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Nobel Economic Laureates and the "Performance" of Cities

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1 ABSTRACT

Cities are, according to complexity theorists, emergent patterns that result from how a variety of economic, environmental, political and social forces act out. The collected work of two Nobel Laureates in Economic Sciences – Paul Krugman (2008 winner) and Elinor Ostrom (2009 winner) in relation to the liveability, healthiness, and prosperity of contemporary and future cities is examined. Krugman's "trade theory" focuses attention on the self-organizing result of a polycentric economic structure within urban regions. Ostrom's "on the commons" provides a powerful alternative to public policy and government led participation processes by showing how more efficient, equitable, and responsive such alternative systems are. The paper reviews both the basic arguments of the Nobel Laureates and develops some pragmatic approaches to the use of their thinking regarding the workings of basic economic, environmental, political, and social forces.

2 A "COMPLEX" METAPHOR OF THE CITY

The hope for "cities for everyone" – cities that are liveable, healthy, and prosperous – requires at the initial stages some discussion of two notions: how cities function (their internal dynamics) and how these dynamics perform. Planners – especially those whose practice lies at the intersection of real estate, ICT, and the general planning function – should focus at a minimum on improving the functioning of these internal dynamics. Performance as a general concept is an improvement in a value of some attributes, parameter, or resultant of some temporally dynamic process. The unanswered question, of course, is what are these dynamics and how should they be described, categorized, and eventually modified.

Arguably, foremost amongst these dynamics and resulting performance is the economic dimension. A function that operates simultaneously on at least two scales: the individual and the aggregate. How to capture this dual characterization in a single framework has perplexed both academic and practitioners.

To overcome rather rigid and constrained economic models in common use by planners, complexity theorists (e.g., Prigogine 1967; Bak 1996; Portugali, 2000; Batty 2005) have begun to conceptualize city dynamics as complex systems. Complexity theory brings a new language to the table. The new language is both provocative (sounds good!) and overcomes a set of nagging methodological problems facing planners in their attempt to modify behaviors to achieve societal-desired outcomes. Complexity theory is based on a systems representation of economic, environmental, political, and social forces. What is observed in the aggregate is termed an emergent pattern; things such as average travel time to work, aggregate GDP, mean "sustainable GDP", average "granularity" of the road network, etc. The key to complexity theory is that it provides a mechanism – normally stated as "complex adaptive systems" expressed as either agent-based models or more simple multiscalar hierarchical processes – to link the behavior of individuals to these aggregate patterns. Thus, individual behavior identifiable, measurable, and changeable at the scale of the individual produce patterns at the scale of the aggregate.

While not complexity theorists per se, the two most recent winners of the Nobel Prize for economic sciences – Paul Krugman in 2008 and Elinor Ostrom in 2009 – have significant "complexity thinking" in their work. Krugman's "trade theory" focuses attention on the drivers and forces that result, when applied in the metropolitan context, in polycentric economic structures. Ostrom's "on the commons" focuses attention on the adaptive design and self-organization of institutional arrangements in the provision of services. While their approaches are almost at opposite ends of the "truth-finding" scale (Krugman is arguably portrayed as a popular-economist, Ostrom is arguably portrayed as an experimental-economist), both Laureates focus attention on individual motivations and behavioral processes that ultimately give rise to aggregate emergent patterns, which could be the basis of various indicators of the performance of cities. The intention of this paper is to examine the work of these two recent Nobel Laureates in the context of the contemporary urban/metropolitan condition. What does their work instruct us to think about, what are the practical realities, and what is the guidance imminent. Thus, this is a purely speculative theoretical paper, intended to expose these new ideas and generate alternative mindsets and perspectives.

The paper has a simple structure. In the next two sections, the major works of Krugman and Ostrom are identified, briefly reviewed and illustrated. The penultimate section extracts six talking points, three from each Laureate, about contemporary urban/metropolitan conditions and performance. The final section is both a mini-reflection of the exercise and an attempt to lay down the challenge for future research.

3 PAUL KRUGMAN (NOBEL ECONOMICS LAUREATE, 2008)

Paul Krugman was born February 28, 1953 (so he is now – as of this presentation in May, 2010 – 57 years of age). He grew up on Long Island in New York, received a BA in economics from Yale University in 1974 and a Ph.D. in economics from MIT in 1977. He is currently a professor of economics and international affairs at Princeton and a centenary professor at the London School of Economics. Krugman is also a member of the Council of Foreign Relations, a research associate at the National Bureau of Economic Research, and a member of the Group of Thirty. But perhaps most visibly, he is a regular columnist and blogger for the New York Times and calls his blog "The Conscience of a Liberal".

