Vernacular Law and Complexity Science: Two Guides for Creating Urban Commons

By David Bollier*

In trying to imagine new ways in which citizens may govern themselves in urban settings, the ideas of "Vernacular law" and complexity science can provide indispensible guidance. Both fields study living social phenomena that tend to be ignored if not repressed by the modern state, scientific systems and the bureaucratic policy apparatus. Yet both Vernacular Law and complexity science provide significant insight into how to re-think urban design, governance, resource-management, social innovation and convivial urban life. This essay introduces these two ideas and suggests how they can help create more vital, resilient and stable cities.[1]

The Importance of Vernacular Law

Vernacular law refers to informal or unofficial "law" – the social norms and practices from "the street" that may or may not align with the dictates of formal state law. Vernacular law originates in the semi-private, unofficial zones of society and is a source of moral legitimacy and power in its own right. Legal scholars often use the words "informal," "customary," "grassroots," "indigenous," "common law" and "local" law to refer to social norms that, however tacit or informal, are essential elements of governance. It's important to understand Vernacular law as a kind of "living law." It is not codified in print or formal court rulings. It lives in the evolving practices and folkways of a given community.

My use of the term is inspired by the late Ivan Illich's essays on "Vernacular Values," first published in *CoEvolution Quarterly*, and the basis of his book *Shadow Work* (1981).[2] As a later commentator upon Illich's essays describes it, the "vernacular domain" evokes a "sensibility and rootedness . . . in which local life has been conducted throughout most of history and even today in a significant proportion of subsistence- and communitarian-oriented communities." The vernacular lives in the "places and spaces where people are struggling to achieve regeneration and social restoration against the forces of economic globalization."[3]

Legal scholar Michael Reisman has called this neglected legal realm "microlaw."[4] The seemingly trivial interpersonal relations of ordinary people matter because no body of macro-state law can really be effective without the support of social microlaw. Reisman has noted that when "assessments [of formally organized legal systems] yield discrepancies between what people want and what they can expect to achieve, macrolegal changes may not be effective. Microlegal adjustments may be the necessary instrument of change."[5] He continues: "In everyone's life, microlaw has not only not been superseded by state law but remains . . . the most important and continuous normative experience."

Vernacular law can be seen in the many social protocols that a community or culture develops for determining what is acceptable and unacceptable, what constitutes a sanction, and other rules for negotiating relationships. These social "rules" can be seen in how people queue up in lines (and object when someone tries to cut in), and in all sorts of public behaviors. Vernacular law plays an especially large role in governance for indigenous communities and peasant collectives, farmers' markets and coastal fisheries, and even in business, through "hand-shake deals" and "gentlemen's agreements."

There may be formal state laws that govern such domains, but all have an informal complement – rules that are socially negotiated, based on practical experience, and sometimes tacit. The many micro-judgments that people make and act upon, seen in the aggregate, constitute a powerful body of "law." The fugue of State and Vernacular law may be subtle, but it is a critical process for establishing the legitimacy of state law, its effective implementation, and its future adaptations to new circumstances. In this sense, Vernacular law constitutes a form of "cultural ballast" for any governance regime. It gives stability, self-confidence and legitimacy to the rules that govern people, especially in the absence of formal law.

The vitality of Vernacular law is on vivid display on the Internet, which is a great hosting infrastructure for countless digital commons. As the Internet has exploded in scope and become a pervasive cultural force around the world, so Vernacular law—self-organized, self-policing community governance—has become a default system of law in many spaces. There are, of course, many formal laws enacted by the state and "terms of service" licensing agreements for websites, but the real functionality of virtual communities depends upon

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1 For a more extensive treatment of this topic, see Burns H. Weston and David Bollier, Green Governance: Ecological Survival, Human Rights and the Law of the Commons (New York, NY: Cambridge University Press, 2013).

