CENTER FOR
ENVIRONMENTAL POLICY
SCHOOL *of* PUBLIC AFFAIRS

Sustainable Cities and Governance:

What Are the Connections?

Daniel J. Fiorino

Center for Environmental Policy

Working Paper #2

American University

dfiorino@american.edu

Draft as of July 2012. This is a draft submitted for publication and should not be cited or quoted without the permission of the author. Comments on this draft are welcome. This will be published in the *Handbook of Sustainable Cities*, Daniel A. Mazmanian and Hilda Blanco, eds. by Edward Elgar.

Sustainable Cities and Governance: What Are the Connections?

Daniel J. Fiorino

Is a city that cannot govern itself sustainable? The answer in nearly all cases would be that it cannot. A city that fails to meet the core expectations of governance—maintaining order, making and carrying out collective decisions, providing basic services—will not be able to sustain the ecological, social, and economic aspects of the concept of sustainability. In this sense, effective governance describes a set of capacities that make sustainability in its broad dimensions possible. Yet the role of governance in defining and making a transition to a more sustainable society receives limited attention in the literature. It is, to a degree, captured in the social dimension of sustainability, but generally has been defined vaguely and wrapped normatively in issues of participation, equity, and transparency. In *Our Common Future,* seen as a foundational document on the concept, the World Commission on Environment and Development (1987, 63) described sustainability as "promoting citizens' initiatives, empowering people's organizations, and strengthening local democracy." The empirical relationships of these goals with ecological and economic sustainability and the need for effective governance receive only limited attention.

The theme of this chapter is that the concept of sustainability as it has evolved over the last few decades has neglected the crucial role of governance. To be sure, several elements that are associated with effective governance are captured to some degree in the social dimension of sustainability. Values of participation, empowerment, civil rights and liberty, transparency, and equity have been central to the definition and analysis of sustainability. However, discussions of the role of governance in sustainability have been limited in two respects. First, they have been embedded in the social dimension of the concept and not articulated as separate imperatives and

capacities. Second, they have been considered largely from a normative standpoint (as values and characteristics that should be associated with a sustainable society) rather than from a more instrumental and empirical perspective. There is a difference between specifying equity as desirable in a sustainable city and assessing its role in making ecological sustainability possible. Appreciating the instrumental as well as normative contributions of governance to sustainability requires a better understanding of how it is linked with ecological, economic, and social goals.

Two questions are important in thinking about sustainable governance in cities. First, what is sustainable governance in itself and what characteristics are associated with it? Second, what are the relationships between effective governance and the ecological, economic, and social dimensions of sustainability? The first is an example of "within-system" analysis and is one of the core topics of the discipline of political science. The second may be termed a form of "inter-system" sustainability analysis that explores relationships among the dimensions of the concept.

This chapter focuses on the second question. It begins by setting out a systems-based framework for sustainability that identifies governance as a fourth system on a par with the ecological, economic, and social ones. Next is an overview of what research on environmental performance suggests about the relationships between the governance and ecological systems. The third part discusses governance and sustainability in American cities, as a means of exploring particular issues in greater depth. The chapter concludes with discussion of issues for research or practice and reflections on the role of governance in the future of sustainable cities.

This chapter uses the term "sustainability transition" to describe the process and goal of moving from away unsustainable policies, behaviors, and relationships within cities to those that are more sustainable. This reflects a view of sustainability as less an end state or a set of specific

policy, behavioral, and institutional outcomes than "a socially instituted process of adaptive change" that occurs over time at many levels of governance (Kemp, Parto, and Gibson 2005, 13).

A Sustainability Framework: Differentiating Governance as a Fourth System

Before moving to the specific issues associated with governance and sustainability in an urban setting, it is important to set out the framework for this chapter. It draws on a 1997 essay by John Robinson and Jon Tinker that presents the standard elements of sustainability—ecology, economy, and society—as three "interacting, interconnected, and overlapping prime systems." (74) Each system defines a societal imperative (77). The *ecological* imperative is "to remain within planetary biophysical capacity." The *economic* imperative is "to ensure and maintain adequate standards of living for all people." The *social* is "to provide social structures, including systems of governance, that effectively propagate and sustain the values people wish to live by." Each system is essential for collective survival; each affects the others in critical ways. As a matter of collective survival, no system should be allowed to threaten the existence of others. The goal of governance is to sustain each system while maintaining appropriate balance among them. The political process ultimately determines where that balance should lie (Fiorino, 2010).

Three aspects of these "interacting, interconnected, and overlapping" systems should be noted. First, the economic and ecological display complex and contradictory relationships, often to the point of being irreconcilable. After all, the economic system is dynamic and in a process of continual expansion, often geometrically (Victor, 2008). The ecological system, in contrast, exhibits fixed limits that economic and population growth may not exceed, as many local and regional ecosystems attest and expectations about long-term global climate change illustrate. Second, there are normative and empirical aspects to the relationships among these systems, as

suggested above. Advocates of enhanced participation justify it both as a right of citizens and for its asserted positive effects on outcomes and legitimacy (Berry, Portney, and Thomson, 1993; Rydin and Pennington, 2000). Similarly, the case for preserving the rainforest may be argued on the ethics of protecting species from extinction or the economic value such resources provide. Third, the value accorded each system varies temporarily and spatially. Once the global financial crisis occurred and recession took hold in 2008, for example, economic concerns displaced much of the attention previously given to ecological issues, as public opinion on climate change shows.