"The Nobel Prize Committee stated that Krugman's main contribution is his analysis of the impact of economies of scale, combined with the assumption that consumers appreciate diversity, on international trade and on the location of economic activity. The importance of spatial issues in economics has been enhanced by Krugman's ability to popularize the complicated theory with help of easy-to-read books and state-of-the art syntheses … [they state] 'Krugman was beyond doubt the key player in 'placing geographical analysis squarely in the economic mainstream' and in conferring it the central role it now assumes''. The provocative title of his Nobel address is "The Increasing Returns Revolution in Trade and Geography" (http://nobelprize.org/nobel_prizes/economics/laureates/2008/krugman-lecture.html, 44 minutes).

Five key elements of Krugman's oeuvre are examined. These include: (1) the 1991 Journal of Political Economy article that contains the original thinking about the increasing returns process; (2) the 1995 book Self-Organizing Economy that focuses on cities and regions; (3) elements of the "new economic geography"; (4) the original foray into becoming a macro-economic critic; and (5) the continued writings.

3.1 Journal of Political Economy (1991)

Krugman's most cited academic paper (857 citations by early 2009 according to Wikipedia) is an article title "Increasing Returns and Economy Geography" published in the Journal of Political Economy in 1991. The major thesis of this paper is the creation of a formal model that results in the observed pattern of regional divergence of specialized activity. That is, there are observed patterns of concentration of economic activities. The major advance of the formal model is explicit consideration of pecuniary externalities. Interestingly, even in 1991 in a formal academic press, Krugman's first major section is an "intuitive" model, perhaps pre-saging his current career as a columnist and journalist.

Economic modelers rely on a set of assumptions. Here, the location of economic activity is based on the interaction of "economies of scale" and "transportation costs". The eventual pattern of economic activity rests on a few key parameters. Both the intuitive and formal model rest on the simple assumption that economic actors will tend to locate in areas of larger potential consumption and that that part of the consumption is other producers. This is the "circular causation" or "positive feedback" effect of self-organizing systems. Krugman not only considers "backward linkages" common to understanding production systems but also "forward linkages" that argue that it "is more desirable to live and produce near a concentration because it will less expensive to buy the good this central places provides." Thus, demand becomes almost endogenous.

In this model, short and long-term equilibrium rests on only three factors: the share of expenditures of manufactured goods; the elasticity of substitution among products; and the fraction of good shipped that arrive. These factors create the ultimate explanatory variable, real wages (as opposed to nominal wages) defined in terms of both wages and differences in prices.

3.2 The Self-Organizing Economy (1995)

Krugman is even more explicit in The Self-Organizing Economy (1995) which focuses almost entirely on urban and/or metropolitan areas. The rather short (100 pages without the technical appendix) text is divided into two parts: "embryos, earthquakes, and economics" and "self-organization in time and space". In this book, the fundamental methodological perspective is the concept of self-organizing systems. Self-organizing

systems are those, in which seeming randomness and chaos at one scale of resolution evolve into unexpected order at another level of resolution or, put another way, produce "order from instability". The argument is quite simply and clear: the "economy" and "the spatial economy" of urban/metropolitan regions are self-organizing systems. The importance of the book is that this is the first time a [spatial] economist invoked with such force this notion. Simply put, Krugman develops a way to look at what he calls "urban morphogenesis" (p. 49). The notions of order from instability and order from random growth apply.

"Order from instability" relies on three properties of systems: complexity, emergence, and self-organization. Complexity is based partially on the insight that feedback mechanisms have surprising properties, including positive (reinforces the process) and/or negative (dampens the process) feedbacks. Emergence is about how large interacting ensembles – where the original units may be water molecules, neurons, magnetic dipoles, or consumers – exhibit collective behavior that is very different from anything you might have expected from simply scaling up the behavior of the individual units. Self-organizing systems are systems that, even when they start from an almost homogeneous or almost random state, spontaneously form large-scale patterns.

Finally, Krugman argues that complexity and self-organization are value and ideological-free concepts. Neither is necessarily or presumptively a good thing. So, books like Order out of Chaos (Prigogine, Stengers & Toffler, 1984) or Complexity: Life at the Edge of Chaos (Lewin, 1992) are really about method, not about normative prescriptions for a better society. Simply, systems exist, have properties, and contain drivers of change.

