offered an important corrective to end-of-geography narratives. Other ways of conceptualizing space and time should be part of our toolkit, however, if we are to analyze adequately the ways in which distant places have directly shaped one another's fortunes throughout the long history of globalization. Castells's focus on the global networks that constitute the space of flows suggests that networks, stretched horizontally across space, are remaking the geography of globalization. Bruno Latour went one step further, using actor-network theory to challenge all conventional thinking about spatiality. I argue, however, that spatiality paradoxically tends to drop out of their analyses and that a full analysis of connectivity across space/time requires attention to an additional issue: positionality.

Networks

Networks have recently risen to challenge scale as a way of conceptualizing geographies

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[3] An irony of social theorists' emphasis on territoriality is that these theorists frequently explicitly reject Newtonian views of space, but adopt a Newtonian definition of territories—as contiguous regions.

[4] I am grateful to a referee for this analogy.

of globalization.[5] They are generally invoked at one of two extreme scales. At one extreme, local, place-based networks are seen as the key to the formation of economic clusters and to the success of places within the space of flows (Amin and Thrift 1994). At the other extreme, global networks of trade, financial transactions, commodity chains, and migrants are seen as a defining characteristic of contemporary globalization (cf. Held, McGrew, Goldblatt, and Perraton 1999). Castells (1996, 61) made the latter point particularly forcefully, arguing that the digital revolution has made possible the global development of a networking logic. "[T]he morphology of the network seems to be well adapted to increasing complexity of interaction and to unpredictable patterns of development arising from the creative power of such interaction." The pervasiveness of this mode of interaction, in contradistinction to those of hierarchies and markets, is restructuring the spatiality of global capitalism. The organization of time-sharing social practices through networks is creating a space of flows in which the "logic and meaning [of places] becomes absorbed into the network" (p. 412); nodes and hubs are "hierarchically organized according to their relative weight within the network" (p. 413); and managerial elites create for themselves a network of locally secluded and globally interconnected defensible spaces.

Actor-networks were originally posed to solve a philosophical problem in social theory. The actor-network is "intentionally oxymoronic" (Law 1999, 5), designed to bypass the structure/agency distinction in social theory: actors derive their intentionality, identity, and morality from the network, rather than as independent agents. Yet the network is not a structure shaping action but simply a "summing up" of inter-

actions (Latour 1999, 17). Actor-network theory also challenges the distinction between scientist and object of study, seeking to find out how "actors negotiate their ways through one another's world-building activities" (p. 21) rather than to explain behavior. A successful actor-network brings together animate and inanimate objects and resources into a complex, ever-changing resilient heterogeneous network. Humans, animals, resources, and machines are all "actants" within the network, whose participation is essential to its success. Once actor-networks are "successfully established, if all the elements act in concert, then they will take on the properties of actors" (Murdoch 1997, 361). Successful actor-networks become stable and persistent features of society. Actor-network theorists have argued, however, that their stability and structure are more apparent than real.

Successful actor-networks are built by enrolling the heterogeneous actants as active participants in a common project. Central to this conceptualization is *translation*: "all the negotiations, intrigues, calculations, acts of persuasion and violence, thanks to which an actor or force takes, or causes to be conferred on itself, authority to speak or act on behalf of another" (Callon and Latour 1981, 279). *Centers of calculation* then form within actor-networks: places where norms are established and routinized and from which the network is "made to act as one" (Latour 1987, 235). Latour (1987, 219) argued that *action at a distance* is necessary to hold actor-networks together and that the construction of space and time is central to this process. His examples included the collection of local cartographic knowledge from around the world during the "age of exploration" and its synthesis in European centers of calculation prior to and during colonialism. Yet such centers of calculation and the hierarchical binary distinctions they create between cores and peripheries, science and emotion, humans and non-humans, and so forth, are inherently unstable: "the bits and pieces assembled . . . into an order are constantly liable to break

[5] Rather than review the voluminous literature on networks (Leitner, Pavlik, and Sheppard forthcoming), I focus on two influential accounts in geography: those of Castells (1996) and Latour (1987, 1993, 1999).

down, or make off on their own. . . . [S]truggle is central to actor-network theory" (Law 1992, 386). Actor-network theorists seek to understand how such contested systems hold together, in a way that makes them seem natural, immutable, and authoritative.