2 Ivan Illich, Shadow Work (Boston, MA: Marion Boyars, 1981).

3 Trent Schroyer's Beyond Western Economics: Remembering Other Economic Cultures 69 (2009).

4 Michael W. Reisman, **Law in Brief Encounters** (New Haven, CT: Yale University Press, 1999).

5 Reisman, p. 4.

Vernacular law. Indeed, it lies at the heart of the success of the communities that create and maintain open source software, Wikipedia in dozens of languages, 10,000 open access scholarly journals, a variety of open science and open data networks, and hundreds of makerspaces and FabLabs. Such communities confirm the capacities of ordinary people to self-organize themselves and devise effective systems of self-governance, with only the most minimal elements of formal law.

This is not to say that state law or corporate-crafted contracts are unimportant, simply that such bodies of law can be gratuitous or secondary. But instead of seeing law mostly as a form of force – an invocation of power rather than an appeal to justice – Vernacular law looks to "the street" for guidance.

To be sure, there are troubling forms of Vernacular law such as black marketeers, inner-city gangs and Internet pirates. But even these problematic forms of Vernacular law cannot be summarily dismissed, despite their illegality, in the sense that they may point the failures of State Law to meet needs that may be entirely legitimate.[6] When state law fails to meet the needs, wants, and expectations of the peoples whom they are supposed to serve, then—in Reisman's words—"microlegal adjustments [e.g., assertions of Vernacular Law] may be the necessary instrument of change."

Revolutions often occur precisely because State law refuses to make necessary accommodations with Vernacular law. As David R. Johnson has noted, law must be understood as a living social organism, one that "causes its own form of order and persistence" and that rejects dysfunctional components from time to time.[7] As a living social system, Vernacular law does this. State law, by contrast, is more likely to be beholden to abstract logic and historic syllogisms that, over time, fail to evolve with shifting economic, technological, and other realities, not to mention social mores and practices. State Law can too easily become ossified and unresponsive, a captive of special interests that is made to serve narrow, private and short-term goals.

"In biology, if an organism becomes too complicated [or outmoded or corrupted] for its own good," writes Johnson, "it fails to mate and its line dies out—replaced by other systems, with other kinds of order. Because of the particular nature of law's meta-meta-story [that law is of, by, and for the people], its historical rooting of legitimacy in a particular geographic area, we've developed only one legal organism per country. We haven't had a real competition for survival among rule sets."[8] The very fixity of law, Johnson writes, is debilitating because, unlike most biological systems that adapt, "our current legal system lacks the most fundamental mechanism, used by more rapidly replicating and adapting biological organisms, to keep undesirable levels of complication under control."[9] As an abstract system unto itself, state law tends to become more complicated, outmoded and corrupted over time.

Hence the need to pay attention to Vernacular law, which may also be seen through the lens of *custom*. In her study of the history of property law, Yale law professor Carol Rose notes that custom is "a medium through which a seemingly 'unorganized' public may organize itself and act, and in a sense even 'speak' with the force of law. Over time, communities may develop strong emotional attachments to particular places and staging particular events in those places . . ."[10]. Medieval courts were known to elevate custom over other claims, as when they upheld the right of commoners to stage maypole dance celebrations on the medieval manor grounds even after they had been expelled from tenancy.

Courts have generally been hostile toward claims of traditional rights (or rights based on Vernacular law) because, as one court put it, they are "forms of community unknown in this state."[11] As Rose writes, citing *Delaplace v. Crenshaw & Fisher* (1860),[12] "a claim based on custom would permit a 'comparatively. . . few individuals' to make a law binding on the public at large, contrary to the rights of the people to be bound only by laws passed by their own 'proper representatives.' Indeed, if the customary acts of an unorganized community could vest some form of property rights in that community, then custom could displace orderly government."[13]

Courts have been uneasy with the idea of informal communities as a source of law because they are not formally organized or sanctioned by the state, and courts are, generally, themselves creatures of the state. But, as Rose notes, this is precisely why such law is so compelling and authoritative a substitute for government-made law; it reflects the people's will in direct, unmediated ways:

> It was a commonplace among British jurisprudes that a general custom, the "custom of the country," is none other than the common law itself. Looked at from this perspective, custom is the means by which an otherwise unorganized public can order its affairs, and even do so authoritatively.