3.2.1 Embryos, Earthquakes, and Economics

Part one is focused on how the twin principles of "order from instability" and "order from random growth" can be applied to modern spatial economic theory. The chapters have provocative names: "self-organization in space", "complex landscapes", "an urban mystery", and "principles of self-organization".

Krugman starts the discussion with the traditional VonThunen/Alonso/Mills model and the notion of bid-rent curves and shows how these models do not reflect reality. Central place theory works better as a descriptive device, but lacks economic content. Finally, he shows the wisdom of the Shelling book Micromotives and Macrobehavior (1978) in which "mild preferences about ones neighbor" create "high degrees of segregation at the scale of the metropolis". Simply, local, short-range preferences and actions create large-scale structures. Using an agent-based model based on this notion and two criterion related to centripetal and centrifugal forces, Krugman is able to demonstrate a polycentric urban spatial structure. The second major concept of this first part is "order from random growth". Here, Krugman demonstrates the power of positive feedback and circular causation that result in explanations of known Power-function regularities.

3.2.2 Part Two

Part two is focused on self-organization in time and space. Once again, the chapters have provocative names: "dynamics of self-organizing systems", "temporal self-organization", and "models of spatial self-organization". The two major advances here are the explicit treatment of time, largely ignored in the "comparative statics" nature of much economics research. Krugman creates explicit temporal variations for a number of predominately spatial models.

The second major achievement is that Krugman develops complexity arguments that could improve understanding of the observed realities of such common planning and/or theoretical ideas such as Edge Cities, Central Place Theory, and Zipf/Simon Power Law. The key in terms of most of this is positive feedback and spillovers that create their own emergent property (of growth!).

3.3 New Economic Geography

The results of the Self-Organizing economy gave rise an energetic field of inquiry called the "new economic geography." The major reader in this field is The Spatial Economy (Fujita, Krugman and Venables 2001). In a review in the Oxford Review of Economic Policy, Krugman (1999) solidifies the work that focuses on the notion that one can clearly derive aggregate behavior from individual maximization.

The basic ideas of the new economy geography lie in a complexity theory formulation are other embedded aspects, including notions of how historical accident could shape contemporary geographies, how small and gradual changes in basic parameters that guide individual behavior can produce discontinuous changes in

spatial structure, and the principle idea of circular causation based on the relative strength of both centripetal and centrifugal forces.

3.4 Becoming a Macroeconomics Guru

Krugman is probably better known for his contributions to macroeconomics than for his contributions to the new economic geography, although it is the former that was cited in the awarding of the Nobel Prize. He has examined the trade theory that works at the scale of the firm (and maybe the city) and created a set of macro-economic perspectives. Two major books are discussed below.

What makes Krugman so popular (and perhaps so despised, if you are a fan of Taleb) is that many of the books about macroeconomics are written in a popular style (i.e., actual or perceived avoidance of any real economic content). Throughout the years, Krugman has distinguished between academic economists (who write for other academic economists) and other economists like "policy analysts" and "journalists" who write for a broader public and politicians. Krugman is, somehow, perceived in most quarters as an "intellectually honest" economist, praising both the right and the left.

3.4.1 Peddling Prosperity

In the book Peddling Prosperity (1994) Krugman aims at "nonsense" from both the conservative and liberal camps. But, the main target is supply-side economics and strategic trade relations (as opposed to market and free trade). His basis of argument is orthodox, neoclassical economic analysis; he calls himself a "New Keynesian. Though Krugman is a liberal, he is capable of praising both the right and left. The major point is that economic science still has limited knowledge and that the notion of tradeoffs in economic policy is too often ignored – on the right and on the left.

Krugman then goes on to suggest how policy entrepreneurs have succeeded in convincing politicians that big government with high taxation and excessive regulation hinders growth and that supply-side (tax cuts) would stimulate growth, raise investment, and enable deficit reduction. The empirical part of the book, covers the 70s and 80s refutes all claims and left the US economy with a wider income gap.

3.4.2 Age of Diminished Expectations

Age of Diminished Expectations (1999,3rd ed, 1994, 1990 by the Washington Post) is broader in scope. The major theme is that the US economy has performed poorly (in the 70s and 80s), that better performance is unlikely, and that the public seems oddly complacent. Set against the three major determinants of economic well-being – productivity and income growth, income distribution, and employment, Krugman argues that the US has done well in job creation only. The consequence is that Americans have accepted low growth and income disparity. Moreover, there is little public support for massive policy changes and he doubts the ability of government to produce such changes, even if the political will was there.