Suspicious of explanations and categories, Latour was agnostic about actor-networks— seeking to account for, rather than judge, the actor-networks that are created (Haraway 1997). Yet there is a tendency to categorize actor-network theory as a new unifying theory that is capable of privileged insights in comparison with reductionist and structural approaches. Actor-network theorists also cast judgment on good and bad kinds of network theory. They ignore the long-standing tradition of social network analysis in sociology because of the latter's focus on structures of inequality in social networks and on how network position creates inequalities between social actors (cf. Hargittai and Centeno 2001) and its neglect of change, struggle, and agency (but see Emirbayer and Goodwin 1994).

Latour and Castells both exemplify a network discourse that has become broadly influential over the past 20 years. This discourse presents networks as an emergent or neglected form of social organization, with distinctive characteristics making them superior to markets and hierarchies. Networks are represented as self-organizing, collaborative, nonhierarchical, and flexible, with a distinctive topological spatiality. This network ideal (Leitner and Sheppard forthcoming) constructs networks as social spaces that behave like complex systems, in which all participants potentially have significant influence over the collective outcome. As they stretch over the globe, networks also usher in a new spatiality. Latour (1993, 117–9) was explicit as he skewered another dualism:

> Is a railroad local or global? Neither. It is local at all points, since you always find sleepers and railroad workers, and you have stations and automatic ticket machines scattered along the way. Yet it is global, since it takes you from . . . Brest to Vladivostok. However, it is not universal enough to take you just anywhere. There are continuous paths that lead from the local to the global, . . . so long as the branch lines are paid for. . . . Networks, as the name indicates, are nets thrown over spaces. . . . They are connected lines, not surfaces. . . . [They] can be extended almost everywhere; [they] can be spread out in time as well as in space, yet without filling time and space. . . . Now, as concepts, "local" and global" work well for surfaces and geometry, but very badly for networks and topology. . . . One branch of mathematics has been confused with another!

Network thinking, then, is associated with a distinctive kind of geometry—one that stretches horizontally across the map and that questions the very categories of global and local (and thereby place and scale). Dicken, Kelly, Olds, and Yeung (2001, 89), echoing Latour's skepticism about scale (but disagreeing with his view that all can be subsumed within networks), argued that networks are a "foundational unit of analysis for our understanding of the global economy."

Currently, dominant discourses about networks are so concerned to present them as flexible and nonhierarchical that there is a tendency to neglect their internal spatial differentiation in both social and geographic space. Laurier and Philo (1999) commented on the "flattened spatiality" of Latour's theory, and the same applies to the majority of recent writings on networks (Leitner, Pavlik, and Sheppard forthcoming). As I noted earlier, this neglect implies that the connections between places in our current global society are so complex that no broad spatial structures exist anymore. Position within the space of flows matters, but largely in a binary way. Much attention is paid to the networks a place participates in, but much less to how it is positioned within the spaces of those networks. Sassen (2001), for example, suggested that the prospects for cities as intermediaries between national economies and global

networks depend on which networks they participate in. Dicken, Kelly, Olds, and Yeung (2001, 95) similarly stressed the power of, rather than power differentials within, networks: "If the global economy is to be understood as a set of interlocking [networks] of economic activity, then we must be prepared to ask who is excluded from such networks, and why."

Castells and Latour recognized that networks have emergent hierarchies and inequalities, pointing respectively to elite spaces and centers of calculation, but they stressed the emergent and contingent nature of the internal spatiality of networks. The internal spatiality of really existing networks does shift as the networks evolve in response to internal dissent and external threats, but it also demonstrates a great deal of persistence. As Stephen Graham (1998) and others have argued, even the telecommunications networks that Castells envisioned as catalyzing the novel space of flows retain a strong internal sociospatial differentiation reminiscent of those associated with preexisting methods of communication and transportation. More attention needs to be paid, therefore, to the internal spatial structure of and power hierarchies within networks and to their considerable resilience and path dependence, despite internal contestations.