This chapter proposes a modification in the three-system sustainability framework by differentiating governance as a fourth interacting and overlapping prime system. By embedding governance in the social system, as it has in the past, the sustainability field has failed to appreciate the role of effective, legitimate governance in enabling societies to sustain the other systems and maintain an appropriate balance among them. The governance imperative and thus the scope of the governance system is defined here as the need *to make and carry out decisions that are accepted as legitimate and ensure the survival of the other three systems.* It may be distinguished from the social system, which encompasses such goals as fairness and dignity, access to education and health care, social cohesion and harmony, and durable social institutions, among others. Such goals as political stability, freedom and rights, effective and accountable institutions, and legitimacy are seen within this framework as aspects of the governance system. In Tinker's and Robinson's terms, this formulation removes governance from the scope of the social system and establishes it as a fourth, enabling system.

For this chapter, a useful definition of governance is the Worldwide Governance Indicators (WGI) project of the World Bank, which defines it as "the process by which governments are selected, monitored, and replaced; the capacity of the government to effectively

formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them." Within this definition, six indicators are used: voice and accountability; stability and the absence of violence; government effectiveness; regulatory quality; rule of law; and control of corruption. The measures for each are drawn from a range of sources. The WGI provides a useful definition of governance for this chapter; it has been used in research on the effects of regime type and political institutions on environmental performance nationally. Because few studies examine the effects of governance at a city level, the national research may be used to define a research agenda on city governance.

Performance on at least some of these governance indicators is an obvious requirement for enabling a sustainability transition. Highly unstable societies racked by violence are unlikely to be able to make progress in sustaining any of the other three systems or in maintaining the needed balance among them. As discussed below, the voice and accountability associated with democracies have been linked positively to high levels of environmental performance. There has been some research on the relevance of effective governance, elements of a rule of law, and the effectiveness of government institutions, although not a substantial amount. Much of the national research has focused on the effects of different institutional arrangements within democracies.

An advantage of the sustainability concept is that it applies at multiple governance levels. Indeed, the concept has been defined and analyzed in global, national, regional, corporate, and local/urban settings. The focus here is on the role of governance in sustainable cities. However, research at several levels provides a starting point for considering the relationships among governance characteristics and the ecological, economic, and social dimensions of sustainability.

Research on Governance and Environmental Performance

The bulk of the research relating governance to environmental performance has been done at a national level (Fiorino, 2011). It usually is designed with governance as an explanatory variable and a set of indicators of environmental quality as the dependent variable. One body of research focuses on regime type (as relatively democratic or authoritarian). It concludes generally that more democratic regimes exhibit higher levels of environmental performance than their authoritarian counterparts (e.g., Barrett and Graddy 2000; Farzin and Bond 2006; Li and Reuveny 2006). These findings are attributed to the availability of information, opportunities for protest and mobilization, independence of scientific researchers, and the accountability of leadership in a democracy (for discussions, see Frederiksson and Wollscheid 2007; Neumayer 2002). Higher levels of democracy also are associated with growth in per capita income, which in turn is positively related to environmental performance on many health-based indicators. But the effects of the levels of democracy have been found to be significant independent of income.

Another body of research studies the effects of institutional factors, such as presidential-parliamentary, federalist-unitary, proportional representation, and pluralist-corporatist systems on environmental outputs and outcomes. It is difficult to draw clear and consistent conclusions from this research, because of differences in the dependent variables, the complexity of the interrelationships among institutional factors, and the stage in the policy process in which the environmental effects are observed. Two factors that do appear to have explanatory value in these studies were the electoral rules and the degree of corporatism within a governance system.

Many researchers have found that electoral systems based on proportional representation exhibit higher levels of environmental performance than winner-take-all ones. It appears that proportional representation lowers the barriers for new parties to gain seats and allows legislators from multi-party districts to represent more diverse interests and advocate broader policies than

those from single member districts (examples are Frederiksson and Millimet, 2004; Harrison and Sundstrom, 2010, 16-19). The success of European green parties flows in part from this feature.

More relevant for this chapter is performance of corporatist and neo-corporatist systems relative to their pluralist counterparts. Many studies have found that neo-corporatist systems like Sweden or Germany perform better on several environmental indicators than pluralist ones like the United States or Canada. Scruggs (2003, 123) found that countries with strong, centralized interest groups and consensual policy making exhibit stronger environmental performance than more decentralized and adversarial ones. Several other studies have reached similar conclusions (e.g., Crepaz, 1995; Jahn, 1998; Liefferink, et al., 2009; Ward, 2008). Scruggs attributes higher performance in neo-corporatist countries to the better use of information; higher trust and business engagement that leads to better implementation; and the ability in such systems to link environmental and economic goals in ways that reduce conflict and promote synergy. Liefferink, et al. conclude (92) that "collective action problems inherent in environmental policy can be solved more easily in neo-corporatist 'closed shops' based on trust and long-term reciprocity."

Although these findings do not necessarily transfer to cities, they suggest directions for inquiry. Both the system of representation and the ability to integrate policy across systems could influence a city's capacity to implement a sustainability transition. Other research findings on national governance and its effects on environmental performance could be useful at a city level. Examples are the indicators of governmental effectiveness, regulatory quality, and corruption. One empirical study linked higher levels of environmental performance to a country's stage of "institutional development, with significant roles for private property protection, effectiveness of the legal/judicial system and efficiency of public administration." (Dasgupta, et al. 2001, 173) A

promising area of research on city governance, as suggested below, is to explore the effects of institutional and other factors in promoting a transition to sustainability in varied urban settings.

Governance and American Cities

A growing literature has examined the emergence of a sustainability agenda in American cities and their efforts to undertake a sustainability transition. The topic of governance capacities and styles has drawn a great deal of interest in this literature. This interest has focused more on the process of engaging citizens and the role of citizen participation than it has on the institutional factors discussed above. Because citizen participation and engagement are such a central element of the governance system, however, it is worth considering the arguments and evidence from this literature on the role of citizens and democratic process in a change process.

