wishes to understand this relationship better. The book is also particularly timely in view of the recent resurgence of interest in these issues in the anthropology of Christianity.

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DOUGLAS P. FRY, *War, Peace, and Human Nature: The Convergence of Evolutionary and Cultural Views*, Oxford: Oxford University Press 2013, 582 pp.

Is war inevitable? Is organized lethal aggression prevalent in our deep evolutionary history and, if so, does warfare's antiquity mean that humans have a strong proclivity for violence over peaceful cooperation? Anthropologist Douglas Fry doesn't think so. Fry has published widely on aggression and conflict since his days as a doctoral student at Indiana University, where he studied socialization for aggression among Zapotec children. *War, Peace, and Human Nature* reflects Fry's thirty years of research on the topic. To produce this edited volume, Fry gathered eminent contributors from a variety of fields, including archaeology, anthropology, primatology, ethology, and evolutionary biology. Unfortunately, this book's initial expense (£64), length (582 pages across 27 chapters), and limited formatting options deterred many and caused several early reviewers to focus on a handful of chapters, especially those by Brian Ferguson, who posted scanned versions of his contributions (Chapters 7 and 11) on his faculty website. In February 2015, a paperback was released by OUP for £26, while ebook versions are now available in a variety of formats. A lower price and increased formatting options will enable this timely book to reach a larger audience in its entirety. It is well worth a second look, but its noticeable flaws remain.

War, Peace, and Human Nature is organized into six broad parts. The first, 'Ecological and Evolutionary Models' (Chapters 2-5), introduces major topics in evolutionary biology, including game theory, multilevel selection, and the complementarity of ultimate and proximate levels of evolutionary explanation. Peter Verbeek (Chapter 4) writes with particular

clarity when he asks 'whether war, as an organized form of lethal aggression, is species-typical or atypical for the human species' (p. 63). In other words, Verbeek asks whether war is either (1) a context-dependent behaviour that is commonly shown by members of the species (species-typical) or (2) a context-independent behaviour that is infrequently shown by members of the species (species-atypical). Much later, Anna Szala and Douglas Fry (Chapter 23) conclude that the restraint against conspecific killing in humans is species-typical (p. 452), whereas conspecific killing in humans is a species-atypical behaviour (p. 469; see also pp. 13-14). This conclusion, however, differs from those of several contributors to Part 1. David Barash, for example, in 'Evolution and Peace: A Janus Connection' (Chapter 2) concludes, '[i]nsofar as we are subject to genetic influences, not determinism, it is equally certain that just as these influences don't mandate violence, neither do they mandate nonviolence. We have within us the biologically generated, Janus-like capacity to face either direction…' (p. 36). Hanna Kokko (Chapter 3), citing research on aggressive behaviour on a variety of organisms, reaches a similar conclusion when she states: '[t]he somewhat depressing message from biology is that aggressive interactions, including ones where conspecifics can be killed, are certainly an expected part of life…. The upside is, perhaps, that much of aggressive behavior is also predicted to be very plastic, tending to surface only when the unconscious calculations predict that gentler routes to success are not more profitable' (p. 51).

Part two, 'Lessons from Prehistory: War and Peace in the Past' (Chapters 6-11), addresses the question of warfare's antiquity by marshalling archaeological evidence from North America (Chapters 8 and 9) and Europe and the Near East (Chapters 10 and 11), as well as ethnographic evidence of groups of foragers from around the globe (Chapter 9). These chapters endeavour to overcome the hitherto shallow temporal focus on warfare during the Neolithic period, finding that, while there is evidence of periodic homocide during the Pleistocene, warfare may be attested only recently, arising approximately 12,000 years ago. However, Brian Ferguson (Chapter 7) and Robert Kelly (Chapter 9) are quick to point out how difficult it is to distinguish between homocide and warfare in the material record. Nevertheless, Jonathan Haas and Matthew Piscitelli (Chapter 10) conclude that 'there is extremely limited empirical evidence of any warfare among past hunter and gatherers…' (p. 184). More importantly, Kelley (Chapter 9) observes, 'it is not useful to ask whether hunter-gatherers … are peaceful or warlike; we find evidence for both among them. The better question is: when do foragers resort to war?' (p. 158). Kelly continues, '[e]ven with a genetic proclivity for violence, we can eradicate it if we remove the conditions that make war seem

unavoidable [which begs the question] under what conditions does the benefit of cooperation outweigh the benefit of competition, and, assuming that we would like to rid the world of war, how do we encourage those conditions for cooperation?' (p. 165). Haas and Piscitelli (Chapter 10) also call for a different set of questions, saying that, while an understanding of warfare's antiquity is important, they wish to 'understand *why humans go to war, why wars start and stop, and what is the role of warfare* in either the biological or cultural evolution of humanity' (p. 184, emphasis in the original). Haas and Piscitelli's 'The Prehistory of Warfare: Misled by Ethnography' (Chapter 10) goes on to summarize the benefits and perils of using ethnographic data to make inferences about warfare across human history and emphasise the importance of archaeological data to answer questions about human history before the evolution of socio-political complexity. They highlight a number of important incongruities between the results of ethnographic and archaeological surveys before concluding: '[b]y confining ourselves only to the record of the modern world and historical depth of written history we are disallowing 98 percent of human history, diversity, and creativity, as well as our incredible uniqueness as primates. Assuming that warfare has been constant since the beginning of human history, based on the present, relieves us of responsibility for investigating the causes of war and the potential for peace' (pp. 184-5).