Positionality and Space/Time

Geographers use a variety of terms to describe how places are connected across space, the most common of which are distance, relative location, accessibility, and situation. None of these terms is adequate for my purposes. Distance and relative location often connote a Euclidean geometry or some transformation of it, in which the connectedness of two places is approximated by a continuous mathematical function of their Cartesian coordinates. Accessibility and situation envisage more complex ways of measuring connectivity or closeness, but the former suggests a quantitative measurement system and both tend to be seen as fairly static spatial attributes of a place, with less attention to

time (but see Janelle and Hodge 2000). I propose the term *positionality* to describe how different entities are positioned with respect to one another in space/time.

My use of positionality is influenced by feminist theory, in which positionality was coined to describe the situated positions from which subjects come to know the world. In feminist theory, the positionality of researchers or teachers is emphasized both to challenge the proposition that there is objective knowledge and to sensitize investigators to how analysis is shaped by researchers' and teachers' "social situatedness . . . in terms of gender, race, class, sexuality and other axes of social difference" (Nagar and Geiger 2000, 2). Geographic situatedness is missing from this list, and that is the aspect of positionality that I emphasize here (I could use geopositionality, but that term seems excessive). Feminist theorizations of positionality emphasize a number of aspects of connectivity that are essential to my conceptualization. First, positionality is a relational construct; the conditions of possibility for an agent depend on her or his position with respect to others—as in **network theory**.[6] Second, positionality involves power relations, both in the sense that some positions tend to be more influential than others and in the sense that emphasizing the situated nature of all knowledge challenges the power of those who claim objectivity. Third, positionality is continually enacted in ways that both reproduce and challenge its preexisting configurations. That is, it is both persistent, in that most enactments reproduce previous configurations, and subject to unexpected change, because each repetition is imperfect (Rose 1997; Valentine 2002).

Positionality and the societal and biophysical processes that influence it both shape and are shaped by space/time. This idea is best expressed through a dialectical and relational conception of space/time (Soja 1980; Harvey 1996; Massey 1999b). As with biophysical processes (Castree 1995), it

[6] I use *agent* here in the broadest possible sense—to refer to any entity with causal power.

would be a mistake to argue reductively, on the basis of the undeniable influence of society over space/time, that there is no reciprocal effect. Space/time is a contingent outcome of societal and biophysical processes that create places and positionality. As with all dialectical processes, concrete places and spaces emerge whose persistence makes them seem immutable or natural. It is important to deconstruct this sense of inevitability and to realize that their persistence cannot be taken for granted but reflects a constant struggle to hold things together. At the same time, however, considerable persistence does exist, and the materiality of places and spaces has real and concrete effects on future trajectories.

I do not propose positionality as an alternative to the spatial metaphors currently in vogue—place, scale, and networks. Place, as Massey (1994) argued, cannot be adequately understood without considering the complex positionalities that link people and places with one another and that create heterogeneity in a place because different residents are positioned differently. The construction of scale inevitably involves shifts in positionality. Processes that connect distant places more closely both reduce differences in their positionality and enhance the importance of more aggregate scales. Networks and positionality adopt a similar relational approach, although much contemporary thought on networks downplays positional inequalities within networks. Our understanding of the spatiality of globalization will be impoverished, however, if positionality is neglected. First, attention to positionality calls attention to how connections between places play a role in the emergence of geographic inequalities within the global economy; inequalities that show remarkable persistence and path dependence, notwithstanding the new possibilities that globalization supposedly creates for all. Second, attention to positionality has profound theoretical consequences for understanding globalization; theories can mislead when they fail to take account of positionality. Third, positionality stresses that the conditions of possibility in a place do not depend primarily on local initiative or on embedded relationships splayed across scales, but just as much on direct interactions with distant places. Fourth, it highlights the unequal power relations that stem from such asymmetries. Fifth, positionality demands attention to questions of scale.

(Re)producing positionality. Even in today's seemingly postgeographic world of cyberspace, the broad contours of positionality within the global economy show remarkable path dependence. The geography of telecommunications networks has changed little in 50 years, and colonial economic interdependencies also persist (Porter and Sheppard 1998). Confining attention to economic aspects of positionality for the purposes of illustration, it is important to recall that an essential productive activity in any capitalist space-economy is ensuring that commodities are delivered to spatially separated markets, to recoup investments, in the shortest time possible. This activity requires the progressive development of space-transcending technologies to accelerate the flow of commodities (including labor power) and information between places (Harvey 1982; Sheppard 1990). These technologies, in turn, shape space/time and thereby positionality, making some places economically closer than others by reducing transaction costs between them.

