Citation: Chernela, Janet. 2025. Invited Forward. Making Knowledge in a Science of the Social: Origins of Robert Carneiro's Theory of State Formation. *The Concise Evolutionary Essays*, Robert B. Graber, ed. Oxford: Berghahn Books. www.berghahnbooks.com/title/GraberCarneiro

FORWARD

The Making of Knowledge:
Origins of Robert Carneiro's Theory of State Formation

Janet Chernela, Professor Emerita,
University of Maryland, Md., USA

States—often characterized by monumental architecture, sumptuous burials, markets, record-keeping, and specialized classes of priests, artisans, and rulers—arose independently in Africa, Asia, and the Americas. The question of why those states arose when and where they did continues to intrigue scholars.

Numerous theories have been put forward. One well-known explanation contends that leisure time and permanent settlement attained by the shift from foraging for food to producing it, permitted creativity to flourish, thereby enabling populations to form centralized polities for stability and organization. A different, but related, proposition is that the perceived benefits of centralized organization prompted populations to rally around charismatic leaders to maintain order and control resource access. These models are both rational and voluntary.

To these proposals, Robert L. Carneiro contributed his own theory of state origins which he labelled, "Environmental Circumscription." In it, Carneiro theorized that barriers to mobility, by aggravating population pressure, stimulated warfare, thereby resulting in the level of political consolidation referred to as "the state" (1970). Carneiro was to devote his long career to exploring this argument. It has since become one of the

most highly regarded theories to date. In one standard overview of theory in anthropology, Mathieu Deflem (2013) wrote, "Carneiro's theory of the state is arguably the best-known and most influential theory of the state developed in the social sciences" (106).

Although considered to be one of the leading anthropologists of the twentieth century, Robert Carneiro was often discredited during his lifetime. His central argument, that states originated as products of evolutionary progress, driven by identifiable and universal determinants, was challenged by those who held that the uniqueness of cultures precluded such generalities. There were no laws, they argued, to which cultures were subject.

To his challengers, Carneiro responded with gracious, but unflinching, repartee. Throughout his lifetime, he continued to hone his elegant theory of cultural evolution in response to new criticisms and findings. He even enjoyed the debate. One of the long-term interchanges he most cherished was the one with Robert Graber, the author of this volume. We are offered a privileged view of some of that dialogic process in this volume. Here, some years after his death in 2020, I will attempt to defend his work against its many detractors, most specifically those from my own field of social anthropology.

Carneiro began his intellectual journey in thinking through the origins of the state early in his career. In the 1950s, while he was a student at the University of Michigan, he began to shape the theory that would give him renown.

Anthropology of the early twentieth century was marked by a rejection of the evolutionary theories that had dominated the discipline in its earliest days. The attempt

to derive cross-cultural generalizations from specific observations—a concern that had so preoccupied the evolutionary anthropologists of the nineteenth century—now faced ardent opposition from a new, burgeoning, school of American anthropology. The Boasians, named after their founder, Franz Boas, favored in-depth, first-hand ethnographic study of individual societies. Celebrating the rich variations found across human societies, they rejected the suggestions of regularities proposed by the evolutionists who preceded them.

In this regard, the University of Michigan, where Carneiro earned his PhD in anthropology, was an outlier. There, evolution was at the center of a sizzling debate. The anthropology department had been founded by Julian Steward, a noted evolutionist and cultural ecologist. When Steward left in 1930, he was replaced by Leslie White, perhaps the single-most vocal defender of evolutionism during this contentious period.

Leslie White, believing that the study of cultural change had been neglected, revived interest in the foundational works of nineteenth-century evolutionists. Among these, he showed special interest in Lewis Henry Morgan, who championed a model of social transformation proceeding from simplest to most complex. Drawing from a wide inventory of ethnographic data, Morgan proposed a series of stages that he believed to be universal and inevitable (Morgan 1877:3). In Morgan's progression of stages from "savagery" through "civilization," centralized governance arose as a means to control property ownership and its transfer. Thus, the state, with its laws and coercive powers, was a defining feature of "civilization."

White set about to develop an evolutionary model of his own. Following Morgan, he sought universal principles that would account for increasing organizational

complexity over time. In this model of culture change, technological advancement increased the amount of per capita energy that societies were able to harness, and drove polities toward "higher levels of integration" (White 1949, 1969).