One of the central debates in the literature on American cities with respect to governance has focused on how "communitarian" a transition to sustainability must and should be (Portney, 2003, 126-133; also see Portney 2005 and 2009). This refers generally to the degree to which citizens should be engaged actively in the process of change. One school of thought views civic engagement as a defining aspect of sustainability; the other asserts that change may and even is most likely to occur as a narrower, technical process focused on policy and behavioral change.

These two governance models for a sustainability transition in cities differ in goals, scope, structure, and normative arguments. From a communitarian perspective, a sustainability transition is a transformational process. It is as much (or more) about changes in individual and community values as it is about policy and behavior. For this transformation to occur, citizens should be actively engaged in defining a vision for the community. They should take part in deliberation and debate about their shared interests as a community and strategies for promoting

those interests. They participate through multiple structures (public meetings, citizen juries, planning and advisory bodies) and processes. The scope of these deliberations is broad; it explicitly incorporates not only ecology and health but broader issues of economic fairness, jobs, housing, transportation, education, and justice. This communitarian view embraces the social aspect as fully as ecological and economic aspects of the sustainability concept.

At the more technical end of the continuum in city governance for sustainability is a narrower view of the scope and processes for change. The transition to sustainability occurs as a more traditional process of policy change, in which policy makers and community leaders decide on a set of measures (e.g., energy management, transportation options, zoning or redevelopment policies) for moving in a new direction. Some degree of citizen participation is needed, if only the gain community and political consent for the policy changes. The goal is to change policies, incentives, behaviors, and outcomes, but not necessarily to create a strong sense of community or transform values. Structures and processes for participation may be limited to such conventional means as public hearings or meetings. The process of change is narrower; it focuses on reducing environmental and health risks, improving air and water quality, or increasing transportation options available in the community. Emphasis is placed on the linkages between economic and ecological rather than the social aspects of sustainability, and community values are less critical.

The literature on sustainability in American cities provides examples of advocacy for both models of governance (Portney 2003 and 2005). Illustrative of the debate is an analysis by Argyeman and Angus (2003). They differentiate the two in what they term the Information-Deficit (ID) and Deliberative and Inclusionary Processes and Procedures (DIPs) models, and they express a clear preference for the latter. In the ID model, the aim is to provide information that will support a process of community change. Although citizens may participate in various

ways, they are much more on the receiving end of the change process. The change process itself is viewed in narrow terms, as focusing on the ecological health of communities. The model fails "to create the kind of transformative policies that are required to move societies toward broadly based sustainability." (346) This model, the authors argue, serves to perpetuate the status quo rather than support a durable transition to sustainability in cities, which is their policy objective.

In contrast, the DIPs model seeks to actively engage the community in a change process. It assumes that "a civic renewal and regeneration of social capital is an essential prerequisite for any sustainable community…" (347) Only when citizens are engaged in creating a vision for the future and examining their values in light of that vision can a durable transition to sustainability occur. The DIPS model elevates the social and governance aspects of sustainability to the level of the ecological and economic aspects. From both normative and instrumental perspectives, it asserts a relationship between governance capacity or practices and a sustainability transition.

Two case studies in a recent collection illustrate the different paths a city may take to becoming more sustainable. Portland, Oregon is widely recognized as being one of the more active cities in the United States in its sustainability programs. Its current status may be seen as the outcome of a long process of demographic, cultural, and institutional change. After being a relatively static city in terms of population and economic growth in the 1950s, the city began a process of economic development and associated population growth in the 1960s. In addition to seeking jobs, "many of those who moved to Portland were attracted by the reputation the city was earning for livability and a high level of environmental awareness." (Slavin and Snyder, 2011, 22) The city adopted many sustainability programs in the 1970s. In the 1980s, advocates "fought for the inclusion of an explicit carrying capacity goal" in the city's planning processes.

Structural factors also supported these changes. Portland is one of the few cities in the country where city council members not only exercise legislative responsibilities but serve as heads of agencies. In 2000, the council member heading the Bureau of Environmental Services created an Office of Sustainable Development. In 2009, the five-year economic development plan set the goal of building "the most sustainable economy in the world." (37) These initiatives "emerged from a long tradition of environmental and planning activism and strong leadership."

A contrast is Milwaukee, Wisconsin's program of sustainable "redevelopment" for the Menomonee Valley, an old, blighted industrial area. This was more of a project-scale (although a large one) effort than a broader process of city-wide change. The Menomonee Valley project was sparked by recognition of "a high likelihood of problems resulting from more than a century of heavy manufacturing and land filling throughout the area." (DeSousa, 2011, 49) Although economics motivated the redevelopment project, the city injected social equity goals by adopting a minimum wage and requiring a "sustainable wage plan summary" from employers. It included stakeholder involvement; sustainability indicators; and a vision that "incorporates family-supporting wages, sound design, ecological restoration, and connections to the community." (64)

In contrast to the Portland experience, however, the scope and depth of the Milwaukee project was narrower, more consistent with a technical model of engagement than the more transformational one. Yet it constituted a formidable process of change that affected all of the sustainability systems in the area. These two cases illustrate the different patterns a sustainability transition may take and the varying degrees of community engagement that may occur over time.