Custom thus suggests a route by which a "commons" may be managed—a means different from ownership either by individuals or by organized governments. The intriguing aspect of customary rights is that they vest property rights in groups that are indefinite and

6 Eduardo Moisés Peñlver and Sonia K. Katyal, **Property Outlaws: How Squatters, Pirates and Protesters Improve the Law of Ownership** (New Haven, CT: Yale University Press, 2010).
8 David R. Johnson, **The Life of the Law Online**, 11 First Monday 8, No. (Feb. 6, 2006), **available at** http:/www.ucmp.berkeley.edu/cambrian/cambrian.php.
9 Johnson.
10 Johnson.
10 Carol M. Rose, *Comedy of the Commons: Custom, Commerce and Inherently Public Property*, *in* Carol M. Rose, Property and Persuasion: Essays on the History, Theory and Rhetoric of Ownership 134 (1994).
11 As quoted in Rose, **supra** note 400, at 157. Rose comments: "Certainly this remark reflected the general American hostility to the feudal and manorial basis of customary claims. But it also focused precisely on the informal character of the 'community' claiming the right; the remark suggested that if a community were going to make claims in a corporate capacity, then the residents would have to organize themselves in a way legally authorized by the state." **Id.** at 123-24.
12 56 Va. (15 Gratt.) 457 (1860).
13 **Id.** at 124.

informal yet nevertheless capable of self-management. Custom can be the medium through which such an informal group acts; indeed the community claiming customary rights was in some senses not an 'unorganized' public at all, even if it was not a formal government either.[1]

This sentiment – that the commons can be generative, self-managing and reflective of a broad social consensus – is what animates a growing movement to treat the "city as a commons." This conceptualization provides "a framework and set of tools to open up the possibility of more inclusive and equitable forms of 'city-making,'" write Sheila R. Foster and Christian Iaione. "The commons has the potential to highlight the question of how cities govern or manage resources to which city inhabitants can lay claim to as common goods, without privatizing them or exercising monopolistic public regulatory control over them."[2]

But what is the general process by which commons can be deliberately created and developed? The principles of complexity sciences, which study the deep dynamics of living systems, shed a great deal of light on this question.

Complex Adaptive Systems as Agents of Self-Organized Commons

While there is of course an important role for traditional "top-down" initiatives by government, "bottom-up" or grassroots-driven approaches hold great promise in our hyper-networked age, especially in building more inclusive, cross-sectoral cooperative regimes. This is not just a political opinion. Profound discoveries in the evolutionary sciences and the rise of complexity science over the past generation validate the power of bottom-up, self-actualizing forms of social organization and governance. Extensive empirical research shows that some of the most robust, stable forms of governance are distributed, self-organized, and collaborative. These scientific fields point to some very different frameworks for unleashing human agency, stimulating cooperation, and the organizing governance in networked environments – key structural challenges in the modern city.

Historically, the worldview that has prevailed for centuries sees humanity as separate from Nature, and sees the world as fairly static and mechanical. With enough scientific study, knowable causes can be identified to produce measurable effects in linear patterns. Hence the emphasis among scientists, business and governments on improving the rigor of instruments and empirical analysis as a way to identify cause and effort more clearly and then regulate and control isolated elements. This is an apt description of the bureaucratic project – to assemble objective expertise that can devise more reliable (usually bureaucratic) systems for achieving desired results.

Conventional forms of governance presume that they can reliably identify and control relevant boundaries, such as jurisdictional borders, and complex, distributed forces. But a terrestrial-based system of governance is not very capable of taking account of the transnational and mobile character of, say, the atmosphere, oceans, fish and wildlife. Nature does not respect political boundaries, and increasingly, neither do human populations. International treaty organizations and United Nations bodies may attempt to compensate for this failure by working in transnational fields, but their top-down governance structures tend to be brittle, inflexible and slow. They generally choose *not* to adapt and co-evolve because of the political and technical complexity. Indeed, politicians often shut down or punish vital feedback loops that could provide valuable information about the actual state of the environment, the efficacy of governance, and attractive adaptations.