Any general increase in space-transcending technologies is unevenly applied geographically, however, enhancing the positionality of some places relative to others. The steamship, airplane, and telegraph generally enhanced transoceanic mobility, but historically were applied first to the routes along which large shares of commodities and information already flowed—linking major markets. Thus, the early efforts at intercontinental telegraphy were directed toward linking Europe with the United States, connecting the New York and London stock markets soon after the first successful trans-Atlantic cable was laid in 1851 (Hugill 1999; Mattelart 2000). In contrast, direct telecommunication and air flights between major African cities can still

be difficult today. New York and London remain positioned close to one another in communications space, compared to Cairo and Cape Town.

New communications technologies also alter experiences of and expectations about time, with complex consequences for positionality. For example, differences in positionality may be increasing even in a shrinking world. Expectations about what constitutes an adequate time for financial information to be transmitted from New York to London have fallen dramatically over the past 200 years, from weeks to milliseconds. If the speed of communication linking two other places has fallen only from weeks to minutes during this time frame, then, by comparison to New York and London, those places would be relatively farther away from one another now than before.

Reassessing economic theories of globalization. Attention to the economic processes that shape positionality alters our ideas about the spatial dynamics of globalization. Much of the received wisdom of how markets work, both in neoclassical and Marxist economic theory, was developed under the assumption that economies have no spatial extent. This received wisdom can be questioned, however, because the production of positionality challenges some key theoretical claims emanating from economics: the stability of market-based equilibria, the possibility of regional economic equality, the social benefits of free trade or land markets, the likelihood that rational choices lead to expected outcomes, the stability of class alliances, and the theory of value (Harvey 1982; Sheppard and Barnes 1990). It follows that the contrasting grand narratives about globalization associated with these two economic theories, of globalization as modernization and globalization as polarization, respectively, are also questionable. The global capitalist economy is better conceived of as an out-of-equilibrium, complex and contested spatiotemporal system whose long-term outcomes are unknowable.

Positionality and territorial evolution. It has been common to argue that changing local conditions is the key to development. Attention to positionality highlights the incompleteness of such accounts, however. Jim Blaut (1993) argued that proximity to New World resources, because of physical distance modified by prevailing winds, gave Europe a decisive advantage in the struggle over where capitalism prospered within the Old World. Positionality with respect to untapped biophysical and human resources, and not the Protestant work ethic, underwrote Europe's emergent position as the center of political and economic power. Access to these resources also accelerated the development of colonial empires throughout the Old World, reinforcing the positional advantage of European nation-states during and after colonialism (cf. Frank 1978). In this view, recognition of positionality challenges those who would ascribe success, Eurocentrically, to place-bound attributes of Europe (Blaut 2000).

Contemporary arguments promoting neoliberal globalization, as articulated through structural adjustment and the Washington Consensus, also maintain that creating appropriate domestic conditions is the key to development, irrespective of positionality. As I discussed earlier, similar arguments underlie many accounts of industrial districts and city-regions. Such arguments depend on the assumption, challenged here, that positionality no longer matters.

The evolution and influence of any place depend on the details of its positionality. British colonialism differed greatly from that of other colonial powers, shaping the economies, political systems, and cultural norms of British colonies in particular ways. To equate all such influences simply with colonialism is to fail to understand its complex spatiotemporal evolution. It still makes a great deal of difference to local experiences of globalization whether the norms of globalization are shaped in Washington, Berlin, or Tokyo, as illustrated by the ability of the World Bank to marginalize distinctive East Asian

approaches to state-economy relations (Wade 1996).

Positionality and power. Social network theory has long stressed how power is relationally constructed, and this is certainly true for positionality within the global economy. Agents occupy powerful positions in space/time when they find themselves at the center of, and in control over, networks of relationships that simultaneously position others in a present and possibly future state of compliance or dependence (Van Tulder and Ruigrok 1997). Unequal positionality can also be central to the reproduction of power hierarchies, as Johan Galtung (1971) explained. Nation-states that are willing to use their positional advantage as core territories to promote globalization, under terms that enhance their well-being and geopolitical power, reinforce their positional advantage and significance. By the 1890s, for example, Britain had successfully taken advantage of its position at the center of a colonial empire of global reach to make itself the indispensable node in global cable and telecommunications networks, giving it a significant geopolitical advantage during World War I (Hugill 1999). It was also able to take advantage of its hegemonic position to promote discourses on free trade, even as it consistently violated these principles, whenever expedient, in its interactions with such colonies as India and Ireland.