Indeed, research by Eric Zeemering (2009) confirms that the term *sustainability* is used in many ways and may be associated with many initiatives in American cities. He identified three patterns in how local officials viewed sustainability programs. In *aspiring* cities, they stressed

the integration of urban design (e.g., compact design, mass transit) and sustainability initiatives, with less attention to equity and other social goals. In *traditional development* cities, which typically are facing industrial and economic decline, the stress is on business retention and redevelopment, not participation. As the label suggests, *participatory* cities emphasize citizen engagement in development decisions, with a strong neighborhood orientation. "The results clearly show," he concludes, "that the term sustainability is associated with distinct initiatives in each city." (266) The concept is flexible enough to be adapted to local preferences and needs.

As this analysis suggests, the approach taken to sustainability in cities, and the relevance of different models of governance, depends on local values, political culture, and other factors. The Milwaukee project did engage all four of the sustainability systems, but it was focused on a particular area within the city and the redevelopment of an old industrial landscape. Whether this stimulates a longer-term process of a city-wide sustainability transition remains to be seen. The Portland experience reflects a longer-term process of demographic, cultural, and policy change. It is no surprise that Portland usually appears at or near the top in various sustainability rankings. A theme of this chapter is the value of understanding not only the underlying process of change and scope of sustainability initiatives in different cities, but also the role of cultural, institutional, economic, and social factors, along lines of the national-level research that was discussed above.

Much of the research on relationship of governance characteristics to sustainability has focused, whether explicitly or not, on the concept of social capital. In a frequently-cited article, Robert Putnam (1995) defines social capital as the "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit."

The first elaboration of the concept may be found in James Coleman's 1988 essay, "Social Capital in the Creation of Human Capital." He develops it in terms of two streams of

explanations for social action. The first, mainly sociological one, describes actors as "socialized and actions as governed by social norms, rules, and obligations." (S95) The second, coming from economists, is that actors behave independently and are "wholly self-interested." Neither, on its own, offers a sufficient explanation for social action. The first emphasizes context at the expense of defining an "engine" to explain the basis for individual behavior. The second neglects the context defined by the social setting and relationships. Social capital is a way of linking the two.

Social capital may be compared to other forms of capital, such as financial, physical, and human. Like the others, social capital serves a role in facilitating productive activity in society. Social capital differs from the others, however; it "inheres in the relations" between and among actors (98). It facilitates productive activity "in generating trust, in establishing expectations, and in creating and enforcing norms." (97) Higher social capital create obligations and expectations, thereby increasing perceptions of the "trust-worthiness" of other actors; improves capacities for effective information flows; and defines norms accompanied by sanctions that promote action on behalf of collective rather than purely individual interests. Societies tend to under invest in social capital, Coleman argues, because "actors who generate social capital ordinarily capture only a small part of its benefits…" (119). In this sense, social capital exists as a form of a public good that is created largely as a result of other activities in society. As is the case for other kinds of public goods, such as clean air or water or wilderness, government must take a leading role.

A fair degree of evidence suggests that some degree of social capital is necessary to support governance for sustainability. At a national level, a consistent theme of the research and commentary has been that consensus-based political cultures with high trust and institutions for promoting dialogue are suited better to meeting the challenges of sustainability (examples are Lafferty and Meadowcroft, 2000; Janicke, 1997; Weidner, 2002; Liefferink, et al., 2009)

Wallace, 1995; for a caveat, see Poloni-Staudinger 2008). If this is so, as Portney observes, "pursuing sustainable communities can be just as much about building communities of people as it is about achieving sustainable development results or protecting the environment (2003, 128).

The other side of the coin, of course, is how the state of the other three systems may affect governance. The effects of economic failure on governance are documented historically. A growing theme in the sustainability literature, captured in the term *environmental security,* is that competition for scarce resources (such as water), deterioration of the ecological base on which life depends (such as topsoil or tropical forests), and long-term changes in patterns of precipitation (such as drought or flooding due to climate change) may lead to political instability, violence, and other consequences for governance capacities and legitimacy at multiple levels Matthews 2013). Although this aspect of the relationships among the governance and ecological systems is not explored here, it is central to a research agenda on governance and sustainability.

Issues for Research and Practice

This chapter makes several arguments about the role of governance in sustainable cities. One is that governance should be defined as a fourth sustainability sub-system, both generally and in the context of cities. It matters not only as a critical system in itself but in enabling progress in the ecological, economic, and social systems. Second, there is value in drawing lessons from research at multiple levels of governance. That is, the national research may help in analyzing the role of governance in cities. Third, the aim of sustainability studies should be to understand the relationships among the four systems. In this discussion, the central issue is the effects of governance capacities, structures, and processes as they relate to sustainability. This chapter now moves to discussion of research needs and opportunities on the role of governance.

1. Do institutions and structures make a difference? The many studies of the effects of political institutions at the national level have not been matched by research at the city level. Although there are no hard and fast answers to many questions at the national level, several conclusions have been suggested in this chapter. There is evidence that more consensus-oriented political systems having the institutional capacity to integrate across policy sectors may be more effective in adopting and implementing a sustainability agenda. Experience from case studies of cities such as Portland, Oregon suggests variables that warrant empirical study. In Portland, for example, elected members of the city council also serve as the directors of city agencies. Could this fusion of authority contribute to a better capacity for implementing a sustainability agenda?

Other factors to consider at a city level are electoral rules, the form of representation in city councils, governmental structure (e.g., city manager, executive-legislative relationships), the presence and effectiveness of neighborhood organizations, local political cultures and diversity, and the structure of and relationships between administrative agencies, among others. Although many of these factors have been studied in research on the economic and social systems, work on the ecological system has been limited, and assessments of their role in city governance are few.