Krugman identifies three scenarios: Happy Landing (probability = .20) is a return to the growth of the 50s and 60s; Hard Landing (probability - .25) is a loss of faith by foreign investors in the US economy and a cut-off of capital exacerbating the debt crisis; and Drift (probability - .55) describes sluggish productivity, lower unemployment, and higher inflation combined with growing problems of the underclass leading to the US sinking to "third rank" as an economic power.

3.5 The Continued Writings of a Popular Writer

Krugman's The Accidental Theorist (1999) and Conscience of a Liberal (2007) are accessible compilations of the perspective. He continues to write; the latest books are The Return of the Depression Economics and the Crisis of 2008 (2008) and A Country is Not a Company (2009) as well as a series of story-driven college level textbooks (Krugman and Wells, 2008, 2008, 2009).

4 ELINOR OSTROM (NOBEL ECONOMICS LAUREATE, 2009)

Elinor Ostrom was born August 7, 1933 (so she is now – as of this presentation in May 2010 – 76 years of age). She grew up in southern California, received a BA (with honors) in political science, a MA in 1962, and a Ph.D. in 1965, all from UCLA. She is currently on the faculty of both Indiana University (Arthur F. Bentley Professor of Political Science and Co-Director of the Workshop in Political Theory and Policy Analysis) and Arizona State University (Research Professor and Founding Director of the Center for the

Study of Institutional Diversity). Ostrom is a member of the US National Academy of Sciences and past president of the American Political Science Association, the first women to receive the prestigious Johan Skytte Prize in Political Science in 1999 and the William H. Riker Prize in political science in 2008 in addition to the James Madison Award by the American Political Science Association in 2005and the Risch Civic Engagement Prize from the Jonathan M. Tisch College of Citizenship and Public Service at Tufts University in 2009 (http://en.wikipedia.org/wiki/Elinor_Ostrom).

The Nobel Prize Committee cited Ostrom "for her analysis of economic governance" saying that her work had demonstrated how common property could be successfully managed. Common resources include things such as forests, fisheries, oil fields or grazing lands. The central theme of Ostrom's work is that these resources can be successfully managed by the people who use them; in contrast to the more normal management strategies focused on either state or market. The provocative title of her Nobel address was "Beyond Markets and States: Polycentric Governance of Complex Economic Systems" (viewable at http://nobelprize.org/nobel_prizes/economics/laureates/2009/ostrom-lecture.html).

Ostrom's work is examined at four junctures. These are: (1) early work on identifying the "rational choice model" of inquiry for the study of public goods and common-pool resources; (2) maturation of the concept and measurement resulting in the classic book Governing the Commons (1990); (3) the concept of governance polycentricity and understanding institutional diversity; and (4) continued work, including the IASC organization, which continues the approach to public and common-pool resource evaluation.

4.1 The Study of the Public Goods and Common-Pool Resources

In a series of early papers, Ostrom and her colleagues systematically develop their "institutional analysis and development" (IAD) framework based on principles of rational choice theory. There are two basic questions: what is to be managed, and how to study systems that do the managing.

4.1.1 What is Managed

Ostrom, and others, argues that there are various types of goods and services. Public goods are those "that yield non-subtractable benefits that can be enjoyed jointly by many people who are hard to exclude from obtaining these benefits. Common pool resources are those who benefits are hard to exclude but each person's use of a resource system subtracts units of that resource from a fine amount available. When a fisher harvests a ton of fish, those fish are not available to any other fisherman.

4.1.2 Approaches to Studying Management

In her Nobel interview, Ostrom is very candid in stating that after spending years looking for "the answer" to efficient, equitable public management, there was none. In the absence of a single answer, Ostrom developed an approach – the institutional approach to studying the provision of public and common-pool resources. Ostrom's ultimate contribution is that there are multiple solutions to the provision of public goods and common pool resources and that the problem is getting the institutions right.

Since situations vary, the problem is one of finding the correct, successful, mixture of "public-like" and "private-like" solutions. By successful, Ostrom means institutions that enable individuals to achieve productive outcomes in situations where temptations to free-ride and shirk are ever present. There is a clear call for an assessment of the efficiency and equity of institutional arrangements. And, there is a clear proposition that, while messy, one can assess the relationship between institutional arrangements and performance. The key is in the details.

