

**UCLA**

**American Indian Culture and Research Journal**

**Title**

Indian Gaming, Tribal Sovereignty, and American Indian Tribes as Complex Adaptive Systems

**Permalink**

<https://escholarship.org/uc/item/8fh7053b>

**Journal**

American Indian Culture and Research Journal , 25(3)

**ISSN**

0161-6463

**Author**

Peroff, Nicholas C.

**Publication Date**

2001-06-01

**DOI**

10.17953

**Copyright Information**

This work is made available under the terms of a Creative Commons Attribution-NonCommercial License, available at <https://creativecommons.org/licenses/by-nc/4.0/>

Peer reviewed

# Indian Gaming, Tribal Sovereignty, and American Indian Tribes as Complex Adaptive Systems

**NICHOLAS C. PEROFF**

---

---

This paper introduces complexity theory as a new conceptual approach to research in American Indian studies and, specifically, to gaming in Indian Country. Casinos may look like a good thing for Indian reservations. They can support economic development, tribal web pages, and the revitalization of tribal languages, arts, and community organizations. Less discussed, however, is the fact that a casino can also spawn major and irreversible changes in tribal communities. It can change the physical boundaries of a reservation through the acquisition of land and alter the membership of a tribe by redefining tribal roles for the purposes of distributing gaming receipts. An initial look at tribal responses to the 1988 Indian Gaming Regulatory Act (IGRA) through the prism of complexity theory suggests that Indian gaming holds within it the potential to both strengthen and weaken American Indian tribes and tribal sovereignty.

## THE INDIAN GAMING REGULATORY ACT<sup>1</sup>

The earliest stages in the development of profit-making Indian tribal gaming in the United States began in the 1970s when tribes in Florida, Connecticut, Wisconsin, and California first opened low-stakes bingo halls on their reservations and then gradually expanded their gaming enterprises. When the tribes began to offer higher stakes, stay open longer, and use paid workers rather than volunteers, they frequently came into conflict with adjacent state and local governments. When state officials charged the Indians with violating the law, tribal leaders responded that they were exercising their

Nicholas C. Peroff is an associate professor of public administration at the University of Missouri, Kansas City. He is engaged in the development and application of complexity theory in American Indian policy analysis and is writing a second book on the Menominee Indian tribe of Wisconsin.

sovereignty and that state laws did not apply to their reservations. Several states threatened to close gaming operations and, through the 1980s, states and tribes fought inconclusively in the courts over which had the legal authority to regulate tribal gambling (for example, *Seminole Tribe v. Butterworth* 491 F. Supp. 1015, and *California v. Cabazon Band of Mission Indians et al.* 480 U.S. 202, 107 S. Ct 1083).

In an effort to provide a regulatory framework for Indian gaming, the US Congress passed the Indian Gaming Regulatory Act in 1988. IGRA provides a statutory basis for the regulation of Indian gaming and states that revenues derived from gaming can only be used for purposes expressed in the act. These include: (1) funding tribal government operations; (2) providing for the general welfare of the tribe; (3) promoting economic development; (4) donating to charitable organizations; and (5) funding local government agencies.

### OBSERVATIONS AND EXPECTATIONS ABOUT INDIAN GAMING

When IGRA was enacted in 1988, Indian gaming was a \$500 million business. Today, gross revenues in the Indian gaming industry exceed \$9.6 billion. Of the 558 federally recognized tribes in the United States, about one-third, or 195 tribes, run 309 gaming operations in twenty-eight states.<sup>2</sup> Gaming revenues varied tremendously from tribe to tribe. While fifteen tribal gaming operations account for about 44 percent of total Indian gaming revenue, nearly one-third of currently operating tribal gaming businesses makes less than \$3 million per year.<sup>3</sup>

The National Indian Gaming Association (NIGA) is a nonprofit organization established in 1985 by tribes engaged in gaming. Its membership is composed of 168 tribes and ninety-nine nonvoting associate or corporate members representing tribes, organizations, and businesses involved in Indian gaming throughout the United States.<sup>4</sup> The common commitment and purpose of NIGA "is to protect and preserve the general welfare of tribes striving for self-sufficiency through gaming enterprises in Indian Country."<sup>5</sup>

NIGA's optimistic view of Indian gaming may be somewhat idealized and superficial; nevertheless, it is well-expressed and instructive. "Today, gaming has replaced the buffalo as the mechanism used by American Indian people for survival . . . [and is] . . . the first—and only—economic development tool that has ever worked on reservations."<sup>6</sup> NIGA observes that tribes are using gaming profits to fund social service programs, scholarships, health care clinics, new roads, new sewer and water systems, adequate housing, chemical dependency treatment programs, and dialysis clinics. Gaming is a way for tribes to regain true self-respect, self-determination, and economic self-sufficiency. Many tribes are diversifying their economic bases by developing businesses unrelated to Indian gaming. The skills and resources they gain today will help assure their future and their children's future. Gaming not only provides a means to tribal self-sufficiency, but also creates jobs and economic activity in local non-Indian communities and states where tribal gaming operations are located.<sup>7</sup>

There are people who do not share NIGA's optimism about the rapid growth of high-stakes gaming in Indian Country. Noted American Indian author Gerald Vizenor has observed that casinos raise the envy of outsiders, threaten traditional tribal values, and "could be the ruin of tribal sovereignty."<sup>8</sup> While tribal sovereignty is an inherent right that is limited but not given by the federal government, Vizenor notes that Congress has the absolute power to terminate reservations. The tension between the idea of limited sovereignty and a desire of the states to capture tax revenues lost to Indian casinos could be resolved by new congressional action favoring the states. In time, "Casinos could be the last representation of tribal sovereignty; the winners could become the losers."<sup>9</sup>

### INDIAN TRIBES AS COMPLEX ADAPTIVE SYSTEMS

New theories evolving out of a variety of disciplines, including physics, biology, and computer science, are providing a new way to think about ourselves and the world around us.<sup>10</sup> One of these theories, complexity theory, has already presented some new ways to think about large social and economic systems, business corporations, and local communities.<sup>11</sup> It is hoped that the theory will also provide a new perspective on Indian tribes and the Indian gaming industry.<sup>12</sup>

A living cell, a brain, a flock of birds, political and social systems, a person, the stock market, and the planet earth are all complex systems. Adopt a point of view informed by complexity theory and everything from a single-celled organism and one human being to an Indian tribe and American society as a whole becomes a living system, a pattern of relationships, and a complex interactive process.