More recently, the United States has been able to reinforce its influence over contemporary globalization even as nation-states are losing their powers of self-determination, through the Washington Consensus that has enrolled other nation-states and supranational organizations into a common understanding of the benefits of neoliberal globalization. In turn, more peripheral nation-states' willingness to bend to the Washington Consensus reflects their more marginal positionality. Drawing a distinction between core and peripheral states, Glassman (1999, 691) explained why peripheral nation-states participate in global processes that reinforce their marginal posi-

tionality and diminish their power. Key to this participation, in his view, are the international agendas of national elites in peripheral states, whose interests are supported by neoliberal open-border policies, as well as the ideas of expatriate and domestic policy advisors who have been trained in the academic institutions of core countries (Nesseth 2001).

Although this symbiotic relationship between positionality and power may suggest a global economy with persistent core-periphery relations, reminiscent of dependency and world-system theory, positionality demands a more nuanced account. Drawing on Deleuze, Judith Butler (1993; see also Thomas 2002) noted that all attempts to repeat power/positionality relations are imperfect, creating instability and agency even within power. This creates room for occasional dramatic and unexpected reworkings of positionality and power. Examples abound, from the emergence of Germany, Japan, and the United States to successfully challenge Britain during the twentieth century, to the more recent successes of a select few newly industrializing countries and the rise to prominence of places like California, Seoul, and now perhaps the Pudong district in Shanghai. Initiative from within the territory was important in each case, but the transformation has also required reconfiguring the positionality of that place within the global system. Attempts at transformation often founder on the difficulties of overcoming a disadvantaged positionality. Yet such positionality creates conditions for resistance and struggle, and it is remarkable to see seemingly unassailable positional hierarchies sometimes collapse overnight, as in Eastern Europe in and after 1989.

Meanings and discourses closely articulate with, but certainly are not reducible to, the positional dynamics of political power. Orientalist discourses, through tropes of race and gender, became globally powerful tools for marginalizing non-European populations, justifying colonialism at home and enrolling support in the colonies—where local elites adopted European norms and the remaining

population was criticized for, and came to believe in, their own backwardness. Such discourses, periodically restructured, continue to play an important normative role in development-as-modernization discourses (Escobar 1994; Doty 1996). Globalization has reinvigorated these discourses (Porter and Sheppard 1998; Massey 1999a). As local understandings, norms, and practices in marginally positioned places are abandoned, to be replaced by shared norms of competitiveness, democracy, and sound governance that diffuse in from powerful places (termed "colonization of the lifeworld by the system" by Habermas (1989)), places come to share a common positionality in the space of discourse.

Yet discourses from the margins have also shaped ideas in positionally advantaged places. Judith Carney (2001) showed how African knowledge about the production of rice that slaves brought with them contributed to the competitiveness of southern U.S. plantation agriculture. Contemporary migration patterns challenge established norms in places of in-migration, as previously distant cultures become copresent in global cities (Ong 1999). In addition, when the shared belief that structural adjustment should guarantee prosperity comes into conflict with experiences of impoverishment, space is opened for considering alternative discourses that may empower those in the periphery. Attempts to resuscitate local approaches to social change in positionally marginalized places both fight the idea of neoliberal globalization and seek to distance peripheral peoples and places from globalization and its locally deleterious influences (Escobar 1994; Esteva and Prakash 1998). Postcolonial theory is based on recognizing the importance of positionality (colonial relations) to understand such struggles over meaning, struggling to avoid oversimplifying this positionality into an undifferentiated state of postcoloniality (McClintock 1992).

Positionality and scale. Positionality can be ascribed to agents at scales ranging from the body to the world region. To talk of the positionality of an agent risks essentializing a heterogeneous phenomenon. Members of the same household typically are positioned differently with respect to one another, both within the family and with respect to the rest of society, and such differences exist among the residents of any territory. An individual's positionality varies through space/time, shifting, say, from wife to corporate director and back at different points in her diurnal time-geography, and depends on the scale at which it is examined. For example, a working-class husband living in the north of England may experience privileged positionality as a result of his gender and nationality but marginalized positionality because of his class and regional location.