4.2 Governing the Commons (1990) and Understanding Institutional Diversity (2005)

Ostrom begins Governing the Commons with an explanation of the overarching methodology of her career. Ostrom, quite succinctly, discusses three "influential models" in the study of public policy questions: the tragedy of the commons (Hardin, 1968), the prisoner's dilemma (Dawes, 1973), and the logic of collective action (Olsen, 1965). These metaphors for public policy debate form the basis of most, if not all, organizational theory characterizations of the public arena. Then, she clearly identifies the two extreme policy positions: state and market. At the extreme point "state" the case is made for Leviathan type institutions; at the extreme point "market" the case is made for privatization. While ideologues gather at

extremes, arguing for either a solution based on large, coordinated and regulated government agencies or privatization, the major point is that in practical contemporary terms we have is a set of mixed models.

4.2.1 The Institutional Approach to Study Self-Organization and Self-Governance

Ostrom begins with the notion that individual behaviors are complex, and particularly so in uncertain situations. Next, she argues that there are certain adverse outcomes of independent action (as above). The "general problem" is "solved" by external agents in two well accepted theories: the theory of the firm and the theory of the state. Note the difference in terminology, particular in the first. She substitutes "theory of the firm" for "private market". This is a key point, more fully explained immediately below.

In both scenarios, the emphasis is on how institutions are supplied, how commitments are obtained, and how the actions of agents and subjects are monitored effectively, using in one case the firm, and in the other state, as an organizational device. How a group of principals – a community of citizens – can organize themselves to solve the problems of institutional supply, commitment and monitoring is still a theoretical puzzle."

4.2.2 The IAD Framework

The institutional approach is captured, both conceptually and for measurement purposes in the institutional analysis and development framework. Here, Ostrom and her colleagues developed a representation of the flows. The model "looks like" a normal production function from a classical microeconomics textbook, except that virtually nothing in under the singular control of a single producer. Two important items are outcomes and rules. Ostrom and Ostrom (2004) identify six outcomes: economic efficiency, equity through fiscal equivalence, redistributional equity, accountability, conformance to general morality, and adaptability. Evaluative criteria are simply numerical measurements for these underlying conceptual dimensions. What is important is that outcomes are identified and clearly part of an analytical system in which varying levels of inputs and flowthrough produce outcomes. A representation of this model is shown in Figure 1

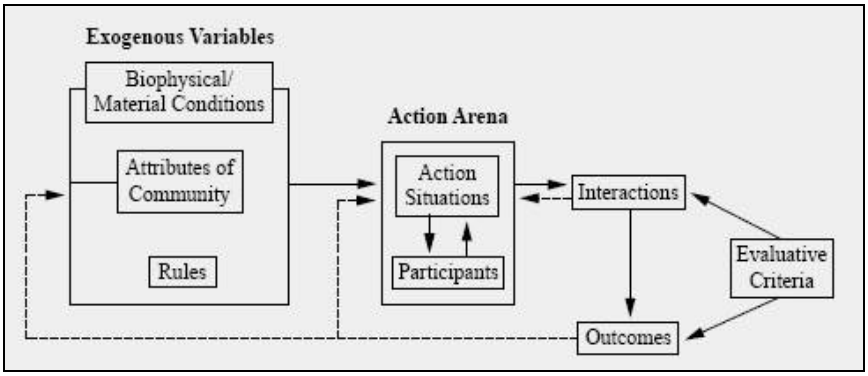

Figure 1: The IAD Framework (Source, Ostrom, 2005, p. 15)

4.2.3 Eight "Design Principles"

Ostrom defined eight "design principles" of stable local common pool resource management. Because they have been reproduced virtually everywhere, I include them here. They are:

- 1. Clearly defined boundaries (effective exclusion of external un-entitled parties);
- 2. Rules regarding the appropriation and provision of common resources are adapted to local conditions;
- 3. Collective-choice arrangements allow most resource appropriators to participate in the decision-making process;
- 4. Effective monitoring by monitors who are part of or accountable to the appropriators;
- 5. There is a scale of graduated sanctions for resource appropriators who violate community rules;
- 6. Mechanisms of conflict resolution are cheap and of easy access;
- 7. The self-determination of the community is recognized by higher-level authorities; and
- 8. In the case of larger common-pool resources: organization in the form of multiple layers of nested enterprises, with small local CPRs at the base level

The key point is that these are not "guidelines" or "blueprints" for developing a self-organizing governance system, but rather principles by which to assess them.