Although it is firmly rooted in the philosophy and institutions of Western science, at its core, complexity theory offers a view of the world that is remarkably close to traditional American Indian views of the relationship between human beings and nature.<sup>13</sup> An initial understanding of the theory requires only an openness to unfamiliar ideas and, perhaps, a little effort:

Think of your childhood. You remember it clearly, don't you? Yet you weren't there! Not a single atom that is in your body now was present when you were child. You're not even the same shape as you were then. No thing has remained constant, yet you are still the same person. Whatever you are, you are not the stuff of which you are made; yet without that stuff, you would not be anything at all. Material flows from place to place, and momentarily comes together to be you.<sup>14</sup>

Changing patterns of relationships between material make us who we are. We are not abstract, autonomous individuals experiencing the world. We are produced by the world, we change it, and we are changed by it.

In the terms of complexity theory, an individual person, an American Indian tribe, or any other living system is a complex adaptive system (CAS). A CAS is a dynamic process of self-organizing parts that come from and go back

to the environment. Life is the most remarkable distinguishing feature of these systems.<sup>15</sup> A second defining characteristic of a CAS is its self-organization or self-maintenance. To maintain its internal organization and avoid total dissipation into its environment, an Indian tribe, and any other living system, is constantly rebuilding itself by drawing energy and other materials from its environment.

A third feature is adaptivity, or the ability of a CAS to adapt to changes in the environment and continue to perform under changing conditions. Fourth, complex adaptive systems vary in size and complexity from a single living cell to our entire planet (see fig. 1). They are systems nested within systems within systems. Such systems are composed of smaller systems at lower levels of organization and they come together to form larger systems at higher levels of organization (for example, a number of nerve cells form a nervous system, or the Six Tribes become the Iroquois Confederacy). Like biological ecosystems, a CAS does not have an easily definable boundary.

Finally, all complex adaptive systems possess some form of “memory” to preserve information. When the information maintaining order in a CAS (DNA in a living organism, for example) is retained, the system does not have to depend on the continued existence of all of its parts to survive. Parts can come and go (as in the earlier description of the body as a human system) or people can come and go in an Indian tribe, but as long as a pattern of roles or interrelationships between the parts is maintained, the tribe is preserved. From the perspective of complexity theory, an Indian tribe is a verb, not a noun. It is a living and constantly evolving process that is defined by what it is doing over time.

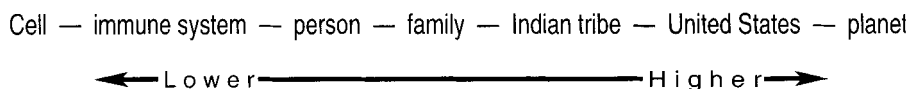


FIGURE 1. *Levels of organizational complexity in CAS.*

An Indian tribe exists at a higher level of organizational complexity than a living cell or an individual human being and at a lower level of complexity than the larger American society of which it is a part. While an individual cell is generally recognized as the lowest level of organizational complexity in a CAS, in most cases, one person is the lowest level of organizational complexity in social or human systems. Indian tribes and other social systems exhibit all the characteristics of lower-level CAS systems, including the ability to grow, reproduce, and die.

Beyond atoms and molecules, a tribe is made up of something that is non-material and irreducible. It is a self-organizing pattern of relationships between constituent “parts” that, taken together, form the basis of a tribe’s existence. The living and nonliving parts of the pattern include tribal members, reservation land and its ecology, and everything from reservation cars, real estate, and computers to tribal web pages, legal records, and sacred sites.<sup>16</sup> As the living and material parts interact and change, the tribe changes.

Lower-level complex adaptive systems nested within a tribe (families, social organizations, tribal government, a gaming casino) in dynamic interaction with one another and the system's environment make up a living and constantly evolving American Indian tribe.

Like other CAS systems, a tribe contains mechanisms to distribute internal control of the tribal system to the parts of the system. In a biological CAS, DNA retains information that serves as the internal frame of reference or "glue" that holds the system together. At the same time, DNA distributes the control of interactive relationships between the parts of a biological system to the parts themselves.<sup>17</sup> The resulting linear and nonlinear relationships between parts of a CAS, then, express life, the emergent property unique to all living systems. The characteristic of "aliveness" can be traced to the organizing influence of DNA.<sup>18</sup>

A common body of metaphor (CBM) distinguishes human systems from complex adaptive systems at lower levels of organizational complexity. A CBM is the "organizational DNA," glue, or equivalent human mechanism that distributes the control of internal, interactive relationships to tribal members and other parts of an Indian tribe. Through metaphor, our individual understanding of new things is acquired, defined, and organized in terms of our knowledge of things already retained in our minds as remembered images, ideas, symbols, and stereotypes.<sup>19</sup> We come to know things in terms of things already known to us; at the same time, our constantly evolving understanding of ourselves and the world around us guides our ongoing actions and behavior.

Metaphor is used and shared by tribal members; it identifies and orders the parts of a tribal community. A tribal CBM simultaneously defines and is defined by a tribe. It forms a distinctive symbol system or collective and evolving vision of reality that is the basis of the way a tribe organizes itself.<sup>20</sup> A mountain may be regarded as sacred in tribal traditions which are a part of the tribe's CBM. The traditions, in turn, are reinforced and sustained by a continuing history of spiritual experiences of tribal members at the mountain. Tribal traditions, then, are based on, maintained by, and maintain the mountain as a part of the tribal system.

A common body of metaphor does not exist in a linear, causal relationship to an Indian tribe. It is a dynamic internal frame of reference that simultaneously guides a tribe as it is being defined and redefined by the parts of a tribe in interaction with each other and in interaction with the tribe's environment. When a tribe builds a casino, tribal members and other parts of a tribe interact with new system parts (consultants, lawyers, non-Indian employees, and gamblers) and elements of the tribe's environment (state and federal agencies, courts, and adjacent non-Indian communities) to create and employ new mental imagery, symbols, and language related to acquiring and operating a casino. New behavior and new thinking about mission statements, strategic plans, and a "bottom line" generate and contribute new metaphors to the tribal CBM that, in turn, guide subsequent tribal behavior. A casino may not transform a Plains or Woodlands tribe into a gaming tribe overnight, but gaming will change a tribe in unpredictable ways because it is a living, self-organizing, and evolving human system.

