**Headline:** How Can the Study of Hierarchy/Heterarchy Influence the Future?

**Teaser:** How new information changes theories.

By Carole Crumley

**Author Bio:** Professor of anthropology (emerita) at the [University of North Carolina at Chapel Hill](https://www.unc.edu/), Carole Crumley is a founding scientist of the research strategy termed historical ecology. Her key concept of heterarchy is now applied to studies of societal and environmental change. She is the director of the [Integrated History and Future of People on Earth](https://ihopenet.org/) (IHOPE) initiative, a global network of researchers based at Sweden’s Uppsala University that unites the biophysical and social sciences and community voices to build a livable future.

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**Tags:** History, Social Science, North America/United States of America, Politics, Economy, Opinion

**[Article Body]**

Hierarchies are a familiar form of human organization where individuals and groups of high social status are ranked above others and make decisions. Some examples are an oligarchy, a small group of committed individuals (sharing religion, wealth, etc.); an absolute monarchy that controls all the levers of power; and an activity that requires a clear chain of command (armies and firefighters) for a rapid and coordinated effort. Another form of human organization is a heterarchy, where individual and group status is based on behavior, values, and the willingness to work for the common good; decisions are taken cooperatively. (An earlier version of this article originally appeared as an entry for Heterarchy in the [International Encyclopedia of the Social Sciences](https://digitalcommons.fairfield.edu/sociologyandanthropology-books/41/).[[1]](#footnote-0) ) Examples of heterarchy are elected national assemblies, unions and guilds, or a group activity whose leaders have the requisite knowledge for the required tasks.

These are bare-bones characterizations—a continuum—rather than a one-or-the-other condition; sociopolitical governance is usually a mix, with strict rules for certain purposes and more flexible rules for others. Taken together, the two terms aid the examination of all sociopolitical systems and the study of how decisions are mediated and change over time.

**A Traditional View of Social Complexity**

Since archaeology’s founding as a discipline in the 19th century, most interpretations have assumed a linear progression from small, early, and “simple” societies to those that were more populous, appeared later in time, and were “complex.” Such a definition of complex (having more administrative levels) is in contrast to the definition of complexity in nonlinear systems (more richly networked). Political systems were assumed to have greater stability the more they tended toward tiered hierarchies of power.

In 1962, the American cultural anthropologist [Elman Service](https://tinyurl.com/48c42wur) introduced a framework classifying evolutionary stages of social and political organization into four categories: band, tribe, chiefdom, and state. He focused on the managerial benefits of the theory, which posits that chiefdoms arose due to the advantages of centralized leadership and culminated in the formation of states. In this model, leaders offer tangible benefits to their followers who consolidate the leader’s power and support the expansion of bureaucratic organizations.

Since Service formulated this model of complexity in human societies, dissatisfaction with both the model and the underlying assumption has grown considerably. Scholars[[2]](#footnote-1) have [complained](https://rowman.com/ISBN/9780759112506/Chiefdoms-and-Other-Archaeological-Delusions) about the definition of these categories; the lack of clear evidence in the archaeological record; the failure of much archaeological data to fit a cultural evolutionary model; and the objectionable and persistent association with racism and colonialism. Most egregious is the assumption that ancient peoples and contemporary non-state groups are somehow less intelligent and creative than citizens of nation-states. This has played directly into Eurocentric convictions that conquest and colonial takeover were a favor to “backward” peoples. Today, scholars realize that throughout the course of human history, there were many different forms of self-governance.

The root problem has been the definition of complexity. Service understood complexity as many levels of governance, each subordinate to the one above (tiered). Heterarchies have many links (networked) of shifting importance over time. A tiered administrative system describes the formal organization of states but, even in states, the social scaffolding is better revealed when governance is seen as a network, with both official entities (departments) and unofficial ones (groups and individuals who can fulfill various functions).

**Heterarchy Reflects Real-Life Flexibility**

Introducing the concept of heterarchy into the study of societies has helped to understand puzzling activities and structures that are found in the past and the present. It is not necessarily a replacement model so much as a complementary one; studying the interplay between the two systems can be particularly instructive.

