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Reframing Comparative Perspectives on Long-Term Change

A Review of Social Complexity and Complex Systems in Archaeology *by Dries Daems (Routledge, 2021)*

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Across the historical social sciences, we are at a conceptual juncture. An array of weaknesses has been exposed in the comparative frame that has been dominant for much of the last two centuries. Progressivist, step-wise framings of humanity's deep history, in which socioeconomic relations coursed through successive stages (e.g., band–tribe–chiefdom–state), defined through the pyramiding of basically synchronic historical and ethnographic accounts, simply cannot be stretched to fit the diversity revealed in an ever-expanding global body of historical facts. Over the last decades, through both theoretical advances and the broadening and strengthening of a dirt-derived, empirical record of diachronic change, it has become evident that human histories took many distinct regional paths, that long-term change at any scale was rarely, if ever unidirectional, that there was no inherent tendency toward larger, more intricate social formations, and that most transitions, even along key organizational dimensions, were not transformational or categorical. With finer chronological resolution, we see that even key political and economic institutions and the scalar dimensions of human social relations do not necessarily shift in lockstep.

In this brief, ambitious volume, Dries Daems (p. 6) poses the question: "how to explain the unmistakable changes in social complexity in human societies from the Pleistocene until today." The book aims to offer an alternative to extant theoretical frames and "to champion complex systems thinking as a major conceptual approach to study social complexity in archaeology" (p. 1). The intellectual sweep of the author's coverage is wide and up to date. Arranged in five chapters, the book begins with an introduction that grounds the concept of social complexity and reviews the history of systems thinking in archaeology. Chapter two outlines the development of social evolutionary thought, and then processes associated with urbanization and state formation. The third chapter delineates the author's theoretical approach and model, while the fourth examines a case example that traverses a nearly 4000-year sequence of change in Anatolia. Chapter five

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endeavors to bridge the author's systems-based approach with the case study, while also serving up a few prospects for future research.

Daems is aware that the concept of "social complexity," focal to his approach, is both multidimensional and potentially fraught. He recognizes that all human societies, large and small, are intrinsically complex systems, characterized by multitudes of interpersonal interconnections. The author also is keenly cognizant that "social complexity" too frequently has been used as a catchall category, contrasted in weak dualistic ways, and that the components of "complexity" are more productively teased apart into distinct analytical dimensions, which include considerations of scale, differentiation of components, and the intensity and volume of interactions/transfers of information (for a parallel, decoupling perspective see Blanton et al. 1993).

In building his approach, the author also aims to deflect past criticisms of systems thinking in archaeology, which often has been seen as too deterministic, functionalist, and insufficiently integrative of individual decision making/agency. In response, Daems outlines an explicitly multiscalar frame that aims to reintegrate the individual in a systems-based perspective by prominently positioning parameters of interpersonal interaction and community formation as bases for social organizational variability. At its core, Daems' model is that "information processing constitutes an important driver of societal change, whereas energy processing constitutes its overall constraints" (p. 20). For the model, shifts in flows of information and energy lead to disjunctions and so bifurcation points on divergent paths of long-term change.

Although not an easy read, the first three chapters offer much to consider as the author wrestles with the definition and justification of core elements of his model in the context of deep legacies of social evolutionary thought. We are treated to capsule discussions of (and efforts to bootstrap) current multidisciplinary literatures on settlement scaling, social networks and their scalar parameters, and complex systems thinking, among other intellectual tools and bodies of thought that productively draw from and cross disciplines. In constructing his model of change, Daems adopts a key scalar hinge point at which interpersonal contacts exceed human cognitive constraints, Dunbar's (1993) number (ca. 150 people). Beyond this parameter, as group size increases, the strength of the bonds between people within groups systematically decreases. Larger social units only emerge when the limits imposed by the ability of the member to handle relationships of now different intensities are eclipsed (Coward 2010), which generally requires the establishment of new social institutions as cooperation extends to those linked by "weak ties" (Granovetter 1973).

To this point in his argument, I find much to agree with in Daems' framework. But when the book turns to the role of institutions and larger-scale social configurations, the approach inexplicably becomes more deterministic in both its core

assumptions and implied expectations. Perhaps, part of the problem lies in the rather mentalistic definition of institutions that he applies, focused on norms and rules, which he then assumes to constrain change. But, the adoption of a more active, agentic perspective on social institutions (e.g., Bondarenko et al. 2020, Holland-Lulewicz et al. 2020), focused on practices and institutional interplay, could have fostered a recognition that institutions often foment variability and change, not just stifle it. The model also misses a chance to integrate important elements of variation when it fails to problematize how resources are procured and distributed in different contexts. The model seems to presume that certain individuals or institutions were able to monopolize resource streams, and that has markedly different implications for social practices as compared to situations where the procurement of resources were more evenly distributed (e.g., Blanton and Fargher 2008; Smith and Codding 2021). As a consequence, the potential for more equitable resource distributions was disregarded as were less exclusionary means of wielding power (cf. Blanton and Fargher 2016:254).

Likewise, by hitching the conceptual model to an adaptive cycle resilience frame (e.g., Holling and Gunderson 2002), Daems embraces, rather than eschews, rather deterministic, stage-based constructs. His expressed commitment to inject avenues for agency, diversity, and change into the systems-based approach seems to dissolve in statements, such as "over time, an institutional environment can be created that greatly constrains the continued ability to change the internal set-up of society. Existing structures become entrenched as they prevent the creation of new avenues, even when faced with changing external stimuli. Once established, a system of institutional norms creates an interlocking of interests that keep it in place, even if individual devotion to the underlying values starts to wane" (p. 80).

The author's chapter 4 launch of the model, with a case example drawn from millennia of history in the Anatolian past, is less than convincing in the absence of explicit expectations or even the roughest of test implications. In lieu, the reader is left with what seems too much like an ad hoc effort to reconcile an extant model with an empirical case in a manner barely more formal than all-too-standard archaeological narrative practice. Nevertheless, it is worth remembering the great historian Fernand Braudel's (1970: 166) comparison of models to ships. He noted: "What interests me, once the ship is built, is to launch it, to see if it floats. The moment of shipwreck is always the most meaningful." Through the Anatolian example, it becomes clear that while there are promising green shoots in Daems' model when it comes to community formation, the model, and its core tenets, are still premature in regard to elucidating the different historical pathways taken in the construction of larger polities. For the former, broadening the long-held archaeological emphases on resources and energy so as to include and problematize human interaction and information flows is a timely conceptual direction, but when it comes to the larger spatial planes on which polity formation took place,

Daems' heuristic construction requires a deeper, fuller, less deterministic consideration of institutions, their interconnections, variable distributions of resources, and the different networks through which information can be transferred and shared at larger scales.

We are at a critical moment when it comes to comparative perspectives in the historical social sciences. Long-entrenched, Victorian-era conceptions of change (progressive, stage-based, unilinear, categorically transformational) are no longer compatible with the expanding, global knowledge base regarding the alternative pathways that peoples in the past took. Yet, at the same time, with our present world facing environmental, governance, equity, sustainability crises, we must find systematic and coherent ways to draw on diachronic processes, patterns, and knowable outcomes from humanity's past, to help us understand how people got big things done and whether (or why) they were sustainable or not. Toward the establishment of new conceptual frames more in concert with what we know, Daems in this volume has advanced several ideas and analytical directions worth pursuing and building on. And yet, much additional work that includes the continued eclipsing of disciplinary silos still must be done.

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