INDIAN TRIBAL SOVEREIGNTY<sup>21</sup>

For Native Americans, tribal sovereignty is inherent and existed before the arrival of the Europeans.<sup>22</sup> Sovereignty is generally defined as the freedom from external control or authority and the source of tribal sovereignty is, and continues to be, the tribes themselves.<sup>23</sup> Sovereignty manifests itself in a political/legal dimension (including the power to govern oneself, define tribal membership, and regulate domestic relations among tribal members) and in a cultural/spiritual dimension.<sup>24</sup> As such, the sovereign status of an Indian tribe "is wholly unlike the shared status of other minority groups in the U.S."<sup>25</sup>

Alternatives to the Indian tribal view of sovereignty are the positions that the tribes retain some limited features of political or legal sovereignty only because Congress chooses to continue recognizing them,<sup>26</sup> or that the tribes only exercise a derived form of sovereignty because Congress has given it to them.<sup>27</sup> Both follow from the argument that (1) Indian tribes possessed certain incidents of preexisting sovereignty because of their aboriginal status; (2) such sovereignty was and is subject to reduction or elimination by the United States (but not the individual states); and (3) any remaining limited tribal sovereignty is under the protection of the United States as a trust responsibility.<sup>28</sup>

## TRIBAL SOVEREIGNTY AS THE EMERGENT BEHAVIOR OF A TRIBE

From a perspective anchored in complexity theory, tribal sovereignty is inherent and an emergent behavior of an Indian tribe. It is a collective behavior that tribal members cannot experience, achieve, or maintain individually. It is this definition of sovereignty that seems implicit in the Native Media Resource Center's statement that tribal sovereignty "is not in the purview of individuals, groups or organizations to make decisions for their Tribe. Only Tribes can practice and exercise their sovereign powers."<sup>29</sup>

Tribal sovereignty is also an emergent behavioral property of an ongoing interactive relationship between a tribe and its environment. It is not something that a tribe does by itself. If sovereignty is defined as an absolute autonomy or freedom from external controls or influences from, for example, state governments, the federal courts, or other Indian tribes, then no tribe (or government anywhere) is or has ever been totally sovereign. Like other living systems, tribes and governments are produced by their world—they change it and are changed by it.

Tribal sovereignty, then, is expressed by a tribe in constant interaction with the larger American society and is an emergent behavior of a self-determining Indian tribe. As an emergent behavior, tribal sovereignty, unlike land, water, and other physical properties of a tribe, cannot be given to or taken from a tribe by the federal government or anyone else. As a legal concept, recognition of tribal sovereignty can and, in some cases, has been terminated by the federal government.<sup>30</sup> And it is certainly true that the environment can become so hostile that a tribe will cease to exist.<sup>31</sup> However, as long as an Indian tribe does exist as a living complex adaptive system, it will possess and express some measure of tribal sovereignty.<sup>32</sup>

## GAMING AS A NESTED SUBSYSTEM WITHIN A TRIBE

Sovereignty is a general emergent property that is expressed by a gaming tribe as a whole in an ongoing interactive relationship with its environment. Conversely, Indian gaming is expressed by a casino and associated entities that, in interaction with one another, distinguish a nested self-organizing subsystem within a tribe. We tend to associate gaming with a tribe as a whole because it makes thinking about what is going on simpler. It seems obvious, after all, that "Indians cannot open casinos—only Indian tribes can."<sup>33</sup>

According to complexity theory, an Indian tribe is an interrelated whole of different entities, each acting independently. It resembles the way the human body is made up of a stomach, immune system, and other subsystems, or the way an ecosystem is made up of many independently acting biological subsystems. A person eating dinner or writing an email is really the combined activity of many human subsystems in interaction with one another and the environment. In the same sense, Indian gaming is an emergent property of a process of interaction between a casino, tribal members, and other nested parts of a tribe, all in interaction with one another and elements of the tribe's environment.

Like people who respond differently to changes in their environment, Indian tribes vary in their responses to changing circumstances. The reasons differ. Some of the variation in tribal reactions to IGRA can be attributed to differences in the mix of characteristics of the tribes themselves. Tribal histories, cultures, and value systems, rooted in different common bodies of metaphor, will vary and may guide tribes to reject (Navajo, Hopi) or embrace (Mississippi Choctaw) the idea of building a gaming casino. Past decisions and behavior may limit the ability of a tribe to react to new circumstances, such as restrictions on the Passamaquoddy tribe's right to build a gaming casino that accompanied the Maine Indian Claims Settlement in 1979.<sup>34</sup> And, of course, tribal leaders and members come and go, individual opinions about gaming change, and the behavior of tribes often follows suit.

Variations in tribal responses to gaming also mirror tribal environments. When viewed as a complex adaptive system, much of a tribe's identity is created by the problems it has to solve to survive as a living system. A tribe reflects an ongoing interaction with its environment. In the past, nomadic tribes reflected life on the Plains prior to westward expansion of the American frontier and a whaling tribe typified the life of a precolonial Indian community near an ocean. Today, American Indian tribes reflect the life of indigenous peoples in an environment that is the United States in the twenty-first century. As a result, some have become gaming tribes.

