

Across Atlantic Ice: The Origins of America's Clovis Culture

Dennis J. Stanford and Bruce A. Bradley

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This book challenges longstanding assumptions about the colonization of the western hemisphere by focusing on the exploitation of marine environments as a contributory factor. Dennis Stanford, Curator of North American Archaeology at the Smithsonian, and Bruce Bradley, Professor of Archaeology at the University of Exeter, are recognized experts in the field of Paleoindian archaeology and lithic technology. The book is well illustrated with numerous photographs and sketches, and the inclusion of vignettes based on the authors' cumulative personal experiences lightens the heavier chapters, making the book quite readable.

Respectively, the first three chapters review: 1) the mechanics of flaked stone technology; 2) the construct of Clovis culture; and, 3) the pedestrian transit of Beringia as the sole mechanism by which humans colonized the Americas. All three chapters are excellent and should be of interest to a wide range of scholars and laypeople alike. Chapter 4 outlines substantiated issues with the classic model of "Clovis first," and Chapter 5 summarizes the Solutrean culture of the Iberian Peninsula and vicinity during the Last Glacial Maximum (LGM). Chapters 6 and 7, the scientific crux of the book, put forward the much anticipated qualitative and quantitative "technological correspondences" in which the authors make a case for an historical linkage between the LGM Solutrean culture and the later Pleistocene pre-Clovis, and eventually Clovis, cultures. Chapter 8 makes the case for the maritime adaptation of Solutrean people, a necessary precursor to a North Atlantic migration. Chapters 9 (The Last Glacial Maximum [LGM]: How Bad was the Weather?) and 10 (Living on the Ice Edge: Ethnographic Analogies) close the book by providing a substantive review and fusion of the interdisciplinary science and deep human experience integral to comprehending life during the LGM and in the maritime arctic in general. I found Chapter 8 to be particularly interesting in that it employed a novel use of the caloric expenditures developed in Binford's (2001) *Constructing Frames of Reference* to Solutrean faunal assemblages, with the authors' primary contention being a demonstrated, necessary reliance on marine resources for Solutrean peoples.

Put simply, the authors' posit that the similarities in technology, tool form, and habits of Solutrean and Pre-Clovis/Clovis peoples can parsimoniously be understood as a result of diffusion rather than independent invention and/or convergent evolution. The authors' ideas, which de-

veloped from the late-1990s through an apex in this book, are open to interpretation, as are the thoughts and ideas of their detractors. The authors' contention is not entirely novel, nor universally accepted; to this point, there is a veritable cottage industry dedicated to the refutation of the "Solutrean hypothesis" as it has come to be known (e.g., Strauss et al. 2005, Eren et al. 2013). Aside from seemingly insurmountable debate regarding the quality of excavations at site 'x' or problems with the dating at site 'y,' one of the critiques centers around the intentionality of overshot flaking—a bona fide occurrence in both Solutrean and Clovis. Critics believe overshot flakes are a "mistake" and their appearance in these assemblages is a result of convergent evolution, not evidence of an historical linkage. Some portion of Stanford's and Bradley's detractors' disquiet is grounded in the fact that the popular press readily seized on the Solutrean Hypothesis, so much so that it is regularly incorporated in cover stories in popular magazines like *Smithsonian* (Malakoff 2012) and *American Archaeology* (Gugliotta 2013) even though it is still undergoing peer review. That press coverage, while fostered by the authors through interviews, is not entirely of their own doing; it simply reflects a hunger in the media for science relating to this subject. I think it has been a net positive for the discipline.

In my opinion, the last 50 years have taught us to avoid myopia in seeking solutions to complex events such as the peopling of the Americas. For example, in contrast to the linear evolution once purported to underlie the ascent of modern humans, our genetic ancestry is now thought to consist of a diverse panoply of recombining genetic forebears (e.g., Lordkipanidze et al. 2013; Reich 2010). This sea change is a useful analogy for the evolving thought characterizing our understanding of the colonization of the Americas. The authors advocate for additional tests of their hypotheses, and in their conclusion note the importance of genetic tests conducted on ancient skeletal materials (hopefully done in concert with the advocacy of Native American groups) as one such element. The results of continued tests will expand and not contract the paleo-landscape of the Americas, and we should be careful to not treat each new discovery or paper as the final word on the subject.

In my view, it is exceedingly important that we continue to pursue new archaeological finds through active excavations, including in off-shore contexts, and continue teasing out new data from extant collections. In preparing this

book, Stanford and Bradley have done both. The fact that it contains new data, primary data, in support of its conclusions, is one of the things that sets it apart from many of the other books dedicated to the first Americans, which tend to be syntheses of the same relatively staid evidence.

There are many, many books available on the subject of the first Americans. In choosing readings for a 2013 undergraduate seminar on “Ice Age Humans in North America,” I assigned this book (as well as Dixon’s [1999] *Bones, Boats and Bison*). The students universally enjoyed Stanford’s and Bradley’s book as well as the various critiques I provided as supplemental readings. With regard to the qualitative and quantitative characteristics put forward by the authors as illustrative of the Solutrean-Clovis connection, my group of insightful students could not reach consensus regarding the hypothesis. For my part, I applauded the alternative thinking fomented by the book. The fact that it is far from universally accepted is representative of the ebb and flow of healthy anthropological discussion that characterize the field, writ large. While not 100% compelling, I do not find Stanford’s and Bradley’s contentions galling. I think it is also a testament to the role of museums in contributing to high-level science. The book’s authors, and other like-minded interdisciplinary scientists, are actively working to enrich the archaeological dataset and to test the hypotheses put forth in the book. (There were some wonderful examples scattered amongst the papers and posters presented at the recent PaleoAmerican Odyssey Conference, October 2013, <http://paleoamericanodyssey.com/>.)

While focused on a migration along an ice edge spanning the North Atlantic, portions of the book also speak to the possibilities for migration along the southern coast of Beringia in the North Pacific. I’ll close the review with a quote borrowed from a colleague that he attributes to the *Handbook of Irish Archaeology*: “Though occasionally in er-

ror, archeologists are seldom in doubt.” Love it or hate it, this book is an important contribution; it was a pleasure to review, and it should absolutely be on the shelf of any conscientious archaeologist.

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