First, the hierarchy-heterarchy relation admits both temporal and spatial flexibility. For example, governmental heterarchies can become more hierarchical over time, and vice versa, without collapsing. Heterarchical relationships among elements at one spatial scale or in one dimension (for example, members of the same club) may be hierarchical at another scale (the privilege of seniority in decision-making). Heterarchy is both a structure and a condition.

Applying the concept of heterarchy to the study of ancient and existing societies is likely to have many uses, and exploration has begun in some areas: heterarchies of scale, heterarchies of power, and heterarchies of values.

**Heterarchies of Scale**

[Spatial analysis](https://link.springer.com/referenceworkentry/10.1007/978-1-4419-0465-2_219) in archaeology facilitates the study of shifting configurations of occupied areas, how they were used by their inhabitants, and how socially equal households were. Service was operating under a general assumption common among archaeologists that, over time, increasing group size was related to its complexity, defined as the size of habitation and evidence of growing political centralization, elite activity, and social stratification. In the early 2020s, excavations in Eastern Europe revealed that there were cities of up to 320 hectares (almost 800 acres) with a population of 10,000 people as early as the fourth millennium BCE but, as inequality increased, the cities lost population and were abandoned. These large population aggregations in the past found mechanisms to reduce inequality but, when that ability diminished, [people left](https://www.cambridge.org/core/journals/antiquity/article/trypillia-megasites-a-social-levelling-concept/A0048EA63DA8D0B00A513BFD7C24A679).[[3]](#footnote-2)

**Heterarchies of Power**

Power relations are demonstrably the most complicated and important aspect of the governance of human societies. It is particularly important to know how power shifts occur and under what conditions various power distributions constitute stable and unstable configurations. Studying this would greatly assist the study of change and perhaps explain how certain forms of governance can be associated with histories of stability and instability. Addressing the decreasing capacity of macro-states to control political and economic processes in a globalized world, political scientists have also found the concepts of heterarchy and complex systems useful in moving past [failing paradigms](https://www.routledge.com/Heterarchy-in-World-Politics/Cerny/p/book/9781032403410?srsltid=AfmBOorla78zS9Ob-V3aqwjeSwgU-T1QCdQn_yFSZkZBlN01uXqVM1Z1).[[4]](#footnote-3)

**Heterarchies of Values**

Power relations are predicated on systems of values that, as conditions change, are ranked and reranked in their importance by individuals, groups, and organizations. Neuropsychologist and cybernetician [Warren McCulloch](https://www.istitutocalvino.edu.it/studenti/siti/ia/protagonisti/McCulloch.html), who examined cognitive structures in the brain, called this collective organization a heterarchy.5 He demonstrated that the human brain is not organized hierarchically but adjusts to the reranking of values as circumstances change. McCulloch contrasted a hierarchy of (ranked) values with a heterarchy of values that defied both ranking and predictability. For example, an individual may be against abortion rights but support the death penalty (or vice versa). McCulloch’s “nervous nets,” the source of the brain’s flexibility, are structurally similar to the adaptive capacities of fluidly organized and highly communicative groups. McCulloch’s insight into the autonomous nature of information and communication in the brain revolutionized its neural study; it also solved major organizational problems in the fields of artificial intelligence and computer design. It is quintessentially human to make nimble [cognitive leaps](https://link.springer.com/article/10.1007/BF02478457) among scales.[[5]](#footnote-4)

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3. Hofmann, Robert; Müller-Scheeßel, Nils; and Müller, Johannes (2024). “Trypillia Mega-sites: A Social Levelling Concept?” Antiquity 98 (398): 380-400. [↑](#footnote-ref-2)
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5. McCulloch, Warren S. (1945) “A Heterarchy of Values Determined by the Topology of Neural Nets.” Bulletin of Mathematical Biophysics7:89-93. [↑](#footnote-ref-4)