2. How do the four systems (governance, ecological, economic, and social) interrelate at the city level? The research on national environmental performance suggests general conclusions about the interrelationships among the four sustainability systems. Many of these appear on the surface to be contradictory. Economic growth exacerbates many environmental problems, yet sustainability seems to require a degree of economic affluence if it is to occur. Many of the core aspects of social sustainability, such as access to health care, improved social status of women, and educational opportunities depend on economic development. Effective governance also is linked with economic affluence. Yet the ecological consequences of changes in energy use,

transportation, diets, habitat stress, and consumption press the limits of ecosystems. The analysis of the relationships among the four systems, in particular for identifying policies that maximize positive relationships and minimize conflict among the systems, is a fruitful area for research.

One set of opportunities could come in developing a field of *sustainability policy analysis* and a building capacity for exploring inter-system relationships at different governmental levels (Baehler and Fiorino, 2012). This would establish frameworks and analytical tools for analyzing strategies that reduce conflicts and increase synergies among the four sustainability systems. At least two organizations have proposed elements of a framework (Organization for Economic Co-operation and Development, 2010; National Academy of Sciences 2011). The OECD's *Guidance on Sustainability Impact Assessment* sets out an eight-step framework for identifying issues, defining the scope of analysis, evaluating cross-system effects, and engaging stakeholders. The National Academy of Sciences' *Sustainability at EPA* proposes an "operational framework" for integrating sustainability into agency functions, under the principle that action furthering one of the systems "should, to the extent possible, further the other two." (41) However, the methods for making these complex inter-system linkages and conducting integrated analyses are unclear.

3. *Is transformational change essential for a durable transition to sustainability?* This debate has proceeded along largely normative lines. The premise of the communitarian argument is that an informed process of deliberation and debate will lead citizens and communities to an appreciation of their collective interests. As Portney (2005, 584) notes: "this is an idea that is generally still in search of empirical support." In future debates about sustainable cities, this will and should remain a largely normative issue. The degree to which a sustainability transition is more "communitarian" or "technical" depends on the local political culture, the demographic and economic composition of the city, the attitudes of the business community, citizen involvement,

the quality of leadership, and the shared vision for the future that is established for the city. A process of systematic lesson-sharing, backed by action-oriented social science research, can inform policy makers and sustainability advocates of the effects of citizen engagement strategies.

4. To what extent do higher levels of government determine sustainability at a city level? The literature has shown a growing appreciation of the consequences of multi-level governance in shaping environmental policies. This is particularly important in the United States, where local governments are largely authorized by the states. At times, higher levels of governance may block sustainability initiatives at the city level. An example is the refusal by the New York legislature to allow New York City to assess fees on traffic into core areas of Manhattan in 2004. At other times, higher levels of government may stimulate sustainability initiatives locally. A priority for research on sustainable cities is the effects of multilevel institutions and policies on the ability of local governments to achieve a sustainability transition (Bulkeley and Betsil, 2005).

5. What are the effects of political culture on the ability to undertake a sustainability transition? Because sustainability affects so many aspects of urban lifestyles and behavior, political culture will be more influential than it is for environmental issues alone. Although a sustainability transition does not necessarily involve more heavy-handed government or more bureaucratic structures, as critics often claim, it does involve a willingness to engage in collective action of many kinds and to accept a vision of a city as more than a "growth engine." A sustainability transition, at any level, will require a higher degree of planning, consultation, public-private partnership, and guided growth and development than a purely economic model. A highly individualistic, market-dominated political culture may find a sustainability transition (to the extent that the issue even is on the local agenda) to be challenging, at best. Part of the explanation that countries in Northern Europe (e.g., Norway, Sweden, Finland) consistently rank

highly on the Environmental Performance Index and other such rankings may be a political culture in which a state role in economic relationships is more accepted (Emerson et al., 2010).

Sustainable Governance for Sustainable Cities: Thinking About the Future

The role of effective and legitimate governance in the transition to sustainability warrants more attention in the field. By proposing governance as a fourth system on a level with the other three systems that have traditionally made up the sustainability concept, this chapter has set out a framework for studying governance at multiple levels, especially in cities. The central question for cities (and, for that matter, any level of governance) is whether a transition to sustainability requires different kinds of governance capacities than have been common in the past. Can a "business as usual" governance scenario provide the institutional capacities necessary for meeting the demands of a sustainability transition? Or will new kinds of capacities—institutions, relationships, participatory mechanisms, political cultures—be necessary in the coming decades?

As the other essays in this volume emphasize, sustainability in cities will require profound changes and new capacities of many kinds. Whether in the realm of policy instruments, analytical tools, participation, cross-sector integration, urban systems analysis, infrastructure planning, or many others, business as usual is not a sufficient strategy. The same may be said of governance. Governance for city sustainability will require adjustments in many different arenas.

Even brief reflection on such arguments as Stephen Dovers' (1997) analysis of the demands on policy in a sustainability transition underscores the need for new governance capacities. Dover argues that "sustainability problems are different from those in other policy fields, both in kind and degree." (308) Among the differences are the temporal and spatial scales of sustainability issues; the irreversibility of lost resources, such as species or wetlands; the

connectivity among and the complexity of problems; the urgency and cumulative nature of problems; and the "absolute limits to human activities" posed by stresses on local, regional, and global ecosystems (310-312). Although some of these characteristics apply to most issues, they occur more often with respect to sustainability. "Existing processes," Dover argues, "which have evolved around problems that do not as commonly display these attributes, can be suspected to have limited ability in coping with problems that do." (313)

If sustainability presents distinctive and novel challenges to city governance, as is argued here, then what capacities will be needed to achieve a durable transition? Of the many capacities that could be discussed, this section considers four: connecting and even integrating across the three other systems and among the components within each system; creating the social capital for the collective action needed for a sustainability transition; developing processes and mechanisms for engaging citizens in change; and building the capacity for flexible and adaptive governance.