4.3 Polycentricity

The earlier arguments were developed by V. Ostrom (date), who relied on the original insight of Polanyi (1951) who had identified two different methods for the organization of social tasks: directed order (top down!) and spontaneous or polycentric order. V. Ostrom argues that "a spontaneous or polycentric order is one where many elements are capable of making mutual adjustments for ordering their relationships with one another with a general system of rules where each elements acts with independence of other elements" (date, p. 57). From here, it is possible to pose a series of empirically verifiable questions: (1) what is the relationship between the scale of provision and the scale of governance; (2) how do people choose among various governance opportunities within a metropolitan region; and (3) size matters systematically for problems of efficiency, effectiveness, equity and responsiveness.

These questions are formulated as a set of complex relationships and rules. The theory of governance polycentricity is a systems theory framework, more a hierarchical systems theory. Management of hierarchical systems occurs at multiple points; so for example, such systems do not necessarily need to be managed from a top down perspective.

Almost as a testament to her considerable curiosity, Ostrom began work with a series of systems modelers at Arizona State University. Moving from a more qualitative field work approach that characterized her work in natural resources in developing countries, now the task was to try to model – via complexity models – the behaviors of such governance systems. This work is captured, for example, in a series of articles in Ecological Economics and Ecology and Society (Wilson, Low, Costanza and Ostrom 1999; Gibson, Ostrom and Ahn 2000; Anderlies, Janssen and Ostrom 2004; Janssen and Ostrom 2006).

4.4 The International Association for the Study of the Commons (IASC)

The Ostrom "challenge" has been taken up by IASC (http://www.iascp.org), founded in 1989 that aims to understand and improve institutions for the management of resources that are or could be held collectively by communities. Historically focused on developing countries and natural resources, the current focus is on exchange of knowledge, mutual exchange, and the promotion of appropriate institutional design in a widening range of commons including things such as digital commons, intellectual property and copyrights, biodiversity, climate change, and other "urban commons" (van Laerhoven and Ostrom, 2007).

5 WHAT DOES IT MEAN? A DISCUSSION OF THE RELEVANCE OF ABOVE

So, what does all this "theory" mean to the creation of liveable, healthy, and prosperous cities. In this section, limited by space, I offer three major talking points for each of the Nobel Laureates. The first three emanate from the work of Krugman; the last three from Ostrom. Here, I provide a direct tie-back to the introductory remarks regarding cities as complex organisms as well as provide some references to contemporary work for each of the these talking points.

5.1 The Polycentric Internal Spatial Structure of the Metropolitan Region Matters

Most conceptions of the internal structure of metropolitan regions are, for lack of a better phrase, oversimplified. The usual suspects "core-periphery" "center city-other" and even "themed spaces" are poor metaphors for the reality of metropolitan spaces. In such a milieu, both academics and policy entrepreneurs tend to focus on one of these themed spaces as those were the only driving forces of urban development. Thus, we get a focus on "global business districts" that are "in the center" but have none of the characteristics of a "center" except in hyper spaced networks of such places and/or "airport cities" as some new form of urban development. Few of these studies even attempt a relationship between their signification and the three fundamental attributes of economic well-being: productivity, income distribution, and employment.

The real value of the Krugman argument is that metropolitan regions are composed of numerous subcenters, specialized within and functionally different among themselves. All are necessary. They create patterns of trade (the most obvious being between worker and residence). While these employment nodes may contain some housing and vice versa, it is naïve to think of a world of perfect little Howard "town-country" places.

The line of thinking is best reflected by Bogart (2006) and others who are clear in that these sub-centers are functionally specialized and different. Some of these sub-centers – like the central business district – are even further specialization and functionally different (Prosperi, Ozbakir & Erol, 2010).

5.2 Complex Adaptive Systems (Agent-Based, Multiscalar)

If there is a single word phrase that captures much of contemporary urban/metropolitan theorizing, it is "complex adaptive systems". This approach lies at the core of human-ecological conceptualizations (Alberti, 2008); urban/metropolitan economic spatial structures (Batty, 2005), and planning (Innes & Booher, 2010). The key methodological perspective is that there exists "agents" (people, institutions) that act as individuals in a definable way, including aspects of behavior in or control of space. Agent-based models focus on what happens when these agents are allowed to "act out" over time and space. The result is an aggregated pattern, which complexity theorists call a state of emergence.