Many of the examples in this paper dwelt on the positionality of national territories, running the risk of statism as well as essentialism (Taylor 1996). A multiscalar perspective on positionality is important, however. For example, the term *British colonialism* neglects the fact that the colonial project was implemented in elite male spaces of southern England—the playing fields of Eton; the classrooms of Oxford and Cambridge; and the parliamentary spaces, boardrooms, and gentlemen's clubs of London. Contemporary globalization is equated with an Americanization of economic principles, financial systems, music, and movies, but it is, for example, Boston and Washington, D.C. (for neoliberal economic policy), New York (for banking), Detroit (for techno-music), and Los Angeles (for movies) that are thereby positioned at the center of globalization processes—or, more precisely, Cambridge, Massachusetts, the Washington Mall, downtown Manhattan, black Detroit, and Hollywood. These are not regarded as typically American places, and indeed are seen by many Americans as places that undermine mainstream values. So when the United States successfully promotes their global positionality, the form that Americanization takes differs greatly from conventional constructions of the American

way of life—as right wing opponents of globalization are quick to emphasize.

If positionality is indeed important, then there seem to be no easy answers to the problematic of globalization. These implications are addressed in the conclusion, but first I seek to provide a glimpse into the geography of positionality.

Wormhole Geographies

In principle, positionality can be mapped by depicting the relationships between different agents, in different places, and at different scales. Mapping it onto the Earth's surface is far more complex, however, because there may be little relationship between proximity in Euclidean geographic space and positionality. When residents of the same territory share a similar positionality, positionality can be a shared feature of the place where they reside. Yet, as Massey (1994) insisted, living in the same place does not imply a similar positionality. In addition, whereas proximity in geographic space is generally thought to be symmetric, positionality is often an asymmetric relationship: core agents exert more influence over peripherally positioned agents' locations than vice versa.

How can positionality be mapped with respect to the Earth's surface? Any abstract discussion of socially constructed space/time is fraught with a fundamental paradox. If space/time is a social construct, what coordinate system can be invoked to describe it? Coordinate systems are social constructs, and to invoke a particular system as the basis for analysis contributes to its reification.[7] To provide some insight into how positionality plays out geographically, I take the spher-

ical coordinate system approximating the shape of the globe as my reference point. In doing so, I do not assert its naturalness, but its taken-for-grantedness. Maps of the world are a commonly understood way of depicting the geographic organization of society.

The relationship between positionality and physical distance is complex. Positionality often leaps across space and thus cannot be read off easily from conventional cartographic images of relative location. I find the wormhole to be a useful metaphor for capturing this complexity. When two relatively isolated places become closely connected, meaning that their positionality becomes closely interrelated, then a wormhole opens between them. The term *wormholes* originated in general relativity theory, itself a relational approach to space/time. Wormholes represent discontinuities in the warped space/time of the universe, portals through which it is possible to travel virtually instantaneously to a distant place that otherwise would take light-years to reach. Their theoretical existence was discovered in the mathematics of relativity theory, although the same equations suggest that their material existence is too brief for them to be observed, let alone used for space travel (cf. Thorne 1994).

Notwithstanding their apparent rarity in physics, such space/time structures are much more common in our global society. Captain Cooke's journey to Hawai'i was tedious, by today's standards. Relative to contemporaneous space/time conventions, however, particularly those of Hawai'i's inhabitants, it constituted a wormhole. For Europeans, the possibility of traveling so far was quite radical, much like current views of space travel, and for Hawai'ians it was a quantum leap beyond dugout canoes. A connection was made between geographically distant places for the first time that transformed the movement of people, capital, and ideas between the two places and introduced a phase-shift in the trajectory of Hawai'i as a place. The subsequent invention of the telegraph made it possible for information to move more rapidly than the body, severing

[7] This paradox is common in social theory, such as debates in feminist theory about how any discussion of gender is in danger of reproducing the very social conventions about gender that theorists struggle against, or concerns in postcolonial theory that the term *postcolonial* reifies the very historical categories it seeks to challenge (Butler 1990; McClintock 1992).