Building and running an Indian gaming casino depends on the progress of a complex relationship to many environmental factors. They include federal recognition as an Indian tribe,<sup>35</sup> the political support or opposition of non-Indians, particularly in the courts, state and local governments,<sup>36</sup> the support or opposition of other gaming tribes,<sup>37</sup> physical location,<sup>38</sup> and the availability of outside investors.<sup>39</sup>

Because a tribe is a complex adaptive system, its response to changes in its environment is nonlinear. Even if all tribes were more or less the same in size



and composition, were all federally recognized, and all lived in similar environments, their individual responses to the IGRA would still be varied and unpredictable. To think about nonlinearity in this context, assume that a tribe is a sand pile and IGRA is a grain of sand. All sand piles (tribes) exist at a point between rigid order and chaos (far from equilibrium). If you drop one grain of sand (IGRA) on each pile (tribe), in most piles, nothing happens. Some may exhibit a modest shift of a few grains of sand. And one or a few may experience a major collapse of an entire side of the pile. This varied response is due to differences in the internal dynamics of the piles (tribes) themselves. Tribes are not piles of sand, but their individual responses to Indian gaming will always be nonlinear, dynamic, and, in large part, unpredictable.<sup>40</sup>

### SOME POSITIVE AND NEGATIVE IMPACTS OF INDIAN GAMING

Gaming will change an Indian tribe. People who think gaming strengthens tribes point to improved infrastructure; diversified tribal economies; heightened employment; augmented health, housing, education, and social program budgets; increased indigenous language retention; and generally renewed community vitality.<sup>41</sup> They also argue that gaming revenues support new political and legal resources that are under the control of tribes. In the US Congress, the courts, and state legislatures, gaming gives Indian nations a renewed ability to take up new battles that are being led and fought by Indians.<sup>42</sup>

Not all changes brought about by Indian gaming are considered good, however. Those who think changes accompanying gaming will weaken tribes generally point to breakdowns in tribal cultures and traditional values;<sup>43</sup> increased domestic abuse and tribal factionalism;<sup>44</sup> and increased corruption, especially of tribal leaders.<sup>45</sup> In some cases, negative observations reflect a concern that promised changes, especially in the economic development of tribes, have not and may not ever accompany gaming on Indian reservations.<sup>46</sup>

In most conventional thinking, policy impacts are things that happen linearly and sequentially as a result of the implementation of a government policy or program. Policy impacts follow from and are caused by a public policy. From a perspective guided by complexity theory, cause and effect loses its rather straightforwardness and Indian policy becomes an emergent property of a complex adaptive system: the United States. Upon emergence, Indian policy at once causes changes in interaction with Indian tribes, other parts of the larger CAS, and its environment. The results, or policy impacts, are often unpredictable and considered positive or negative depending on the position or perspective of the person examining or thinking about the policy. If IGRA is best understood as an emergent property of the US political system, then any comprehensive effort to describe and evaluate the impact of IGRA on Indian tribes will be complicated, ambivalent, and, certainly from someone's perspective, wrong.

## CHANGE AND EVOLUTION IN INDIAN COUNTRY

The gaming industry has brought major changes to individual gaming tribes and Indian Country as a whole; however, rarely have observations of these changes been drawn from a perspective informed by complexity theory. This section will consider some ways that gaming may change the way tribes think about themselves, how tribes interact with their immediate environment, and how Indian gaming may transform the relationship between Indian Country and the greater American society surrounding it.

Whether involved in gaming or not, all Indian tribes are complex human systems and therefore possess a common body of metaphor that produces a characteristic tribal way of thinking about the world and a distinctive set of tribal values. "These unique tribal values—an emphasis on the well-being of the entire tribal community rather than the self-interest of the individual; on a nature-centered spirituality rather than an acquisitive materialism; on an ethic that treats one's homeland and the earth as a mysterious, living, dignified presence rather than as a lifeless repository of exploitable resources—are what constitute the very core and substance of Indian tribes."<sup>47</sup>

When a tribe builds a gaming casino, tribal members interact with new people, including non-Indian casino managers, employees, and patrons, to devise solutions to new problems. In the process they generate new metaphor around the job of operating a casino. The new metaphor mixes and interacts with existing metaphor to produce a revised common body of metaphor to guide the tribe's subsequent behavior. When thoughts emerge about the self-interest of individuals (such as per capita payments of gaming revenues), acquisitive materialism (such as the expansion of gaming operations) and new strategies to turn reservations into long-term exploitable resources, they may represent the first indicators of the emergence of a new gaming tribe.

When a tribe builds a casino, many functions of the tribe remain the same. It will continue to operate as a social system in which Indians live among one another. But new emergent behaviors do evolve with gaming. Many tribes become major contributors to the revitalization of off-reservation economies, donors to non-Indian charities, and members of chambers of commerce in neighboring non-Indian communities.<sup>48</sup> Taken together, and in the context of the surrounding environment, these new emergent behaviors may suggest that a gaming tribe has become indistinguishable from a for-profit corporation and entertainment center. New emergent behaviors also feed back to change the way tribal members think about themselves as they assume new functions and purposes within the context of an always-changing environment.

Indian gaming may transform the relationship between Indian Country as a whole and the greater American society that surrounds it.<sup>49</sup> When most Indians were living in isolated places far from anywhere, no one much cared about them. Now the interstate highway system, the Internet, and Indian gaming casinos are bringing the rest of America right to the doorsteps of tribal lands and awakening a new interest in Indian Country. Big new Indian-owned businesses are springing up in some of the most surprising places and, as a result, non-Indian perceptions of Indian Country are changing.

Former Assistant Secretary of the Interior for Indian Affairs Ross Swimmer recently observed that when people look at huge Indian casinos, such as the Mashantucket Pequot's Foxwoods Resort Casino, the Mohegan Sun Casino, or the Shakopee Mdewakanton Sioux tribe's Mystic Lake Casino/Hotel complex, they see wealthy Indians who must have millions of dollars. He goes on to drive his point home when he comments that there are a "hundred or so tribes on the West Coast that have all become casinos. What are we doing here? What is this Indian Country?"<sup>50</sup>

By the end of the year, California should become America's second-largest gambling state—second only to only Nevada—with between 45,000 and 113,000 slot machines in at least forty-one Indian-owned casinos.<sup>51</sup> To partially respond to Swimmer, one thing Indians are doing is becoming powerful political players on both the local and national scenes. California tribes recently spent more than \$100 million on two ballot initiatives on Indian gaming, and former Vice-President Al Gore attended a luncheon with a tribal council in Palm Springs and raised \$400,000 in campaign contributions.<sup>52</sup> At the national level, LegiX<sup>53</sup> and other new Indian interest groups are now firmly established in Washington, D.C., and among other things ran full-page ads in national media in an effort to influence the 2000 presidential campaign.<sup>54</sup>

