

DRIES DAEMS, *Social Complexity and Complex Systems in Archaeology*. Routledge, Oxon 2021. 264 pages, 31 b/w illustrations, hardcover, ISBN 978-03-6747-858-2; eBook ISBN 978-10-0303-696-8.

All disciplines dealing with understanding the formation and development of human communities have grappled with the concepts of complexity and societal organisation. Although it is widely acknowledged that complexity is present in all human interactions,¹ and that societies are dynamic phenomena embedded within specific cultural, chronological and geographical contexts, archaeological attempts to characterise social complexity have focused in particular on what constitutes a complex society, often seen as a pinnacle and inevitability of human societal development. Unintentionally, in our work to understand what is considered such an overt expression of social complexity, archaeologists have pared down the nuances and diversity inherent in human interaction and behaviour, to what have been considered fundamental and universal characteristics that signify societal complexity, such as defining hierarchies, and the administrative and economic organisation of a group. Whilst this has revealed interesting and important general trends within and between different societies, it has directed research in such a way, that discussion of social complexity commonly becomes descriptive rather than explanatory. It has also created an artificial division between agent-based, choice-centred approaches, and large-scale structural and systems-based approaches. Fortunately, more recently, there have been considerable efforts to bridge this false dichotomy,² and include more explanatory models where social complexity is used as a conceptual tool rather than considered as a state of being. Aided by the increased use of modelling techniques, such work emphasises and embeds the role of human behaviour and its cultural contexts within the networks of interaction that characterise social complexity and societal organisation, whilst still emphasising that many social trajectories can share particular structuring principals, useful for elucidating large-scale comparative trends.³ It is within this framework that the approaches and theories outlined in ‘Social Complexity and Complex Systems in Archaeology’ sit.

In this book, Dries Daems breaks down a very complicated and much-debated set of concepts and methods in an accessible format, before outlining his personal approach

through specific archaeological case studies. As such, the book is especially useful to students and scholars at all stages who need a critical introduction to the concepts of social complexity and social systems, particularly in relation to providing a wide bibliography for delving deeper into this contentious topic. The first two chapters of the book⁴ are dedicated to introducing the reader to the concepts of complexity, social complexity, systems theory and complex systems thinking. Daems outlines how these have been defined and applied more broadly in the hard sciences, whilst critically and respectfully addressing the extent to which they have been successfully applied within archaeology, looking at what elements of society have been traditionally seen as signifiers and drivers for social complexity, and advocating for a nuanced dynamic consideration of human behaviour.

In Chapter 3,⁵ the author builds on his discussion of social complexity by discussing and advocating research that places interaction, specifically in terms of energy and information exchange, at the heart of characterising and charting societal trajectories. In this way, societies of different types, periods and contexts can be examined in broad terms related to the exchange and flow of information and resources, using multiscalar thinking that integrates a range of data. These data include those traditionally considered in relation to social complexity, such as the organisation of settlements and environmental conditions, these are then linked to more individualised sociocultural behaviour, bringing them together to consider local, regional and supraregional frameworks. Within this, Daems convincingly outlines the ways in which customs evolve and become established normative practices within societies, directing particular societal trajectories and responses to a range of conditions. Building on the long-established concept of *habitus*,⁶ he discusses the ways in which repeated ways of doing within a community will lead to the formation of new social systems and societal behaviour related to accepted group norms. Again, here the discussion emphasises the role of interaction, and that through characterising different types and degrees of interaction we are able to chart the creation of, and relationship between, structured behaviour and the development of

1 KOHRING, WYNNE-JONES 2007, 2.

2 See contributions in: KOHRING, WYNNE-JONES 2007.

3 KNAPPETT 2013. – Contributions in DONNELLAN 2020.

4 pp. 1–62.

5 pp. 63–116.