White led the anthropology department at Michigan from 1930 through 1959. During that time, he brought onto the growing faculty, his former students, Elman Service and Marshall Sahlins, both advocates of their own integrationist evolutionary models. Like Morgan and White, Service understood evolution to consist of increasing organizational complexity. Service viewed this progression, however, as voluntaristic: in an exercise of agency and rationality, people developed governing institutions for the managerial benefits they afforded. It was in such an environment that Carneiro worked toward his PhD with both White and Service serving as advisors on his dissertation committee.

In order to fulfill the requirements of his degree, Carneiro and his wife, fellow student Gertrude Dole, carried out fieldwork in the Amazon Basin of Brazil. They selected a Kuikuru village, located along the remote upper reaches of the Xingu River, an affluent of the Amazon. The observations he made there would profoundly impact his life's work. Ironically, it was there, among the Kuikuru—a small pre-industrial horticultural society, lacking any form of strong centralized governance—that Carneiro began to formulate his own theory of the origin of states. His paradigm would diverge from the work of his mentors in important ways.

In his 1957 dissertation, entitled *Subsistence and Social Structure: An Ecological Study of the of the Kuikuru Indians*, Carneiro wrote, "In my opinion the tribes of the Upper Xingu retain as much political autonomy as they do precisely because they have

not been forced to band together more often for their common defense" (315-316). He went on to say,

> Warfare, leading as it does to defensive alliances on the one hand, and to amalgamation of conquered groups on the other, is the mechanism par excellence by which smaller political units are welded into larger ones. It is the process by which not only confederacies but also kingdoms and empires arise. In any area of the primitive world where warfare has had a low incidence we can expect political evolution to have proceeded the least, and political organization to be characterized by the existence of small, independent communities. The Upper Xingu region affords a prime example of these conditions. (315-316)

As early as 1957, then, Carneiro had already formulated his argument: institutions of centralized governance evolved in response to warfare; without warfare, communities would not be compelled to enter into the sorts of confederacies that could lead to kingdoms or empires. The prominence given to warfare as a critical determinant in cultural evolution distanced Carneiro from the voluntaristic theories espoused his mentors. It countered the contention of Service and others that the leisure time afforded by agriculture led people to create states for the benefits they offer.

Productivity

Another insight that Carneiro developed while working in Amazonia in the mid-fifties, concerned labor productivity. In one of his most revolutionary contributions, Carneiro (1957, 1960) demonstrated the surprisingly high potential of supposedly "primitive" swidden horticulture. His findings challenged the fundamental presumptions of agronomists, economists, and anthropologists.

Prevalent throughout the world's tropical rainforests, swidden cultivation (also known as slash-and-burn) consists of cutting the standing forest, burning the debris, and planting in the charred residue. Because it required plots to be replaced frequently, it had long been assumed that swidden agriculture was labor intensive and low in yields,

precluding the possibility of permanent settlement and thereby the the development of complex political systems.

Yet Carneiro conclusively demonstrated that Kuikuru swidden gardens of the root crop manioc produced a substantial surplus that farmers could have increased had they had any need to do so. He demonstrated through empirical observation and mathematical reasoning that the Kuikuru village population had the potential to grow to many times its observed size without depleting local resources or having to move its settlement (1957, 1960). Whether measured per unit of land or per unit of labor, he argued, the simple slash-and-burn cultivation of the Kuikuru was more productive than the intensive agriculture of the Incas. Contrary to expectations, Kuikuru farmers could meet their subsistence needs with as little as four hours of labor per day, leaving ample time for non-subsistence activities such as the arts, religion, sports, ceremony, and leisure.

The point was crucial. It contravened the prevailing notions that evolutionary progress entailed increased productivity and that creative leisure alone would conduce society toward state development. Carneiro argued, instead, that productivity decreased, rather than increased, with social complexity, an insight that was at odds with views of the time but that has since gained widespread acceptance. In other words—consolidation, long regarded as central to what we call progress—entailed a cost in productivity and freedom, rather than an asset. This argument anticipated similar claims by other scholars by decades.

Fifteen years later Marshall Sahlins, also a former student of White's, would advance a similar line of reasoning in his 1968 commentary, "Notes on the Original Affluent Society," in the book *Man the Hunter* (R. Lee and I. DeVore, eds.). This

famous essay was republished as the first chapter in Sahlin's 1972 volume, *Stoneage Economics*. And, sixty-five years later, David Graeber, himself a student of Sahlins', and David Wengrow, published the best-seller, *The Dawn of Everything: A New History of Humanity* (2021) expanding these very same themes.