By definition, sustainability requires that a city maintain a balance among the ecological, economic, and social systems, with governance as a critical enabling system. As a consequence, a core governance capacity of a sustainable city will be that of integrating cross-system policies. In his research on national environmental policy, Martin Janicke (1994, 79) defines policy integration as "institutional dialogue among the relevant actors concerning future dimensions of ecological and economic development." William Lafferty and Eivind Hoven (2003, 1) argue that a core part of the sustainability concept is the "integration of environmental objectives into non-environmental policy sectors." (1) Indeed, the ability to make long-term policy choices within a multi-systems framework may be what defines the more successful cities in the coming decades.

The integration of ecological and economic decision making will be especially important. This was recognized as one of the seven core sustainability principles in *Our Common Future*. A

policy framework for integrating ecological and economic factors also is reflected in the efforts of many cities in as they work with such notions as a *green economy* and *green infrastructure*. Examples are sustainability plans based on clean energy industries and low-impact development. The first seeks to define development strategies based on the manufacturing of clean energy technologies like wind turbines and solar panels and is drawing particular attention in areas that have lost industry in the last few decades. The second is the use of design principles and tools that link stormwater management with natural processes as a way to lower infrastructure costs.

A second set of governance capacities may be captured in the concept of social capital. A major advance in the sustainability literature was the recognition of natural capital on a level with conventional ideas of physical, financial, and human capital. Natural capital is described in a leading book on the subject as "made of resources, living systems, and ecosystems services." (Hawkin, Lovins, and Lovins, 1999, 4; also discussed in Hempel, 2009, 43-45) Like the other forms, natural capital makes a broad range of activities that support human well-being possible. It differs from the others, however, in the existence of inherent limits in natural capital, especially in the "life-supporting services that have no substitutes and currently have no market value." (9) The history of economic development has been one of consuming natural capital (ecosystems, clean air or water, natural resources). In this formulation, the path to a sustainable future lies in preserving this natural capital and valuing it more appropriately than in the past.

It may be time to add the concept of social capital to this formulation of sustainability. If capital may be seen generally as "goods or ideas with which something else may be created or established," social capital should be part of the equation (Ryden and Pennington, 2000, 161). Even if viewed in terms of the more technical, top-down model of change, sustainability requires a capacity for collective action, in terms of defining a vision and being able to carry it out.

Although it is difficult at this stage to support the argument empirically, as Portney and others have pointed out, there is a reasonable basis for hypothesizing that higher levels of social capital may facilitate a sustainability transition at any level of governance. Because of the more limited scale, opportunity for direct contact, and likelihood of shared values at a neighborhood and community, if not a city level, the potential for creating and enhancing social capital may exist.

Research by Putnam suggests that social capital is higher in more homogenous settings. More ethnically diverse societies exhibit characteristics that tend to undermine social capital: more distrust of neighbors; withdrawal from collective life; less civic activity, such as voting or giving to charity; and lower expectations from society. In contrast, in less diverse societies, there is less social distance, leading to "a feeling of common identity, closeness, and shared experiences." (Putnam, 2007, 159) Ethnic diversity is increasing generally, so social capital may decline in the short term. In the medium to long term, it should be possible to create new forms of solidarity and offset such effects "by constructing new, more encompassing identities." (138) This suggests that citizen engagement that leads to transformational change will be a challenge.

A third governance capacity involves mechanisms and processes for citizen participation. Even if a city does not aim for widespread and transformational change along lines of the DIPs model, some degree of citizen engagement is important as part of a sustainability transition. The extent of participation that is achievable and needed will vary by setting. For some cities, the political cultural and institutional setting is likely to require as well as support widespread citizen engagement. For others, a similar level of public engagement and dialogue may be difficult. Still, the collective aspects of sustainability will require expanded and more effective participation.

Much of the recent literature on sustainability has considered mechanisms and processes by which citizens participate in decision making. Embedded in the social aspects of the concept,

the value of participation has been asserted normatively, instrumentally, and often uncritically. A fundamental premise of the sustainability literature is that a vibrant and informed community dialogue enables citizens to realize that a transition to sustainability is in their collective interest. Assuming for the moment the transformational value of such dialogue, will it always lead to an appreciation of sustainability rather than to agreement on a more traditional agenda focused on maximum growth, regardless of evidence on the existence of ecological limits or social inequity?

If a community's underlying values accept the need for growth as an overarching priority, and if the local political culture is skeptical of collective action and committed to markets, then shared values discovered in participatory processes may be hostile to a sustainability transition. This is an outcome that should be acknowledged in thinking about sustainability and governance.

Although citizen engagement and participation have been stressed for their relevance to all governance levels, opportunities at the urban and local scale are perhaps the most promising. The ability to engage in face-to-face interaction, establish recurring relationships that persist over time, and build trust and a shared sense of community (i.e., social capital) may be higher at a city scale than nationally. Portland, for example, is well-known for its high degree of citizen awareness and engagement. Research on participation offers a foundation for understanding the role of citizen engagement. The environmental justice movement in the U.S. provides additional experience from cities (see, for example, the discussion in Agyeman, Bullard, and Evans 2002).

A fourth governance capacity is more difficult to define and even more challenging to build than the first three. Sustainability transitions involve an "explicit appreciation of complexity and uncertainty, likelihood of surprise and need for flexibility and adaptive capacity." (Kemp, Parto, and Gibson 2005, 17) This "flexibility and adaptive capacity" will be a critical aspect of governance in the coming decades. This is due partly to the recent emergence of

the sustainability concept and a lack of experience for applying it in practice. No tested roadmaps to sustainability exist. More importantly, however, are the characteristics of sustainability issues as outlined by Dovers and others. An advantage of a systems-based approach to sustainability is that it provides a framework for analyzing this need for flexibility and adaptive capacity in governance. By definition, systems continually adjust to various internal and external pressures to maintain equilibrium, just as the economic, governance, and social systems must regularly adapt to pressures or shocks of climate change, water scarcity, and other environmental issues.