Part three, 'Nomadic Foragers: Insights about Human Nature' (Chapters 12-17), uses ethnographic descriptions of extant nomadic foragers to make inferences about the selection pressures to which humans adapted in what evolutionary psychologists call the 'environment of evolutionary adaptedness' or EEA. Chapters 12, 13, and 14 provide case-study data on particular nomadic forager societies, while Chapter 15 provides data on six south Indian foraging societies, and Chapter 16 provides sample data on 49 nomadic forager societies. A number of conflict management and resolution strategies (e.g., certain types of religious rituals) are noted throughout these sections, while evidence of warfare is found to be rare across cases. Part three, however, suffers from several methodological problems and does not adhere to Fry's own criteria for 'achieving scientific objectivity' in the study of warfare. First, when selecting nomadic forager societies Fry states emphatically: '*using a sample selected on the basis of explicit criteria is far better than self-selecting ethnographic examples* […] to bolster a particular argument. Self-selection is ripe for bias' (p. 10, emphasis in the original). Despite this call for methodological rigour, five chapters in *War, Peace, and Human Nature*, including the majority of chapters in Part three, are vulnerable to the charge of ethnographic

cherry-picking[1] (Chapters 12, 13, 14, 15, and 27). Secondly, Fry states quite correctly that there is a 'semantic muddle' in the literature with regard to what researchers mean when they refer to groups of 'hunter-gatherers'. Fry offers a more precise typology by differentiating between (1) nomadic egalitarian bands, (2) horse-dependent bands, and (3) hierarchical (non-egalitarian) semi-sedentary or sedentary hunter-gatherers. He then describes the selection criteria for selecting the groups appropriate to analysis in the 'forager analogy' (i.e., nomadic egalitarian bands). Confusion, however, emerges when the contributors to this section fail to adhere to a shared typology or selection criteria for the inclusion of the human groups appropriate for use when making the 'forager analogy' (Chapters 12-19). Thirdly, the contributors in Part three do little to address the limitations associated with using ethnographic data to make inferences about warfare in human evolutionary history, including those outlined by Haas and Piscitelli in Chapter 10.

Part four, 'The Primatological Context of Human Nature' (Chapters 18-22), uses comparative primatological data to provide an evolutionary perspective on the antiquity and function of warfare. Chapters 18 and 19 contrast behavioural traits towards aggression/passivity in bonobos and chimpanzees, while Chapters 20 and 22 survey experimental data on the social interactions and conflict resolution strategies of non-human primates. In Chapter 21, Robert Sapolsky focuses on the role of 'culture' in conflict management and prosociality in baboons, particularly amongst a 'Forest Troop', a group of baboons that he has been studying continuously since the mid-1970s. Oddly, while Fry dedicates the five chapters of Part four to the contributions of primatological data, his comments in Chapter 1 suggest that he is unsure of their utility. Fry, like Peter Verbeek (Chapter 4) and Nikolaas Tinbergen (1968: 1414) before him, believes 'that each species should be studied in its own right. So, to understand peace and war in humans, we should look toward the human data directly, and to understand intergroup and intragroup killing in chimpanzees, we should study chimpanzees directly' (p. 13). Despite this early call for a focused approach on war and peace in humans, primatological data becomes a cornerstone of Fry's summary in Chapter 27, where he states, '[t]he grand conclusion, therefore, from archaeology, nomadic forager studies, primatology, and evolutionary theory, as applied afresh to aggression, is that in humans, war is recent, not ancient, and war is a capacity, not an evolved adaptation. In short, war was rare to nonexistent under the conditions in which our species evolved but obviously prevalent in more recent times that are dramatically different

[1] 'Cherry-picking' is a form of the fallacy of selective attention which preferences bodies of evidence and experimental designs likely to confirm a given position.

ecological and cultural circumstances' (p. 543). Fry's 'grand conclusion', however, is at odds with the conclusions drawn from the primatological and ethnographic data by Michael Wilson in 'Chimpanzees, Warfare, and the Invention of Peace' (Chapter 18). According to Wilson, '[i]f humans have lived with chronic warfare for long stretches of evolutionary time, various psychological mechanisms underlying warfare in humans are plausible candidates for adaptation…. If this view is correct, then peace, not war, is the invention—a profoundly important and good invention, but an invention all the same. […] Like language, war appears to be a human universal—or at least nearly so. […] In contrast, peace appears to be an achievement…' (pp. 379-80).