Moreover, the properties of the emergent pattern may or may not be what would be expected by simple extrapolation of individual actions. Krugman retells the results of Schelling that demonstrate that only very mild preferences for social segregation at the individual level create widely segregated metropolitan spaces. The pattern observable at the higher or larger scale is both dependent (through other forces such as feedbacks) on the individual motivations but also independent (through thinks like non-linear and discontinuous processes). The overall process is multiscalar – behaviors at one level of resolution having observable behaviors at another level of resolution. This point cannot be made strong enough.

Regarding the urban/metropolitan debate, this approach suggests a meta-question: it the debate about individual lives or about the aggregate? This question is often overlooked. What it means for planning is that planning must focus its attention on the behavior of agents: individuals, groups, etc. in an attempt to change behaviors. The patterns that are observed – average GDP – are the result of individual agents acting out their behaviors. The fix must be at the scale of the agent, not at the scale of the aggregate.

5.3 Good Politics, Bad Economics … at the Metropolitan and Local Level

The tendency to base policy (and planning?) on the ideas of "policy entrepreneurs" is seen by Krugman to be almost dangerous. While he uses the phrase "good politics, bad economics" in discussion of national level economic policy, the question here is: does this phrase have meaning at the urban/metropolitan level.

Much of what passes for economic policy at the urban/metropolitan level is copycatting of popular, but unproven, manifestos, normally emanating from the popular press. Witness the craze, for example, about the "creative economy" (e.g., Florida, 2001) or the "pulsar effects" of large institutional or sporting events (ISOCARP, 2002). Simply put, the empirical evidence about the relationship between these "economic policies" and the economic criteria of productivity, income distribution, and employment is scanty, spotty, and may even be regressive (particularly in the case of large-scale publicly financed "games").

5.4 The Polycentric Structure of Metropolitan Governance

Metropolitan governance is a hot issue (e.g., OECD 2001, Feoick 2004, Salet Thornley and Kruekels 2003, Heinelt 2005) particularly outside the US. It represents Ostrom "messiness" and Ostrom "truth".

The new found reality is that the concern about how metropolitan areas are governed is still an open question. What is clear is that these large urbanized settlements are governed not by a government but rather by a nebulous set of institutional actors and relationships. The recent joining of the terms governance with social and/or territorial capital – both hard to pin down concepts – continues an unnerving tendency to "chatter". Under these circumstances, it is not surprising that Salet, Thornley and Kruekels (2003) major conclusion is that there is no best model or framework.

Normative-assertions and story-telling is not enough; empirical relationships need to be verified. Heinelt's story of the "Hannover Miracle" – a joining of public service provision by several levels of government – is a miracle only by proclamation. Collaboration for collaboration's sake (e.g., Innes and Booher, 2010) makes only very limited pragmatic success without observable improvements in the condition of something. Where are the relationships between the institutional structures and Ostrom and Ostroms's six evaluative criteria (economic efficiency, equity through fiscal equivalence, redistributional equity, accountability, conformance to general morality, and adaptability)? A new public economics is needed.

5.5 Performance through Institutional Design

There are two possible intuition pumps here. First, organizational behaviors and institutional arrangements matter. And, second, that this is really a matter of designing complex adaptive systems for individual cases and situations. In either case, the emphasis is on performance.

Europe, in particular, is witnessing the effects of changes in institutional arrangements and organizational behaviors. Due in part to a greater reliance on government interventions (a larger expectation that "government" will fix it), the structure and functions of the EU bureaucracy is the subject of much interest and research. But, the issue is more general than just whining about EU policies and frameworks. The problem is on the ground in metropolitan regions. What are the institutional arrangements in Vienna, or anywhere? Once we get away from economic competitiveness as an object of evaluation (sic), there are few studies that relate such arrangements to more normal primary (Krugman) or primary-plus (Ostrom) criteria.

Second, it is becoming clear that much existing policy frameworks, on the ground, have not yet adopted the complexity driven arguments of systems theory. Copycatting does not work.

The large point is that the institutional analysis approach is useful for the study of contemporary situations, as earlier work on policing has demonstrated. The new "Ostrom challenge" should be the application of her and her colleague's methodology to contemporary urban service delivery.

5.6 It is about the Questions, Not the Rules or There Are No Rules, Only Questions

In her Nobel interview, Ostrom recalls years of frustration in searching for a universal rule or a universal truth! Instead, in the end, she concluded that it is about the questions rather than a set of guidelines of rules. What stands out in the Ostrom oeuvre is a very simple set of elements, all of which must be present. These are: (1) the creation of a conceptual model; (2) a model based on complexity; (3) an empirical approach; (4) concern for outcomes. The IAD framework is a framework for asking questions, finding local truth, and finding interventions that matter in the sense of improving performance.