Native American author Sherman Alexie has wondered why non-Indians seem frightened of Indian gaming and concludes that the reason has something to do with political power. "As Indians make money we also gain power. As we gain power we develop a political voice. We can then use that voice to . . . demand that this country be held accountable for what it did to us and what it continues to do to us."<sup>55</sup>

As some gaming tribes begin to look prosperous and play a more assertive role in the political arena, perceptions of indigenous peoples are beginning to change in larger American society.<sup>56</sup> The result could be a nonlinear response in the American political system that is all out of proportion to the extent and actual importance of the gaming industry in Indian Country as a whole. It is not inconceivable that Indian gaming could trigger a cascade of policy proposals reminiscent of those characterizing the 1950s era of Indian termination and the American government could try, yet again, to unilaterally end its treaty obligations and "get out of the Indian business."<sup>57</sup>

## CONCLUSION

Complexity theory proposes that the function of each component of a complex adaptive system is to participate in the production or transformation of the other components of the system. In this way, the system recreates itself. No living system is meaningful in isolation. All complex adaptive systems are constituted by the world around them. They change it and are changed by it.

After a review of changes in Indian policy since the Indian Reorganization Act (1934), Vine Deloria Jr. and Clifford Lytle concluded that tribal governments have come out of the twentieth century in a much better position and with higher status than they entered it. "Local institutions that served Indians were in a much stronger position even though they now resembled the local

units of government that served other Americans and possessed little that was distinctively Indian. Indians themselves had assimilated to a significant degree . . . and thus the contemporary institutions were better suited to their needs than had they been able to return to wholly traditional ways."<sup>58</sup> Considered in its ever-evolving historical context, the emergence of Indian gaming may signal yet other transformations in the way American Indians think about themselves, live within, and interact with larger American society.

To date, there is evidence suggesting that tribes have used Indian gaming revenues to expand and strengthen non-Indian tribal institutions and restore traditional Indian ways. The implications of this for the future of Indian sovereignty are unclear. To the extent that gaming accelerates the erosion of tribal common bodies of metaphor that sustain traditional cultures and brings with it an increase in the environmental hostility around Indian Country, Indian gaming may weaken tribal sovereignty. But it may also be true that Indian gaming will accelerate major changes in many tribal communities and at the same time strengthen tribal sovereignty by revitalizing Indian tribes as the foundation of Indian identity.

## NOTES

1. Complexity theory, as introduced in this paper, will be more fully developed by the author and applied in a comprehensive case study, forthcoming from the University of Oklahoma Press, of an American Indian tribe that has operated a gaming casino since the late 1980s.

2. Montie R. Deer, "National Indian Gaming Commission," testimony before the Senate Committee on Indian Affairs, US Senate, July 19, 2000.

3. Id., Statement at the Coming Together of the Peoples Conference, Madison, Wisconsin [<http://www.doi.gov/nigc/c&pa/wisconsin.html>], February 19, 2000.

4. Richard G. Hill, Testimony before the Senate Committee on Indian Affairs on S. 3999, The Indian Gaming Regulatory Improvement Act of 1999, Federal Document Clearing House, Inc., March 24, 1999, 1.

5. National Indian Gaming Association, "NIGA Fact Sheet" [<http://www.indiangaming.org/about.html>], 2001.

6. Ibid.

7. Ibid.

8. Gerald Vizenor, "Gambling on Sovereignty," *American Indian Quarterly* 16 (1992): 411–413. For further discussion of the perceived negative impacts of Indian gaming see endnotes 43 through 46.

9. Ibid., 413.

10. See Fritjof Capra, *The Web of Life: A New Scientific Understanding of Living Systems* (New York: Doubleday, 1997); Paul Cilliers, *Complexity & Postmodernism* (New York: Routledge, 1998); James Gleick, *Chaos* (New York: Viking Penguin, 1987); Stuart Kauffman, *At Home in the Universe* (New York: Oxford University Press, 1995); Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue with Nature* (New York: Bantam Books, 1984); M. Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos* (New York: Simon & Schuster, 1992). "New" theories are often pioneered by the work of earlier thinkers. For one of the most readable

and concise presentations of the philosophical foundation of complexity theory, see Henri Bortoft, *The Wholeness of Nature: Goethe's Way Toward a Science of Conscious Participation in Nature* (Hudson, New York: Lindisfarne Press, 1996).

11. See Ken Baskin, *Corporate DNA: Learning from Life* (Boston: Butterworth-Heinemann, 1998); Arthur Battram, *Navigating Complexity: The Essential Guide to Complexity Theory in Business and Management* (London: The Industrial Society, 1998); Paul Krugman, *The Self-Organizing Economy* (Oxford, UK: Blackwell Publishers, Ltd., 1996); Roger Lewin and Birute Regine, *The Soul at Work* (New York: Simon & Schuster, 2000); Michael Lissack and Johan Roos, *The Next Common Sense: Mastering Corporate Complexity Through Coherence* (London: Nicholas Brealey Publishing, 1999); Russ Marion, *The Edge of Organization: Chaos and Complexity Theories of Formal Social Systems* (Thousand Oaks, CA: Sage Publications, Inc., 1999).

12. Although I am not aware of other applications of complexity theory per se to Indian tribes, the idea that a tribe exists as a complex living system is suggested in and supported by other research in American Indian studies. See Tom Holm, J. Diane Pearson, and Ben Chavis, "'Peoplehood': A Model for American Indian Studies," unpublished paper presented at the Annual Conference of the Western Social Science Association, San Diego, CA (April 28, 2000); Martha Johnson, *LORE: Capturing Traditional Environmental Knowledge* (Ottawa: Dene Cultural Institute/IDRC, 1992); Alices Legat, ed., *Report of the Traditional Knowledge Working Group* (Yellowknife: Department of Culture and Communications, Government of the Northwest Territories, Canada, 1991); Dean Howard Smith, *Modern Tribal Development* (Walnut Creek, CA: AltaMira Press, 2000); Ronald L. Trospen, "Traditional American Indian Economic Policy," *American Indian Culture and Research Journal* 19, no. 1 (1995): 65–95. A significant attribute of complexity theory is that it could be a conceptual framework that eventually bridges the invented barriers between Western scientific and philosophical thought and traditional knowledge of the world emergent from a people's experience.

