

# Regionalism and the New Science

*by Daniel Kemmis*

One long-term but potent way to advance the cause of regionalism would be to connect it as securely as possible to the new science of complexity. This may seem at first blush a little beside the point, given all the immediate, very difficult practical issues surrounding regionalism. But if we remember how closely entwined the political thought of America's founders was with the science of their day, this idea may not seem quite so farfetched.

In fact, the science of the Enlightenment explains a great deal about the context within which regionalism now arises. Newtonian physics was the science of the nation-state. The drafters of our Constitution were forever writing about things like billiard balls, because they were so fascinated with the strict cause-and-effect relationships they saw in the world all around them, and which they sought to import into the machinery of the government they were creating. Because of its high degree of predictability, which lent itself to an equally high degree of control, Newtonian physics was destined to be the science of the Machine Age, and of those machine-like governments which characterized that age.

As the 20th century progressed, the radical predictability of Newtonian physics began to be assaulted by the equally radical unpredictability of quantum physics. While there remained, of course, a vast range of highly predictable phenomena, much of the universe now had to be understood as inherently unpredictable. Out of

this learning grew chaos theory, and then complexity theory. In a nutshell, what complexity theory tells us is that, from situations which appear to be utterly chaotic, order is constantly emerging—not on our terms, but on its own. Of all these “emergent phenomena” in the world, the most compelling is that of life itself, and the constant unfolding of life into new patterns. So, while Newtonian physics is the ideal science of the mechanical, complexity theory is the science of the organic. Which brings us, finally, to regionalism.

Regionalism is an utterly organic phenomenon. It is never possible to tell a place that it is a region; either it is a region inherently, or it is not a region at all. As a result, regionalism stands in stark contrast and challenge to the command-and-control structures we have placed on the landscape, structures like state and county boundaries by which we attempt to tell places what they are and are not part of.

So what might we start to learn if we let the new science be a more explicit guide to the unfolding theory and practice of regionalism? One phenomenon that we would probably become interested in (and with luck find a better name for) is what I will call “fractal federalism.” Fractals are a key ingredient of complexity theory. This is the phenomenon of “patterns within patterns within patterns” which, once we become attuned to them, we see everywhere in the universe. Look on the surface of a sand dune: you will see small sand dunes mak-

ing up that surface, and even tinier dunes on the surface of the small dunes. Notice how often spirals appear in nature, from spiral nebulae to hurricanes to your draining bathtub. Complexity theory says that these forms play back and forth on one another—that what happens at a large scale is related to what happens at a much smaller scale, but not in a Newtonian way. Rather, they influence one another through a process the complexity theorists call “emergence,” where new forms suddenly begin to emerge, often at several different scales at once, the way crystals emerge in a supersaturated solution.

Something very much like this could be used to describe how organic forms are suddenly emerging, just in the last decade or two, at every level of governance. Globalism is utterly organic, in the sense that the earth itself is an organism. But during the same decades that we have become so sharply aware of the organic interconnectedness of earth systems—whether ecological, economic, or cybernetic—we have also begun to inhabit layers and layers of other organic forms. Continentalism is now a fact of life. It is not going to disappear, and neither is bioregionalism, or city-regionalism, or a steadily expanding emphasis on neighborhoods. At every level, in true fractal form, we are witnessing the emergence of organic forms of governance.

If complexity theory can help us recognize this multi-layered emergence, could it also help us to understand how these organic forms might best be related to each other? When complexity theory addresses organic forms, it brings new insights into the crucial role of adaptiveness in the life of those forms. What it discovers, time and time again, is that the most adaptive forms, or groups of forms, are those which learn how to operate at what the complexity theorists call “the edge of chaos.” What they mean is the line between a system so thor-

oughly ordered that it no longer can claim the vital advantages of chaos, and one so chaotic that it foregoes the competitive advantages of order. The scientists who study these phenomena have seen the patterns often enough to be convinced that they are not only of biological significance. As Stuart Kaufman puts it in *At Home in the Universe*:

For what can the teeming molecules that hustled themselves into self-reproducing metabolism, the cells coordinating their behaviors to form multicelled organisms, the ecosystems, and even economic and political systems have in common? The wonderful possibility...is that on many fronts, life evolves toward a regime that is poised between order and chaos.<sup>1</sup>

Having looked that far beyond his own scientific horizons, and being convinced that “some form of global civilization will emerge,”<sup>2</sup> Kaufmann asks the question which brings complexity theory to the edge of the new regionalism. “I wonder,” he writes, “if the political structures we have created will continue to serve us.”<sup>3</sup> His best guess about the most viable structure: “a federal system with partitioning into local semiautonomous regions.”<sup>4</sup>

Why would that type of structure have the adaptability that is so often found “at the edge of chaos?” First, because regions, at any scale, are themselves like a life form, which is what we mean by calling them organic. It is this which sets them apart from more artificially-delineated jurisdictions. So by paying attention to regions—by giving them authority, giving them “running room,” we put our money where the greatest vitality, the greatest inherent adaptive power exists. Then, if we picture these vital organic jurisdictions being clustered in true federations, we multiply the viability by at once respecting the autonomy of each organism, while capturing synergy in the loose-jointed, experimental, networking way at which genuine federations excel.

If this picture holds, we would expect to see metropolitan regions organize themselves as federations, where the central city and the suburbs each have a seat at the table, each bringing its own autonomous sovereignty into the federation. What will not work, because it is *not consistent with genuine federalism*, is the ironclad imposition of one-person, one-vote rules of representation on the governing structure of the federation. Intrinsic to the idea of federalism is that it is real, organic entities—neighborhoods, communities, regions, continents—that are federated. And since they cannot be told in advance what size they are or shape they are to take, they cannot be reduced to equal-sized representative districts, without abandoning the inherent vitality of the federation itself.

The second thing to notice about this emerging federalism is its fractal nature. If central city and suburbs (and perhaps the surrounding rural communities) federate into a region, we may also see the central city itself becoming something much more like a federation of neighborhoods. At a larger scale, we might see separate metropolitan regions like Portland, Oregon, Seattle, Washington, and Vancouver, British Columbia, federating into a subcontinental region like “Cascadia,” or we might see all the Great Lakes city-regions federating into their own subcontinental (and transnational) region. The synergies inherent in such organic subcontinental regions could be ignored and overlooked in the heyday of the nation-state, but in the fierce new competitiveness of the global order, such natural connections must and will

be realized regardless of the artificial boundaries that stand in their way.

Indeed, at the global scale itself, we should also expect the emergence of a genuinely federal form of governance. It will not be a federation of nations, which are increasingly irrelevant to this emergent order, but a federation of autonomous continents, each of which will itself operate as a federation of organic sovereigns. So, from the level of the neighborhood to that of the earth itself, what is implicit in the new regionalism is a fractal layering of federations—federations within federations within federations, all loosely enough organized to allow for the vital interplay of a little chaos across their borders, while at the same time capturing their internal synergies in the way best calculated to advance their own adaptiveness. ■

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## Notes

1. Kaufman, Stewart, *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity*. (New York: Oxford University Press), p. 26.
2. *Ibid.*, p. 298.
3. *Ibid.*
4. *Ibid.*, p. 271.