the space/time of information from that of human movement and qualitatively increasing the existence of wormholes. Now, communications technologies allow people both to communicate almost instantaneously with geographically distant individuals and to be copresent in distant locations (by means of web cameras, television, and the movies). Such connections are unevenly developed, however, because the economic, political, and cultural forces that create and reinforce presence-at-a-distance are highly geographically selective. Contemporary maps of telecommunications flows show multiple wormholes of high bandwidth teleconnectivity linking key places in the global economy, with few and often indirect linkages to peripherally positioned places (Dodge and Kitchen 2001, plate 2).

The positionality of two places should be measured, therefore, not by the physical distance separating them, but by the intensity and nature of their interconnectedness (an insight from geography's spatial science tradition of gravity and hierarchical diffusion models—notwithstanding critiques of this tradition's spatial fetishism; cf. Sheppard 1995). Like networks, wormholes leapfrog across space, creating topological connections that reduce the separation between distant places and reshape their positionality. The presence and frequency of wormholes is then a measure of the degree to which positionality stretches selectively across geographic space. We should be skeptical of analogies with physics, however. The conditions that create these wormholes are different and much more common and persistent than are those of relativity theory, and they imply different kinds of interdependencies. Wormholes are a structural effect of the long historical geography of globalization, reflective of how globalization processes reshape space/time. The existence of such wormholes may also have highly asymmetric consequences for the places that are connected because of the properties of positionality developed earlier. In some cases, often those connecting positionally advantaged agents, the presence of a wormhole may symbiotically advance the prospects of all those who are connected. Wormholes linking positionally advantaged with disadvantaged agents may well reinforce preexisting inequities, however, at least in the short run.

An increasing proportion of human interaction transcends geographic space in this manner, in ways that look different from the spatiality of conventional maps. These interactions nevertheless reflect, reproduce, and occasionally restructure a consistent spatial order, as can be seen in recent work on world cities. Defining the status of such cities by their position within transnational networks, rather than by place-bound characteristics like size, corporate headquarters, or dominant economic activities, one can see that the role and trajectory of such cities is bound up with their positionality (Smith and Timberlake 1995; Beaverstock, Smith, and Taylor 2000).

A global sense of place, the complex ways in which "what *takes place* . . . is . . . splayed out and unfolded across a myriad of vectors" (Doel 1999, 7), can also be associated with the creation and operation of such wormholes. Kevin Hetherington (1997, 197) argued that places are "the effect of the folding of spaces, times and materials." Marcus Doel (1999, 187), drawing on Deleuze and Gauttari (1977), described this folding: "Rather than moving from one point *in* space-time to another, . . . the required location is actualized through a perspectival and relativized refolding of space-time's virtuality . . . one travels faster than another's space-time." Positionality entails exactly this kind of folding of space/time.

There is a danger, however, of creating a false dualism between continuous spatial structures and wormhole spatiality, as with Latour's (1993) attempt to counterpose topological against continuous space. Thrift (1996) argued, appropriately, for a nonrepresentational theory of mobile practices, in which the lens of analysis is on thought-in-action and contingent possibilities. Doel (1999) similarly viewed the multiple possibilities created by the folding and refolding of space as key to his vision of a poststructuralist geography with no fixed points or

ontologies. Yet while many foldings, or wormholes, are possible, only some are created: a geography that depends not only on local context, but also on broader forces working through and against actors and places. Capitalist globalization has increased the possibilities, but also has durabilities that shape which possibilities are likely to be taken up. A central challenge in grasping the spatial dynamics of globalization is understanding how these forces work, the kinds of wormholes or refoldings that are likely to come into existence, and the places and spaces that are created by and shape further change. This is the case both for those who seek to analyze globalization and those who seek to change it.

Implications for Making Sense of Globalization

Paying attention to positionality can make a difference in how we think about globalization and in strategies for altering its trajectory. I highlight four examples: the ongoing significance of space, the limitations of placed-based strategies for reducing global inequality, transcending the globalization-as-modernization paradigm, and strategies for resistance.