Complexity science has opened the door to some very different frameworks for understanding human and ecological phenomena, and thus improving governance. The field draws upon the lessons of evolution, chemistry, and biology to identify fundamental principles governing what it calls "complex adaptive systems," which include such living phenomena as the brain, cells, ant colonies, the biosphere, the stock market, and Internet communities. Much of the pioneering work in complexity sciences has emerged from the Santa Fe Institute, a theoretical research institute that blends elements of physics, biology, chemistry, economics, mathematics, and the social sciences.[3] It turns out that remarkable parallels can be traced between the behaviors of living natural, physical systems ("Nature") and the social and economic systems that societies have invented ("civilization").

By the lights of complexity science, stable, successful systems cannot be constructed in advance by having brilliant minds devise sophisticated blueprints – the model of God as the absent watchmaker. Rather, successful systems must evolve organically through the self-organized, free interplay of adaptive agents which follow simple principles at the local level. No definitive big-picture knowledge or teleological goals can be known at the outset. Instead of presuming that an *a priori,* comprehensive design system should be followed to produce the best outcomes, complexity theory takes its cues from biophysical evolution and asserts that the best results will arise if intelligent, living agents are allowed to evolve over time toward optimum outcomes in supportive environments. The schemas or agents that survive and thrive will be the ones capable of prevailing against competitors and reproducing; less capable agents will be shunted to niches or die, according to principles of natural selection.

1 Id.

2 Sheila R. Foster and Christian Iaione, "The City as a Commons," **Yale Law & Policy Review** [add rest of citation]. See also Jose Ramos, "The City as Commons: A Policy Reader," July 2016, available at https://www.academia.edu/27143172/The_City_as_Commons_a_Policy_Reader.

3 As the Wikipedia entry for the Santa Fe Institute notes: "Recent research has included studies of the processes leading to the emergence of early life, evolutionary computation, metabolic and ecological scaling laws, the fundamental properties of cities, the evolutionary diversification of viral strains, the interactions and conflicts of primate social groups, the history of languages, the structure and dynamics of species interactions including food webs, the dynamics of financial markets, and the emergence of hierarchy and cooperation in the human species, and biological and technological innovation." *See* https://en.wikipedia.org/wiki/Santa_Fe_Institute.

Microbes, ants, humans, and diverse other organisms exhibit characteristics of complex adaptive systems. Each is nested within larger complex systems that are dynamic and constantly shifting; and yet each flourishes by embodying some highly predictive theories, as distilled in schema that are useful in exploring resources and regularities in a particular environment (the "fitness landscape"). The species with the most adaptive schema (e.g., DNA or culture) and the most refined feedback loops will be better equipped to learn from its environment and thus adapt, evolve, and grow. Evolutionary scientists increasingly believe that natural selection manifests itself more at the "group level" than through individual organisms.

These insights suggest that human communities can evolve into higher, more complex forms of organization without the directive control of a central sovereign or bureaucracy. Given a sufficiently hospitable fitness landscape, *self-organization* based on local circumstances can occur. Just as biological and chemical systems exhibit autocatalytic features that generate "order for free," so human communities have inborn capacities to create stable order. Indeed, this is one of the key insights of Nobel laureate Elinor Ostrom's empirical research of natural resource commons around the world. Countless Internet communities on the Internet also constitute a kind of existence-proof of our capacities for self-organization. Commons are fully capable of generating robust, flexible, and durable forms of management because their systems arise organically from the governed themselves in ways that are mindful of the particular resource, local conditions and cultural norms.

The 20th century mind may be convinced that governance and organization must be based on uniform, top-down expertise and command. It may see the system as a clockwork machine of modular, interchangeable parts, as legislation and regulation often seem to assume – but living systems tend to work in all sorts of unpredictable, creative and recalcitrant ways. The lessons of evolutionary sciences, complexity science and commons are how to craft governance that fully recognizes the *aliveness* of human subjects and the Earth. Complexity science shows us that new modes of bottom-up, diversified, locally appropriate governance are not just feasible, but already pervasive in functioning commons around the world.[4] Vernacular law is the expression of such communities: decentralized agents working in tandem with particular histories, traditions and local circumstances.