At the level of sustainable cities, this flexibility and adaptive capacity may be developed in several ways. In general, there will need to be a shift from hierarchical, linear models of policy making to ones based on networks, adaptive management, and sectoral integration. In developing these capacities, the task of creating social capital and developing mechanisms and cultures for citizen engagement and participation will be important. A review of practices in American cities that are recognized as "taking sustainability seriously" (Portney 2003; also see Hempel 2009; Slavin 2011) reveals a range of public-private partnerships, interactions among levels of government, cross-sectoral policy, feedback loops based on collectively-defined sustainability indicators, pilot projects, and many other forms of flexible, adaptive planning and management.

Concluding Thoughts

This chapter has presented a case for thinking about the relationships between effective governance and the ecological, economic, and social dimensions of sustainability. This case is based on a systems framework, with the addition of governance as a fourth, enabling system on a level with the conventional three. It has suggested issues for research and practice that may be applied at a city level, based partly on studies conducted at other governance levels. It also has

argued that the distinctive challenges of a sustainability transition require that cities develop new or enhanced governance capacities. Among these capacities are integrating policy, enhancing social capital, improving participation, and making and implementing choices more adaptively.

A common observation in the literature is that the greatest progress toward sustainability in the United States is occurring at the local, city level than nationally. This is an uneven transition, to be sure, and many barriers to further progress exist. Still, sustainability, at least in the public sector, appears to be an issue in which leadership is coming more from the bottom-up than the top-down. It may be that cities cannot avoid the consequences of declines in systems—ecological, economic, and social—for as long or as easily as higher levels of government. Or perhaps the differences in geographic scale, political culture, and institutions enable cities to move more rapidly. Whatever the explanation, it appears that having effective, innovative, and adaptable governance is a necessary condition for cities seeking a transition to sustainability.

References

Agyeman, Julian and Briony Angus. 2003. "The Role of Civic Environmentalism in the Pursuit of Sustainable Communities." *Journal of Environmental Planning and Management*, 46: 345- 363.

Agyeman, Julian, Robert D. Bullard, and Bob Evans. 2002. "Exploring the Nexus: Bringing Together Sustainability, Environmental Justice and Equity," *Space and Polity*, 6: 77-90.

Baehler, Karen J. and Daniel J. Fiorino. 2012. "Sustainability Policy Analysis: What Is It? What Can It Do for Us?" Paper presented at the Annual Meeting of the American Society for Public Administration, Las Vegas, NV, March 6.

Barrett, S. and K. Graddy. 2000. "Freedom, Growth, and the Environment," *Environment and Development Economics*, 5: 433-456.

Berry, Jeffrey M., Kent E. Portney, and Ken Thomson. 1993. *The Rebirth of Urban Democracy*. Washington, DC: Brookings Institution.

Bulkeley, Harriet and Michele Betsill. 2005. "Rethinking Sustainable Cities: Multilevel Governance and the 'Urban' Politics of Climate Change," *Environmental Politics*, 14: 42-63.

Coleman, James S. 1988. "Social Capital in the Creation of Human Capital." *American Journal of Sociology,* 94: S95-S120.

Crepaz, M.L. 1995. "Exploring National Variations of Air Pollution Levels: Political Institutions and Their Impact on Environmental Policy-Making," *Environmental Politics*, 4: 391-414.

Dasgupta, Susmita, Kirk Hamilton, Kiran D. Pandey, and David Wheeler. 2006. "Environment During Growth: Accounting for Governance and Vulnerability," *World Development*, 34: 1597-1611.

DeSousa, Christopher. 2011. Greening the Industrial District: Transforming Milwaukee's Menomonee Valley from A Blighted Brownfield into a Sustainable Place to Work and Play," in Matthew I. Slavin, ed. *Sustainability in American's Cities: Creating the Green Metropolis.* Washington, DC: Island Press, 45-67.

Dovers, Stephen R. 1997. "Sustainability: Demands on Policy," *Journal of Public Policy*, 16: 303-318.

Emerson, J., D.C. Esty, M.A. Levy, C.H. Kim, V. Mara, A. de Sherbinin, and A. Srebotnjak. 2010. *Environmental Performance Index*. New Haven, CT: Yale Center for Environmental Law and Policy.

Farzin, Y.H. and C.A. Bond. 2006. "Democracy and Environmental Quality," *Journal of Developmental Economics*, 81: 213-235.

Fiorino, Daniel J. 2010. "Sustainability as a Conceptual Focus for Public Administration," *Public Administration Review*, 70: S78-S88.

Fiorino, Daniel J. 2011. "Explaining National Environmental Performance: Approaches, Evidence, and Implications," *Policy Sciences*, 44:367-389.

Frederiksson, Pers G. and D.L. Millimet. 2004. "Electoral Rules and Environmental Policy," *Economics Letters*, 84: 237-244.

Frederiksson, Pers G. and J.R. Wollscheid. 2007. Democratic Institutions versus Autocratic Regimes: The Case of Environmental Policy," *Public Choice*, 130: 381-393.

Harrison, Kathryn and Lisa M. Sundstrom. 2010. *Global Commons, Domestic Decisions: The Comparative Politics of Climate Change*. Cambridge, MA: MIT Press.