Warfare as a determinant in the Origin of the State

It was among the Kuikuru, too, that Carneiro began to contemplate the questions of freedom and coercion in relation to the rise of the state. If non-state societies enjoyed the freedoms he had witnessed among the Kuikuru, and if every increase in political consolidation entails a reduction of individual freedoms—as Carneiro thought it did—why then, would humans forego the freedoms of pre-state societies to succumb to the constraints of a state? His answer to that was warfare.

In his fieldwork in Amazonia, Carneiro observed that small pre-state societies with ample space to move, would avoid danger by distancing themselves from it. He considered this avoidance strategy, which he called, "fight and flight," to be a universal feature of Paleolithic society (Carneiro 2012:16). The ability to move, he reasoned, explained the absence of consolidation of small Amazonian communities into larger federations. But if warfare were a determinant in the formation of states, and if it were possible to avoid it, then, how does state conquest take place?

Warfare, he answered, disputing the position of many, including Morgan, was neither 'natural' nor 'inevitable.' Warfare, he insisted, required explanation.

In an interview I conducted with him in 2012, he explained it this way:

> Suffice it to say that environmental circumscription was the key to it. It was lacking in Amazonia but present it the Andes. Environmental circumscription changed warfare from a process of "fight and flight," so typical of warfare in Amazonia, to one in which conquest and amalgamation was its usual outcome.

> Thus, in the Andes—unlike in most of Amazonia—autonomous villages gave way to chiefdoms and chiefdoms gave way to states. (pers com., 2012)

He went on to ask, "Now, if the theory seemed to account for the rise of the state in South America, could it do so for other parts of the world? Was it a general theory, in other words?"

He continued,

> When I began looking at other areas where early states had emerged—the Nile valley, the Tigris-Euphrates valley, the Indus valley, the valley of Mexico, etc.—the circumscription theory seemed to hold. Thus the partnering of theory and fact, which I had long espoused, had borne fruit here. A theory, the germ of which had first been planted in a tiny village in central Brazil, had ultimately given rise to a general theory with a claim to having solved an anthropological problem of high magnitude. (pers. com., 2012)

Circumscription

In Carneiro's theory, then, warfare, which drives polities toward greater consolidation, arises when groups are unable to flee. With the strategy of "flight" no longer an option, groups under attack had no recourse other than to enter into warfare. In successive publications between 1970 and 2012, Carneiro refined his central argument. Following on the name of his initial concept, this "The Conscription Theory" hinged on three principal elements: environmental circumscription, population pressure and warfare" (1988:498).

Many scholars lauded this proposal, while others condemned it. Some found it generally compelling, but disputed the particulars. Much of the criticism of Carneiro's theory was aimed at the characterization of the term "*circumscription*." Robert Schacht, for example, observed: "One of the chief difficulties with circumscription theory is its simplistic characterization of 'circumscription' itself" (1988:438). Critics also

maintained that Carneiro's elements had not been satisfactorily defined in a way that would permit quantification.

Carneiro honed his criteria for "circumscription" numerous times after he first proposed it. To defend his stance, it was incumbent upon him to show that circumscription of a specified type was present in every case where the state emerged.

In publications throughout his career, Carneiro made a point of including metacommentaries on the processes of theory building. He often stated that if a theory is well substantiated, it should withstand and benefit from the rigorous scrutiny of peers. As early as 1970, he wrote, "What distinguishes a successful theory from an unsuccessful one is that it can be modified or elaborated to accommodate the entire range of facts" (1970:736). Over the next four decades, Carneiro supported his theory with new data, including evidence of apparent exceptions provided by one-time critics.

Over time, Carneiro recognized several types of circumscription, including geographic impediments, resource concentrations, and social circumscription. By 1988 Carneiro had expanded the conditions of circumscription substantially. In a 1988 issue of the *American Behavioral Scientist*, dedicated solely to discussions of his theory, Carneiro wrote, "the circumscription theory allows for the emergence of states in areas that are not geographically confined" (1988 p. 499). In such settings state formation could could take place, but at a slower pace. The point is suggestive. If population densities continue to rise in the future, the possibility exists that circumscription, if kept alive as social and political divisions, may become the rule.

Quantification

A problem that has plagued circumscription theory since its inception is how to operationalize it. Without well-defined concepts with which to express relationships in quantifiable terms, it was not possible to evaluate the validity or reliability of the claim.