First, attention to positionality suggests that space is not diminishing in importance as a consequence of globalization, nor is it becoming less important than time. There is compelling evidence to suggest that time is moving faster in absolute terms and that a fixed distance can be more easily overcome. But time and space are not absolutes. There is as yet no compelling evidence to suggest that differences in positionality within our current space/time metrics are diminishing. Indeed, there is much anecdotal evidence to the contrary—that differences in access to the means of transportation and communication are increasing disparities in positionality among people and the places where they live. Much has changed. Some have been able to exploit the fluidity of the global economy to dramatically improve their livelihood possibilities,

even if the majority has not, in ways that make noticeable differences in the trajectory of globalization. In addition, the spatial scales at which major differences in positionality exist may be shrinking; there may be greater differences in positionality from one household to the next than before, depending on who has access to telecommunications and who does not. These suggestions can be evaluated, however, only through detailed empirical analysis.

Second, attention to positionality draws attention to how livelihood possibilities depend on positionality, as well as on local, place-bound conditions. The Washington Consensus is based on the premise that getting the local conditions right (implementing structural adjustment) is the key to development and that poverty stems from a lack of local initiative. Gallup, Sachs, and Mellinger (1999) highlighted certain supposedly fixed geographic conditions that trump local initiative, excluding some places from the benefits of globalization, but the emphasis still is on local conditions. Even political economic analyses emphasize local conditions as the key to "holding down the global" (Amin and Thrift 1994). Positionality is too easily pushed aside in such analyses. Uneven development is not simply a consequence of local conditions because the unequal positionality of places may reinforce preexisting inequalities. André Gunder Frank (1967) may have overplayed his hand (Laclau 1971), but we cannot lose sight of the importance of positionality altogether. Positionality can have dramatic policy consequences. If positionality matters, no amount of tinkering with local conditions is sufficient to bring about development. Thus, increased interterritorial competition does not release a tide that lifts all places, but it can result in a "race to the bottom" in which the most desperate places compete on the basis of the superexploitation of workers and the environment, pulling others down with them (Leitner and Sheppard 1998).

Third, attention to positionality calls into question the globalization-as-modernization narrative. The argument that there is a single path to development presumes that posi-

tionality does not matter. Massey (1999a) identified postcolonial theory as an inspiration for arguing in favor of multiple paths and strategies for change, but the sentiment is much broader and stems from recognizing the importance of positionality in general. The Marxists Frank (1967, 1978) and Blaut (1976) came to the same conclusion much earlier in somewhat different ways: that positionality too often means that progress in some places is a cause of stagnation elsewhere. Thus, even if all places adopt the same approach, not all gain from it. It follows that there must be room for different visions of development and the good life and different ways of going about achieving them. The promotion of capitalism in a positionally differentiated world cannot even achieve the stated goals of its proponents—prosperity for all who are willing to work.

Finally, attention to positionality has consequences for developing strategies of resistance, itself an attempt to increase the positionality of resistors of globalization relative to that of its proponents. The arguments of the previous paragraph play an important role in legitimating resistance to neoliberal globalization. Positionality is also important, however, in developing strategies of resistance. The successes of Seattle were a result of the grassroots strategic manipulation of positionality in space/time—unexpectedly bringing novel alliances together at a critical space/time (a meeting of the World Trade Organization (WTO)) and exploiting the local spatiality of downtown Seattle much more effectively than the local police. They also reshaped positionality within the WTO conference, since representatives of protestors were allowed into the conference. This success became hard to replicate, however, because pro-globalization forces also learned to strategically manipulate positionality in space/time, turning the geopolitics of resistance into a shell game. Positionality was re-created both locally, keeping protestors at a distance in Washington, D.C., and Quebec by redefining streets as international spaces and erecting barriers, and globally, by relocating

the 2001 WTO meeting to Qatar. Effective resistance strategies must anticipate such moves, so they can come up with ever more creative and unexpected repositionings to bring protestors face to face again with their opponents. Third, attention to positionality is central to building the transnational activist alliances that are necessary to match the transnational reach of globalization. Effective alliances cannot simply rely just on scale jumping, but require positional acts of identifying specific groups in particular places with whom common ground can be found. Maintaining the effectiveness of such networks requires close attention to positionality: both globally, as new allies are sought, and internally, where attention must be paid to how emergent internal hierarchies within movements threaten to drown their effectiveness in internecine conflict.

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