6 MAUSS 2009 [1920/53–1941/48]. – BOURDIEU 1977.

broader social systems and organisation, each affecting the other. This allows understanding of a range of society types relating to different geographical locations, periods of time and milieux, whilst also enabling a comparison between trajectories of a range of societies, pulling out generalised similarities that could offer key insights on a larger scale, whilst also considering more localised influences and habitus. As part of this, the author has also attempted to sidestep the conceptual baggage associated with terms such as chiefdom or state by talking in terms of communities, polities and kingdoms, which, whilst having their own difficulties, do offer a less inherently evolutionary alternative to conceptualising social organisation. In this respect, a good portion of the chapter is dedicated to the definition, characterisation and understanding of polities as a broad term for societies with particular social, political and economic characteristics. Following seminal work such as that by Colin Renfrew and John F. Cherry,⁷ Daems links polities to ideas around a symbiotic relationship between social complexity and the processing and flow of information. He believes that a key defining characteristic of a polity is the projection of power structures, and embedding information systems, beyond a group's own community and territory, what seems to be a form of sociopolitical colonisation.

As part of his discussion of the conceptualisation of complexity and the different defining factors that can be considered, Daems delves into the idea of selection pressures that societies face, linking these to different push and pull factors which affect interaction, flows of information and resources, and the establishment of repeated social practices, and therefore, the trajectory of social complexity a community will take. In particular, he focuses on what have traditionally already been considered as important aspects promoting or restricting social complexity, relating to economy, governance, subsistence and production strategies, and discusses the ways that the nature, degree, and extent of interaction between people relating to information creations, exchange and processing are the driving forces that create particular outcomes related to economy, governance etc. Through his discussion, Daems highlights some of the ways archaeologists identify and explain why and how certain social, economic and subsistence trends form. This is part of the epistemological move away from using such factors as a universal checklist with which to confirm the presence or absence of complex societies that characterised much pioneering early work⁸ and whose paradigmatic legacy is still visible in the topics used to identify social complexity such

as the organisation of production, the presence of monumental architecture, and evidence of social stratification.

A particular strength of these chapters, as well as the book more broadly, is the way in which the author introduces, and explains, topics and terms whilst building up discussion layer by layer so that the reader is not immediately overwhelmed but instead can follow the building blocks of his arguments, criticisms and the model he himself advocates. That said, in places the text is still quite dense and difficult to follow, and in the online version of the book I was reviewing, the majority of the diagrams and figures were sadly completely illegible, which contributed to the inaccessible nature of some of the text.

Chapter 4⁹ represents the culmination of all the discussion thus far in the book as the author presents how using an energy- and information-focused model, alongside the consideration of push and pull factors and selection pressures, he is able to chart the rise and fall of social complexity during different periods in southwestern Anatolia. Through using a diachronic approach spanning from the Chalcolithic through to the Hellenistic period, the chapter considers the archaeological evidence in relation to numerous factors that are commonly used to determine societal complexity such as environment, settlement size and organisation, economic and administrative organisation, visible differentiation and material culture, in order to trace evidence for and the extent of interaction. Naturally, considering Daems' specialism in the Iron Age to Hellenistic Anatolia, discussion relating to these periods is certainly more detailed than that of earlier times; however, this may also be due in part to the nature of the available data, which is an unavoidable area of weakness in the chapter, as acknowledged by the author himself. Fundamentally, the case studies are based on the data available at the time of writing, which is certainly patchy for different periods and different sites. As such, although providing a very interesting generalised overview, the data on which it is built is not necessarily uniform or indeed comparable. This in fact emphasises the call by the author in the preceding chapters for archaeologists to work more openly in terms of sharing their data, and making it open access so that such large comparative case studies can be successfully undertaken. Despite these difficulties, the author's illustration of how interaction, information, and resource flows lead to different social systems, organisations and levels of complexity is valuable, and certainly highlights the promising avenue a focus on information as a key resource and factor in sociopolitical and economic behaviour can be for explaining and characterising the range of societal trajectories

7 RENFREW, CHERRY 2009.

8 RENFREW 1972.

9 pp. 117–196.

we come across in different periods and different places. Indeed, in his case study discussion, Daems goes so far as to highlight how the breakdown of networks of communication and information flows within the Hittite empire led to failed societal cohesion, with new social structures and complexity emerging from localised practices which adapted to changing sociopolitical and economic pressures and circumstances.