Complexity and evolutionary sciences confirm that the most efficient and flexible systems of governance will respect the natural proclivities of "lower-order" governance units in a large, complex system. The quest to impose coercive control from a centralized governance body, without the active participation and consent of the governed at the relevant scale, is ultimately futile. Subsidiarity matters. Complex, higher levels of organization are sustainable only if they take account of the inherent needs and dynamics of their constituent sub-systems and "members" at all scales.

This analysis leads directly to the door of the commons. Commons are based on the principles of bottom-up self-organization, the freedom of collective agency, polycentrism (multiple loci of governance) and subsidiarity (management at the lowest feasible level). Vital collaboration and innovation can emerge only if the governed at the most distributed scales are accorded basic rights of autonomy, human dignity, and intelligent agency. The creative agency and internalized norms of commoners functions as a kind of stabilizing flywheel and innovative force in governance. Governance is transformed. It is not simply a matter of political leaders, state law and credentialed experts imposing their supposedly superior knowledge and will. It is about providing sufficient open spaces and assistance to citizen-commoners to build their own city, in ways that are directly satisfying and practical to them.

What results through this process is a higher level of organization known as *emergence*. "Living systems always seem to emerge from the bottom up, from a population of much simpler systems," writes science journalist M. Mitchell Waldrop.[5] A mix of proteins, DNA, and other biomolecules coevolved to produce a cell. Neurons in the brain come together to produce cognition, emotions, and consciousness. A collection of ants self-organize themselves into a complex ant colony.

"In the simplest terms," complexity author Steven Johnson write, complex systems "solve problems by drawing on masses of relatively stupid elements, rather than a single, intelligent 'executive branch.' They are bottom-up systems, not top-down. They get their smarts from below."[6] Johnson continues: "In these systems, agents residing on one scale start producing behavior that lies one scale above them: ants create colonies, urbanites create neighborhoods; simple pattern-recognition software learns how to recommend new books. The movement from low-level rules to higher-level sophistication is what we call emergence."[7]

The agents within any complex adaptive system do not deliberately plan or create a higher, more sophisticated level of social organization; they are motivated chiefly by local circumstances and knowledge. And yet, when the micro-behaviors of agents relying on Vernacular law reach a critical stage of interconnection and intensity, they actualize new flows of energy and vision. An *emergent new system* arises in an almost mysterious fashion.

These are some of the lessons that mayors, city governments, urban planners and citizens should begin to absorb as they contemplate how to manage and improve cities in the 21st Century. As electronic networks become ubiquitous, the dynamics of complexity science

4 David Bollier and Silke Helfrich, editors, **Patterns of Commoning** (Amherst, MA: Off the Common Press, 2015), available at http:/www.patternsofcommoning.org.

5 M. Mitchell Waldrop, **Complexity: The Emerging Science at the Edge of Ordert and Chaos** (New York, NY: Simon & Schuster, 1992), p. 278.
20 Steven Johnson, Emergence: The Connected Lives of Ants, Brains, Cities and Software (New York, NY: Scribner, 2001), p. 18.
7 Ibid.

and Vernacular law are becoming more relevant than ever.[1] The question is, Can traditional city bureaucracies and politicians find to imagination and support to craft the new structures to enable cities to function as commons? Will they work with citizens to leverage the fantastic reservoirs of creativity, energy and responsibility that ordinary people are willing to contribute to improving their cities, given the proper enabling structures? These are key challenges facing cities around the world in coming years.

1 David Bollier, "The City as a Platform: How Digital Networks are Changing urban Life and Governance," (Washington, D.C.: The Aspen Institute, 2016), available at http:/csreports.aspeninstitute.org/documents/CityAsPlatform.pdf.