While Parts two through four are organized primarily by data source (archaeological, ethnographic, and primatological, respectively), Part five, 'Taking Restraint against Killing Seriously' (Chapters 23-26), is organized around the topic of restraint against killing and other forms of serious violence. Chapter 23 builds on insights garnered from the primatological data in Part four, while Chapter 25 contains a fascinating discussion of the resistance to killing in military contexts. Chapters 24 and 26 examine cultural mechanisms for restraint against killing using ethnographic data. In Part five, which begins with a chapter co-authored by Fry and Anna Szala, Fry attempts to redress what he considers to be a 'cultural bias' toward the belief that war is ancient, prevalent and ultimately inevitable by turning the conversation to the evidence for restraint in human agonism, which Fry believes is often overlooked and taken for granted. According to Fry, human restraint, while 'vitally important and regularly according, has remained invisible' (p. 14). Fry returns to contend that a 'cultural bias' exists toward a belief in the antiquity and inevitability of war in part six, which consists of a single chapter (Chapter 27). Here, Fry relies primarily on roughly a dozen potentially cherry-picked ethnographies on indigenous cultures to evidence his argument. According to Fry, the prevailing account of war is based not on scientific research, but a particular Western view of nature that is 'passed down over generations, integrated into religious and historical narratives, reinforced in daily conversations, recounted in drama and literature, expressed in political discourse, bolstered by cultural symbols and cherished values, and reproduced as it is learned and absorbed by the young…' (p. 2; see also Chapters 1, 6, and 27).

This final chapter reveals the stark incongruity between what we were promised in Chapter 1 and what we receive during the ensuing 26 chapters. In Chapter 1, Fry sets out to overcome 'the cultural bias' towards the belief that warfare is ancient by 'achieving scientific objectivity'. Fry calls for the elimination of sampling bias, a broad evolutionary perspective, and the need for precise and explicit sampling criteria for groups of foragers. When carried

out in practice, these are small steps in the right direction, but much more is needed to achieve 'scientific objectivity' in the study of human warfare. First, Fry needs to transform his broad predictions about warfare in human history into explicit hypotheses that can be tested with historical and archaeological data. Several of the contributors to this book make significant progress to this end. For example, Robert Kelley's question about the causal factors that may drive foragers to cease cooperation and resort to war (Chapter 9) can be readily transformed into a set of empirical historical predictions. Are increased levels of organised lethal aggression associated historically with increased group size (as argued in e.g., Chapters 5, 7, 8, and 10), high levels of population density (e.g., Chapters 5, 8, 9, 10, 11, and 18), resource scarcity (e.g., Chapters 8, 9, 10 and 11), cultural distance (e.g., Chapters 7 and 11), geographical proximity (e.g., Chapters 7 and 8), sedentism (e.g., Chapters 7, 8, and 11), or socio-economic inequality (e.g., Chapters 7, 8, and 11)? Might one or more of these factors interact in complex causal feedback loops? It may seem obvious, but to answer historical empirical questions of this sort, we need to construct large, historical and archaeological datasets of theoretically relevant variables that were collected systematically from high-quality data sources before being verified by teams of experts. Explicit mathematical models are also necessary to help us to avoid simplistic monocausal thinking, while ensuring that two of the most important aspects of a scientific method are maintained—falsifiability and replicability. A global sampling strategy is necessary to maximize cultural variability and increase the generalizability of the results, while statistical manipulations should be incorporated to account for the much-discussed problem of non-independence between data points or what anthropologists call 'Galton's problem' (Naroll 1961: 15; Tylor 1889: 270).

One notable project, 'Seshat: Global History Databank' (Turchin et al., in press) is beginning to produce the historical data necessary to test competing predictions about the relationship between warfare and each of the causal factors proposed above, in addition to many others. This databank is currently collecting data on over a thousand variables across the last 10,000 years of human history, including approximately 200 variables on warfare alone. The data provided by Seshat allows researchers to test a myriad of historical predictions directly without having to rely on analogues from primatological data (Part 1), largely unsystematic archaeological data (Part 2), or ethnographic data in the 'nomadic forager analogy' (Part 3). Incorporating the data collected in 'Seshat: Global History Databank' is the next logical step for Fry in his pursuit of scientific objectivity in the study of warfare. The contributions of Brian Ferguson (especially Chapter 11) and several others provides some rich data to evidence the claim that war is neither ancient or widespread, while

peacefulness is both ancient and widespread, but much more systematic data are needed to adjudicate between competing hypotheses (such as those forwarded in Steven Pinker's *The Better Angels of our Nature*, 2011).

Fry should be commended for tying together evidence from a variety of relevant disciplines and advancing the study of warfare and peace in human evolutionary history. He needs to hold his contributors to his own standards of methodological rigour and then redouble his efforts toward scientific objectivity. To progress toward this goal, he should transform his broad and encompassing predictions into explicit hypotheses that can be tested with large amounts of systematic historical data that have been collected across a large, global sample of human groups. This approach will lay bare popular and scholastic biases, while allowing us to understand—and hopefully avoid—the conditions in which humans resort to war. 'Seshat: Global History Databank' offers the best example of this approach to date.

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