Consider water. Water is rarely considered as a system; instead we compartmentalize the "water issue" into neat little categories like "water supply for drinking", "pollution and runoff", and "flood control". Today, institutional structures are fragmented (i.e., the Water Directive and the Flood Directive). Would not an institutional approach, developed along the lines of the Ostrom models above, re-focus how we think about water. Such an approach would allow identification of "polycentric" points of governance or "multiple places of responsibility", relating to system functioning. Evaluative criteria follow directly.

6 CONCLUSION

Three arguments have been made and illustrated. First, I briefly argued that contemporary urban/metropolitan communities are better characterized by complexity notions that by simplistic models. Second, that there is something to be learned from an examination of the work of those who have achieved the notoriety of the Nobel Committee – in this case the work of the two most recent winners of the Economics Prize, Paul Krugman and Elinor Ostrom. The quandaries, theoretical premises, and methodologies of these two thinkers have been exposed and reviewed. Finally, I have identified six areas of research and/or planning that could be enhanced by understanding the simply dynamics of the theories of the Nobel Laureates, particularly in relation to the questions of this conference: liveable, healthy, and prosperous communities.

The Nobel Laureates are very different. Despite his earlier de-bunking of "policy entrepreneurs" from grounding in complexity theory, Krugman has become a "policy entrepreneur". He is a prolific writer of "easy to understand" macroeconomic texts. Others in this tradition include Thomas Sowell (http://www.tsowell.com/), the Freakonomic's (http://freakonomicsbook.com/), Fareed Zakaria (http://www.fareedzakaria.com/) and/or Thomas Friedman (http://www.thomaslfriedman.com/). This tradition is akin to the emerging tradition of popular urban writers such as David Brooks, James Kunstler, and historically even Jane Jacobs or popular writers of scientific puzzles such as Nassim Taleb (http://www.fooledbyrandomness.com/) or Leonard Mlodinow (http://www.its.caltech.edu/~len/). [Someone should do a course on these guys/gals. The same argument is made here for the general public.] Yet, Krugman has failed to take his complexity thinking to the macro scale, especially at the national level. His lack of theoretical treatment of these macro systems and his lack of detailed empirical analysis almost

defines him, and leads to criticism. Ostrom, on the other hand, is more of an academic and engaged in the local community. Her thinking over the years has become more complex and more abstract but within the context of improving local conditions. Ostrom's inner strength comes from a fundamental belief in the capacity of individuals and local organizations to find what is best for them. But, in either case, what has been provided here is really only a "chapter 1 understanding" of both; as should be clear, it is the oeuvre that counts, not the individual event. It is probably the same for communities, cities, and regions.

Six research themes were proposed. Simplifying even further and focusing on the scale of the metropolitan region, there are two word phrases that stand out. These are: polycentricity and complex adaptive systems. I, at least, find it interesting that two usages of the term polycentricity have emerged: the spatial and the a-spatial. The spatial is reflected in land use patterns and concentration of specialized and differentiated nodes. This is the view of Anas et al. (1998) and Bogart (2006). The a-spatial is reflected in the web of governance at this territorial level which contains overlapping competencies and interests. This is the world of Salet, Thornley & Kruekels (2003), Innes and Booher (2010), Heinelt (2005) and the OECD (2001). [Parenthetically, the EU uses the word in both meanings. It is clear that an adjective is needed]. The second key idea, complex adaptive systems, is a useful phrase to describe the fundamental process that individual motivations and processes (across the spectrum of economic, environmental, social, and government systems) work and how they are aggregated to produce patterns evident at higher levels of resolution. Change in a level of performance – of economic, environmental, or governmental system – is probably best accomplished by changes at the individual level. Characterization of functions as complex adaptive systems allows points of intervention – and hence governance – to be realized and analyzed.

So, here, we have the basis for action. Thus, it is not a set of universal guidelines for structure; rather, it is a set of universal sets of questions about process. It is about the questions and the ultimate tie to performance of our communities. The new challenge for academics, planners, and policy makers is to improve our thinking about public goods and services, including new ones like "knowledge" (Hess and Ostrom 2007) in a continuing effort to create liveable, healthy and prosperous communities, cities, and regions.

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