Hawken, Paul, Amory Lovins, and L. Hunter Lovins. 1999. *Natural Capitalism: Creating the Next Industrial Revolution*. Boston: Little, Brown.

Hempel, Lamont. 2009. "Conceptual and Analytical Challenges in Building Sustainable Communities," in Daniel A. Mazmanian and Michael E. Kraft, eds. *Toward Sustainable Communities: Transition and Transformations in Environmental Policy,* 2d ed. Washington, DC: CQ Press, 33-62,

Jahn, Detlef. 1998. "Environmental Performance and Policy Regimes: Explaining Variations in 18 OECD Countries," *Policy Sciences*, 31: 107-131.

Janicke, Martin. 1996. "Democracy as a Condition for Environmental Policy Success: The Importance of Non-Institutional Factors," in William M. Lafferty and James Meadowcroft, eds., *Democracy and the Environment: Problems and Prospects*. Cheltenham, UK: Edward Elgar, 71-85.

Janicke, Martin. 1997. "The Political System's Capacity for Environmental Policy," in Martin Janicke and Helmut Weidner, eds., *National Environmental Policies: A Comparative Study of Capacity-Building*. New York: Springer, 1-24.

Kemp, Rene, Saeed Parto, and Robert B. Gibson. 2005. "Governance for Sustainable Development: Moving from Theory to Practice," *International Journal for Sustainable Development*, 8:12-30.

Lafferty, William M. and Eivind Hoven. 2003. "Environmental Policy Integration: Towards an Analytical Framework," *Environmental Politics*, 12: 1-22.

Lafferty, William M. and James Meadowcroft, eds. 2000. *Implementing Sustainable Development: Strategies and Initiatives in High-Consumption Societies.* Oxford, UK: Oxford University Press.

Li, Q. and R. Reuveny. 2006. Democracy and Environmental Degradation," *International Studies Quarterly*, 50: 935-956.

Liefferink, D., B. Arts, J. Kamstra, and J. Ooijevaar. 2009. "Leaders and Laggards in Environmental Policy: A Quantitative Analysis of Domestic Policy Outputs," *Journal of European Public Policy*, 16: 677-700.

Matthews, Richard A. 2013. "Environmental Security," in Norman J. Vig and Michael E. Kraft, eds. *Environmental Policy: New Directions for the 21 Century*, 8th ed. (Washington, DC: CQ Press, 344-367.

National Academy of Sciences (NAS). 2011. *Sustainability at EPA*. Washington, DC: NAS.

Neumayer, Eric. 2002. "Do Democracies Exhibit Stronger Environmental Commitment? A Cross-Country Analysis," *Journal of Peace Research*, 39: 139-164.

Organization for Economic Co-operation and Development (OECD). 2010. *Guidance for Sustainability Impact Assessment*. Paris: OECD.

Poloni-Staudinger, Lori M. 2008. "Are Consensus Democracies More Environmentally Effective?" *Environmental Politics*, 17: 410-430.

Portney, Kent. 2003. *Taking Sustainability Seriously: Economic Development, the Environment, and Quality of Life in American Cities.* Cambridge, MA: MIT Press.

Portney, Kent. 2005. "Civic Engagement and Sustainable Cities in the United States." *Public Administration Review*, 65: 579-591.

Portney, Kent. 2009. "Sustainability in American Cities: A Comprehensive Look at What Cities are Doing and Why," in Daniel A. Mazmanian and Michael E. Kraft, eds. *Toward Sustainable Communities: Transition and Transformations in Environmental Policy*, 2d ed., 227-254.

Putnam, Robert D. 2007. "*E Pluribus Unum*: Diversity and Community in the Twenty-First Century," *Scandinavian Political Studies*, 30: 137-174.

Putnam, Robert D. 1995. "Bowling Alone: American's Declining Social Capital." *Journal of Democracy*, 6: 65-78.

Robinson, John and Jon Tinker. 1997. "Reconciling Ecological, Economic, and Social Imperatives: A New Conceptual Framework," in Ted Schrecker, ed., *Surviving Globalism: The Social and Economic Challenges*. New York: St, Martin's, 71-94.

Rydin, Yvonne and Mark Pennington. 2000. "Public Participation and Local Environmental Planning: The Collective Action Problem and the Role of Social Capital," *Local Environment*, 5: 153-169.

Scruggs, Lyle. 2003. *Sustaining Abundance: Environmental Performance in Industrial Democracies*. Cambridge, UK: Cambridge University Press.

Slavin, Matthew I. 2011. *Sustainability in America's Cities: Creating the Green Metropolis.* Washington, DC: Island Press.

Slavin, Matthew I. and Kent Snyder. "Strategic Climate Action Planning in Portland," in Matthew I. Slavin, ed., *Sustainability in America's Cities: Creating the Green Metropolis*. Washington, DC: Island Press, 21-44.

Victor, Peter A. 2008. *Managing Without Growth: Slower by Design, Not Disaster.* Cheltenham, UK: Edward Elgar.

Wallace, David. 1995. *Environmental Policy and Industrial Innovation: Strategies in Europe, the USA, and Japan.* London: Earthscan.

Ward, Hugh. 2008. "Liberal Democracy and Sustainability," *Environmental Politics*, 17: 386-409.

Weidner, Helmut. 2002. "Capacity Building for Ecological Modernization: Lessons from Cross-National Research," *American Behavioral Scientist*, 45: 1340-1368.

World Commission on Environment and Development. 1987. *Our Common Future*. Oxford, UK: Oxford University Press.

Zeemering, Eric S. 2009. "What Does Sustainability Mean to City Officials?" *Urban Affairs Review*, 45: 247-273.