13. See Vine Deloria Jr., "Knowing and Understanding: Traditional Education in the Modern World," *Winds of Change* 5 (1990): 12–18; Vine Deloria Jr., *God is Red: A Native View of Religion*, second edition (Golden, Colorado: North American Press, 1992); Robert Earle Johannes, *Traditional Ecological Knowledge: A Collection of Essays* (Cambridge, UK: IUCN, 1989); D. Martinez, "Traditional Environmental Knowledge Connects Land and Culture," *Winds of Change* 9 (1997): 89–94; Ray Pierotti and Daniel Wildcat, "Traditional Ecological Knowledge," *Ecological Applications* 5 (2000): 1333–1340; E. Salmon, "Kincentric Ecology: Indigenous Perceptions of the Human-Nature Relationship," *Ecological Applications* 10 (2000): 1327–1332; David T. Suzuki and Peter Knudtson, *Wisdom of the Elders: Sacred Native Stories of Nature* (New York: Bantam Books, 1993).

14. CyberLife Technology Ltd. [<http://cyberlife.co.uk/cyberlife/archives.emergence.html>], 1999.

15. See Murray Gell-Mann, "Simple and the Complex," in *Complexity, Global Politics and National Security*, eds. David S. Alberts and Thomas J. Czerwinski (Washington, DC: National Defense University, 1996); Robert R. Maxfield, "Complexity and Organization Management," in *Complexity*, Alberts and Czerwinski, eds.; VUB AI-Lab, "Evolving Complex Adaptive Systems" [<http://www.arti.bub.ac.be/~steels/origin/subsection331.html>], 2000.

16. See Commonwealth Spatial Data Committee, "Definitions of Spatial Data" [<http://www.ausling.gov.au/pipc/cadc.csdcddefi.htm>], 1991; Ray Pierotti and Dan Wildcat, "Evolution, Creation, and Native Traditions," *Winds of Change* 12 (1997): 73–77; Ray Pierotti and Dan Wildcat, "The Science of Ecology and Native American Traditions," *Winds of Change* 12 (1997): 94–98; Scott B. Vickers, *Native American Identities: From Stereotype to Archetype in Art and Literature* (Albuquerque: University of New Mexico Press), 1998.

17. Chris Langton, *Artificial Life* (Redwood City, CA: Addison-Wesley, 1989).

18. For a discussion of the complex relationship between DNA and a living organism, see Stephen Jay Gould, "Humbled by the Genome's Mysteries," *New York Times*, February 19, 2001: 2; Alex Mauron, "Is the Genome the Secular Equivalent of the Soul?," *Science Online* [<http://www.sciencemag.org/cgi/content/full/291/5505/831>], February 7, 2001.

19. See George Lakoff and Mark Johnson, *Philosophy in the Flesh* (New York: Basic Books: 1999); Gareth Morgan, *Images of Organization* (Beverly Hills, CA: Sage Publications, Inc., 1986); Gareth Morgan, *Imaginization: The Art of Creative Management* (Beverly Hills, CA: Sage Publications Inc., 1993); Vickers, *Native American Identities*.

20. See George Pierre Castile and Gilbert Kushner, eds., *Persistent Peoples: Cultural Enclaves in Perspective* (Tucson: University of Arizona Press, 1981); Holm et al., "Peoplehood: A Model for American Indian Studies"; Edward H. Spicer, *The Yaquis: A Cultural History* (Tucson: The University of Arizona Press, 1980).

21. For additional definitions and discussion of tribal sovereignty, see American Indian Research and Policy Institute, "Threats to Tribal Sovereignty" [<http://www.airpi.org/sovthreat.html>], 2000; Diane Duffy and Jerry Stubben, "An Assessment of Native American Economic Development: Putting Culture and Sovereignty Back in the Models," *Studies in Comparative International Development* 32 (1998): 52–78; Janet Reno, "Department of Justice Policy on Indian Sovereignty and Government-to-Government Relations with Indian Tribes," US Department of Justice [<http://www.usdoj.gov/otj/sovtrbtxt.htm>], August 25, 1999; Rudolph C. Ryser, "When Tribes and States Collide," Part 1, Center for World Indigenous Studies, Olympia, WA [<http://www.halcyon.com/pub/FWDP/Americas/collide1.txt>], 1999.

22. For example, see LeNora Begay, "Will Tribes Cede Sovereignty to Gaming Tax?" *News from Indian Country*, October 15, 1995: PG; Peter d'Errico, "Sovereignty: A Brief History in the Context of U.S. 'Indian Law,'" in *Encyclopedia of Minorities in American Politics* 2, eds. Jeffrey D. Schultz et al. (Phoenix, AZ: Oryx Press, 2000); Philip J. Prygoski, "From Marshall to Marshall: The Supreme Court's Changing Stance on Tribal Sovereignty," [<http://www.abanet.org/genpractice/compleat/f95marshall.html>], 2000; Vizenor, "Gambling and Sovereignty"; Tim Wapato and Thomas Acevedo, "Indian Gaming and the States: Does Sovereignty Have Limits?" (panel presentation, Annual Conference of the National Council of Legislators from Gaming States, Hartford, Connecticut, June 20–22, 1997), reported in *Ojebwe News*, June 27, 1997: PG.

23. Richard A. Monette and William G. Paul, "Sovereignty and Survival," *ABA Journal* 86 (March 2000), 64–65.

24. David E. Wilkins, *American Indian Sovereignty and the U.S. Supreme Court* (Austin: University of Texas Press, 1977), 19–21.

25. *Ibid.*, 21.

26. See Prygoski, "From Marshall to Marshall"; Reno, "Department of Justice."

27. D'Errico, "Sovereignty: A Brief History." There are others who suggest that tribal sovereignty can be defined within the context of the structure of the federal government, "somewhere between states and interest groups" (W. Dale Mason, *Indian Gaming: Tribal Sovereignty and American Politics* [Norman: University of Oklahoma Press, 1999], 6), that it exists as a genuine decision-making control over affairs or "de facto sovereignty" (Stephen Cornell, "Sovereignty, Prosperity and Policy in Indian Country Today," presentation to the Nation-Building Conference: Building Tribal Legislative Infrastructure for Economic Prosperity, Missoula, Montana [<http://www.kc.frb.org/publicat/commrein/u97pers2.htm>], April 1997), or that economic power combined with deliberate culture building can produce tribal sovereignty and economic independence (Sioux Harvey, "Two Models of Sovereignty: A Comparative History of the Mashantucket Pequot Tribal Nation and the Navajo Nation," *American Indian Culture and Research Journal* 20, no. 1 [1996]: 147-194).