Chapter 5¹⁰ brings the book to its conclusion, summarising the holistic approach put forward in the other chapters, and arguing for the increased utilisation of quantitative methodologies for recording and charting social complexity through the application of statistical approaches and modelling. Certainly, for prehistoric periods in Anatolia, the Aegean and more broadly, the application of modelling tools and network analysis has been increasingly applied for a range of different questions and cultural zones, and is becoming quite a common analytical tool.¹¹ Additionally, the evidence types discussed in the book are also already widely used to consider and identify social complexity within and outside of the study area presented. As such, this book not only gives a good introduction to this topic but also adds to the increasing body of literature illustrating the benefits of such network and modelling approaches with good bibliographic examples for further reading. In line with existing work,¹² Daems' case study and discussions provide additional evidence for the very important connections between different populations and their social trajectories, whilst also directing us to consider more broadly the value of general principles and evidence sources we use for identifying and explaining societal developments. In particular, 'Social Complexity and Complex Systems in Archaeology' considers societies principally as systems for information processing and highlights how energy and information flows act as defining drivers of social complexity, as well as key factors in both societal growth and decline. Certainly, through focusing on societies as principally related to the transferral and creation of information placed within a behavioural framework, Daems demonstrates the ways in which modelling such information management offers a significant conceptual, methodological and interpretive avenue for research. By considering everything as part of a dynamic flow of physical and cognitive resources, we are no longer restricted to trying to identify universal factors that are seen

to characterise and differentiate between a chiefdom or city state for example, but instead we have room for a dynamic spectrum of possibilities, where the absence of one defining element does not preclude the absence of complexity. On a personal level, it gave me much food for thought, not only in terms of past societies but also considering what this means for the trajectory of modern societies with the rise of the internet and democratisation of information access.

Whilst outlining relatively new conceptual tools, it must be acknowledged that as with all broad models that aim to provide large scale patterns, there is a degree of generalisation in the book's discussion and examples, and Daems still relies on the evidence types and defining factors that are already widely used. Whilst his approach, and the book generally, clearly advocates and includes broad behavioural aspects which is very welcome, there is sadly still a general lack of agency, and consideration of choice and identity. Instead, people are seen to be constricted by wider economic, political and normative systems, with little discussion about how communities negotiate and adapt their identities, or indeed how and why they accept or resist socio-economic and political changes; things I would argue are essential for understanding why certain societal trajectories take place. This lack of agency is particularly evident in the consideration of polities and the imposition of a polity's societal framework onto another community, with some but very little discussion of regional and local trajectories and their place in and relationship to wider trends. As is regularly highlighted in criticisms of structural modelling, there is considerable evidence that even when a group colonises or influences another, communities still maintain elements of their original identity, and that social mechanisms visible on a broad scale may not reflect the society as a whole. This has been charted in a range of factors from prehistoric Aegean pottery traditions,¹³ and even the impact of Romanisation on the British population,¹⁴ where local populations adopted and merged local and 'foreign' socio-political and economic elements. It is often the case that whilst such large-scale models provide important broad general trends (and many do not aim to highlight specific regional or cultural nuances, as acknowledged by the author in his concluding chapter), their broad generalisation in essence hides the more detailed resolution with which we can investigate integration, adaptation, resistance, and the important role of choice, which characterise human interaction and cognition.

In summary, I would recommend this book to anyone wishing to have an up-to-date and interesting discussion of

¹⁰ pp. 187–211.

¹¹ E.g. DE GROOT 2019. – Contributions in: KOHRING, WYNNE-JONES 2007. – KNAPPETT 2013. – KNODELL, LEPPARD 2018. – DONNELLAN 2020.

¹² See contributions in: KOHRING, WYNNE-JONES 2007. – KNAPPETT 2013. – KNODELL, LEPPARD 2018.

¹³ KIRIATZI 2010.

¹⁴ HINGLEY 2017.

societal complexity, complex theory and social systems approaches. The author has successfully taken a very difficult topic and highlighted its key tenets in a largely accessible format, whilst also advocating for valuable methods to apply for processing the different range of archaeological evidence we are left with through which we must reconstruct past social complexity.

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