The highest expression of his work, Carneiro thought, would be in mathematical terms. If he were able to express the relationships he described in mathematical form, he might submit them to a test of predictability. And if he was correct— that is, if circumscription led to warfare and to successively larger and more politically complex organization, culminating in the state—it should be possible to predict the length of time from the onset of state formations to their manifestations (Carneiro 1972:244-247). Thus, over the years, he proposed a number of equations that would allow him to test his theory.

However, it was Rob Graber, the editor of this collection, who succeeded in refining and testing the model. In several articles and a book, *A Scientific Model of Social and Cultural Evolution*, Graber demonstrated that concepts like circumscription and population upon which the theory was based could be "formulated and interrelated quantitatively" (1995:12).

Graber concluded that the concept of circumscription—or, as he referred to it, "inhibited expansion"—could be quantified in terms of its observable demographic consequences (Graber 1995:38). He was able to do so by calculating a "crowding rate" as the product of the rate of population growth times the "inhibition of [areal] expansion" (Graber 1995:146-7). He then tested the predictability of this model by applying it to the well-documented case of westward expansion in the colonization of North America

between 1625-1900. This test case allowed him to corroborate the hypothesized relationship between circumscription and war (1988, 1995).

These results led Graber to conclude,

> Together, these quantitative and qualitative findings argue powerfully that material conditions indeed are the predominant inhibitors of areal expansion, and vitally contribute, as such, to the density increase that drives political evolution in particular, and sociocultural evolution in general. There seems little doubt that future work will confirm and extend the results. (Graber 1995:147)

Ethnology vs. Ethnography

Among Carneiro's greatest contributions to twentieth century social science are his notable metacommentaries on the relationship of theory to observed phenomena. As he continued our 2012 interview, he stated,

> I felt strongly that the best theory came from immersing oneself in the facts. Phenomena had locked within them the secret of their original development. That was the general understanding I had between theory and facts when I went into the field. Little did I think, however, that the ethnographic facts I was about to encounter would lead me, step by step, and over the course of time, to the formulation of a general theory, a theory of the origin of the state. (pers.com. 2012)

Despite the great interest that awaited its publication, Carneiro never authored a book-length ethnography. Had he done so, it might have become a classic. Indeed, together with the equally precise and complementary dissertation of his wife, Gertrude Dole, it might have become one of the most thorough ethnographies of its time. But it was not this level of investigation that appealed to his inclinations. Instead, Carneiro saw ethnography as a step toward a larger goal—a comparative project that would contribute to our understanding of humankind. In his approach, ethnography **was merely one part** in the search for cross-culturally validated regularities.

Thus, Carneiro preferred to view the Kuikuru as an *example*, and his field experience among them, as an opportunity to "provide evidence" for his broader

generalizations. In this scheme, ethnography and ethnology were both incomplete enterprises, each requiring the other as complement in order to achieve comprehensiveness.

In short, Carneiro was interested in pursuing a ***science of the social***, based on observation, that would lead to the discovery of laws as does observation in the natural sciences. The task, as he saw it, was not about finding variation; this was the role of ethnographers. His purpose instead was to identify the patterns within that variation.

In this science, theory should be built through the rigorous study of historical evidence derived from experience: both his own field observations and those of others. He was aware that the adequacy of his generalizations would be only as good as that base of evidence. He made every attempt to refine his conclusions as new ethnographic findings came to light.

Exhibiting the elegance that so characterized all of his work, he concluded a 1987 paper by noting, "In unity there is an economy of elegance, not to say, beauty. And if increasing complexity is the hallmark of evolution, increasing simplicity of explanation should be the goal of those who study evolution" (126).

Coda

The production of knowledge, like language, is an interactive project. In many ways, knowledge, including scientific knowledge, is a collective enterprise. We are fortunate, with this volume, to review part of the intellectual path of a great theorist over the course of six decades. By so doing we are able to better understand the theory-building process.

Throughout his career, Robert Carneiro emphasized the key role of collegial interchange in the theory-building process. It is rare, however, for scholars of his stature

to foreground the processes of knowledge production with the kind of acumen and reflexivity exhibited in the work of Robert Carneiro. In Robert Graber, Carneiro found a much-appreciated partner in that dialogue. About Graber, he wrote, "[his] work points the way to future advances waiting to be made by ethnologists in the study of cultural evolution" (2003: 286). As he anticipated, this volume is a step in those "future advances."

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