28. Pyrgoski, "From Marshall to Marshall."

29. Native Media Resource Center, "Sovereignty" [<http://www.ncal.verio.com/~berryhp/sov.html>], 1997.

30. See Donald Lee Fixico, *Termination and Relocation: Federal Indian Policy, 1945-1960* (Albuquerque: University of New Mexico Press, 1986); Nicholas C. Peroff, *Menominee Drums: Tribal Termination and Restoration, 1954-1974* (Norman: University of Oklahoma Press, 1982); Kenneth R. Philp, *Termination Revisited: American Indians on the Trail to Self-Determination, 1933-1953* (Lincoln: University of Nebraska Press, 1999); S. Lyman Tyler, *Indian Affairs: A Work Paper on Termination With an Attempt to Show Its Antecedents* (Provo, Utah: Brigham Young University, 1964).

31. Long ago, Justice McLean, in his opinion in *Worcester v. Georgia*, 6 Pet. 515 (1832), questioned whether there could be any end to this "peculiar relation" to Indian tribes (read: tribal sovereignty). His answer, written in the context of the hostile environment for Indians in his day, was, "If a tribe of Indians shall become so degraded or reduced in numbers as to lose the power of self-government the protection of the local law, of necessity, must be extended over them" (D'Errico, "Sovereignty: A Brief History," 2). In other words, sovereignty would no longer be recognized when a tribe ceased to exist as a living community of people.

32. From the perspective of complexity theory, even as they endured the extreme conditions of captivity at Bosque Redondo in 1864, the Navajo tribe persevered as a living human CAS (tribal members did not disperse, the tribal system continued to maintain itself and adapt, a Navajo CBM continued to evolve), and therefore the Navajo people retained a level of tribal sovereignty that, in fact, reenergized when, after four years, they were returned to their homeland.

33. Stephen Cornell and Jonathan Taylor, "Gaming, a tool tribes have the right to use," *The Arizona Republic*, October 6, 1998, B5.

34. Rep. Barney Frank, "Indian Gaming," letter to constituents [<http://www.house.gov/frank.gaming.htm>], March 19, 1996.

35. J. Anthony Paredes, "Paradoxes of Modernism and Indianness in the Southwest," *American Indian Quarterly* 19 (1995).

36. See Pat Doyle, "Casino opponents say downside is downplayed: Traffic, noise, waste will increase, report says," *Minneapolis Star Tribune*, July 24, 2000, 1B; Pat Doyle, "Comment period begins for a casino in Hudson: It may be last chance for views," *Minneapolis Star Tribune*, August 1, 2000, 1B; *Hartford Courant*, "Return of the Natives:

An Eight Part Series" [<http://www.lib.uconn.edu/Ethno/Courant/index.htm>], 1994; Sen. Joseph Lieberman, "Indian Gaming," testimony before the US Senate Committee on Indian Affairs, May 12, 1998; Mason, *Indian Gaming, Albuquerque Tribune*, "New Mexico's Big Gamble," parts I-IV [<http://www.abqtrb.com>], 1997.

37. See Judy Lin, "Tiny Tribe Pins Big Plans on Casino," *AP Online*, July 11, 2000; Jessica Tavares, "California Indian Gaming," testimony before the US Senate Indian Affairs Committee, September 24, 1998.

38. See Matt Kelley, "For some Indian tribes, casinos a bad bargain," *The Columbian*, October 8, 1998; Jonathan B. Taylor, Mathew B. Krepps, and Patrick Wang, "The National Evidence on the Socioeconomic Impacts of American Indian Gaming on Non-Indian Communities," Harvard Project on American Indian Economic Development, Harvard University, April 2000; *Sun Herald Online*, "Washington State may try to help struggling tribal casinos" [<http://www.sunherald.com.htm>], January 29, 1998.

39. See Harvy, "Two Models of Sovereignty"; George Judson, "U.S. withholds recognition as a tribe from Paugussetts," *New York Times*, May 25, 1995.

40. Someone reading this article might wonder what the usefulness of complexity theory is if the point in this paragraph is to say that the response of tribes to IGRA is unpredictable. Surely if the constituent parts of a tribal system and subsystems are understood, then at least some confidence intervals of future actions can be developed. Complexity theory argues that a total knowledge or understanding of a living human system is not possible. So confidence levels can be developed, but they will never fully accommodate the inherent unpredictability of an Indian tribe or any other living human system.

41. Taylor et al., "The National Evidence." See also Stephen Cornell, Matthew B. Krepps, and Jonathan B. Taylor, "American Indian gaming policy and its socio-economic effects: A report to the National Gambling Impact Study Commission," (Cambridge, MA: The Economics Resource Group, Inc., 1998); Ambrose I. Lane Jr., *Return of the Buffalo: The Story Behind America's Indian Gaming Explosion* (Westport, CT: Bergin & Garvey, 1995); Franke Wilmer, "Indian Gaming: Players and States," *Wicazo Sa Review* 12 (1997): 89-114. For a discussion of the positive impacts of gaming in individual tribes, see J. M. Clapp et al., *The Economic Impacts of the Foxwoods High States Bingo & Casino on New London County and Surrounding Areas* (Storrs, CT: Arthur W. Wright & Associates, 1993); S. C. Deller, A. Lake and J. Sroka, *The St. Croix Casino: A Comprehensive Study of Its Socioeconomic Impacts* (Madison: University of Wisconsin Extension, 1996); Clifford LaChappa, "Building a Community, Rebuilding a Culture," *Chamber News*, San Diego Chamber of Commerce [[http://www.sdchamber.org/news/june\\_building.shtml](http://www.sdchamber.org/news/june_building.shtml)], June 1998; David Melmer, "Mississippi Choctaw Excel in Self-Determination," *Indian Country Today*, May 31-June 7, 1999, B1-B8; David Melmer, "It's All about Trust for Mille Lacs Ojebwe," *Indian Country Today*, July 12 and 19, 1999, B1-B8; Billie Jean Plaster, "Gaming Sparks New Hope for Tribes," *Sandpoint Magazine* (Summer 1997). For reports that weigh both the positive and negative impacts of gaming and conclude that the overall impact on tribes has been positive, see Jim McCartney, "Indian Community Invests in Future, Self-Sufficiency is Long Term Goal," *The Arizona Republic*, August 8, 2000, D1; D. Winchell, J. Lounsbury, and L. Sommers, "Indian Gaming in the U.S.: Distribution, Significance and Trends," *Focus* 44 (1997): 1-10.



42. Mason, *Indian Gaming*, 259.

43. See Clay Akewenzie, "A Modern 'Small Pox' for Native Culture," *The Thinker* (January 1996); G. C. Anders, "Indian Gaming: Financial and Regulatory Issues," *The Annals of the American Academy of Political and Social Science* 556 (March 1998): 98-108; Tim Giago, "Casino-generated golden eggs bring credibility of Indian Nations at stake," *Indian Country Today* 16 (October 21-28, 1996); Suzan Shown Harjo, "Guest Essay," *Native Peoples* 7 (1994): 5; Marci McDonald, "Tribal Gamblers," *Maclean's* (May 30, 1994): 32-33; Jon Magnuson, "Casino Wars: Ethics and Economics in Indian Country," *Christian Century* (February 16, 1994): 169-171; Vizenor, "Gambling on Sovereignty."

44. See Kevin Chamberlain, "Federal Recognition of Indian Tribes," testimony before the US House Resources Committee on H.R. 2822, October 7, 1998; W. Claibourne, "Taking odds on major Indian casino proposal: Alliances form for and against Wisconsin Complex," *The Washington Post*, March 3, 2000, A03; David Foster, "U.S. Tribes Redefine Heritage as Intermarriage Thins Bloodlines; Culture: Who is a 'real' Indian?" *Los Angeles Times*, February 23, 1997, B3; Neal Lawrence, "Gambling on a New Life," *Midwest Today* (January 1995); Paul Levy, "The debate: How Indian is Indian enough? The argument over who is an Indian divides Indian people and sparks bitterness toward the federal government," *Star Tribune*, May 15, 1995, 1A; Martin Walker, "Tribes Campaign to Drop Name Sioux," *The Guardian* (UK) [<http://www.vamp.org/siouxsie/Text/kdeyoe.94/0013.html>], February 23, 1994.

45. See Tim Giago, "Indians Need Sovereignty," *Wisconsin State Journal*, July 30, 1995, 2B; Sen. Slade Gorton, "Statement by U.S. Senator Slade Gorton Regarding Tribal Sovereign Immunity," testimony before the Senate Committee on Indian Affairs regarding S. 1691 "Tribal Sovereign Immunity," Seattle, WA, [<http://www.ronan.net/~morris/page19.html>], April 7, 1998; Julie Shortridge, "Summary of *Granite Valley v. Jackpot Junction Casino Ruling*," *Ojebwe News*, March 7, 1997.

46. See *The Circle*, "Treasure hunt: The Prairie Island Mdewakanton Dakota hope their new casino digs will keep them in the money," February 28, 1997; David Pace, "Not much payoff: Casinos are failing to lift many American Indian reservations out of poverty," *The Kansas City Star*, September 7, 2000, C1; Robert Siegel, "Analysis: David Price Reviews Monetary Effects of Indian Gambling on Native American Population," *All Things Considered* (NPR), September 1, 2000.

47. John LaVelle, review of *Indians Are Us? Culture and Genocide in Native North America* by Ward Churchill, *American Indian Quarterly* 20 (1996): 116-117.

48. See *Arizona Republic*, "Indian group to fund gaming addiction fight," July 1, 2000, B3; Stephen Cornell and Jonathan B. Taylor, "Gaming a tool tribes have the right to use," *The Arizona Republic* (October 6, 1998), B5; Taylor et al., "The National Evidence."

49. See Fredreka Schouten, "Indian sovereignty leads to classes over casinos, nuke waste," *Gannett News Service*, December 24, 1998; Ray Suarez, "Native American Sovereignty," *Talk of the Nation* (NPR), Salt Lake City, May 14, 1998.

50. Mary Pierpoint, "Ross Swimmer examines government-to-government relations," *Indian Country Today*, September 6, 2000, C1.

51. Thomas D. Elias, "California gambles on casinos: Regulation fails to keep pace with rapid gaming spread," *The Washington Times*, June 5, 2000, A6.

52. Elizabeth Arnold, "Profile: Political and Economic Power Gains Made by Native Americans," *Monday Edition* (NPR), July 12, 2000.

53. LegiX, "Homepage" [<http://www.legix.com>], 2000.

54. National Indian Gaming Association, "Open Letter to Presidential Candidates Bush and Gore," *USA Today*, July 14, 2000, 9A.

55. Sherman Alexie, "...and other not-so-facetious reasons why the Spokane Indians want to bet on casinos," *High Country News* [<http://www.hcn.org/1994/sep19/dir/essay.html>], September 19, 1994.

56. See Jeff Benedict, *Without Reservation* (New York: Harper Collins, 2000); Kim Isaac Eisler, *Revenge of the Pequots* (New York: Simon & Schuster, 2001); Jose H. Lucero, "New Disease Invades Indian Country," Santa Clara Pueblo, NM [<http://oraibi.alphacdc.com/alpha/lucgam.html>], September 30, 1995; Dale W. Mason, "Tribes and States: A New Era in Intergovernmental Affairs," *Publius* 28 (1998): 111-130; Timothy L. O'Brien, *Bad Bet* (New York: Random House, 1998).

57. Peroff, *Menominee Drums*, 13. For an example of a recent termination-like policy proposal see the American Indian Equal Justice Act (S.1691), 1998.

58. Vine Deloria Jr. and Clifford M. Lytle, *American Indians, American Justice* (Austin: University of Texas Press, 1983), 24.