

SHOWING ANTHROPOLOGY MATTERS

PUBLIC ANTHROPOLOGY: An Open Access Series

The series embraces the hope that anthropology has value to those beyond the discipline, beyond the university. It is one thing to write a thoughtful book. It is another to do so in a manner that attracts the attention and collaboration needed to help address a problem. The focus is on publications that matter to other people—by the power of their ideas and by how, with the help of others, they transform peoples' lives for the better.

SERIES EDITOR: ROBERT BOROFSKY
(CENTER FOR A PUBLIC ANTHROPOLOGY)

An Anthropology of Anthropology: Is It Time to Shift Paradigms by Robert Borofsky

Showing Anthropology Matters: Public Anthropology in Action, edited by
Robert Borofsky

Showing Anthropology Matters

PUBLIC ANTHROPOLOGY
IN ACTION

EDITED BY
Robert Borofsky

CENTER FOR A **PUBLIC**
ANTHROPOLOGY

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Foreword

Edward Liebow

(Executive Director, American Anthropological Association)

To influence social change, anthropologists' work must reach a wide audience and not simply circulate among anthropologists. This wider audience will include leaders in business, government, and the non-profit sectors, whose perspectives almost certainly will benefit from the long and comparative view that anthropologists offer.

Anthropological scholarship yields insights into social and cultural context. Context matters in helping multi-national corporations understand that responsible business conduct depends on understanding the local and regional conditions under which supply chain management, production, distribution, and consumption operate. Context matters in helping the government policy-making apparatus understand how proposed policies contribute to more just and sustainable livelihoods for all. Context matters in helping NGOs advocate for and serve the disadvantaged and underrepresented.

However, the professional reward system for most anthropologists, especially those employed within the academy, places its heaviest emphasis on research publications, and publications in influential journals at that. "Influential" is generally assessed by citation analysis, also known as bibliometrics. And ironically, the most common mode of bibliometric analysis is the journal-level "impact factor," which gauges the influence of anthropolo-

gists' work on other anthropologists. As long as we continue to reward the impact of our scholarship on other scholars, we effectively discount—if not dismiss altogether—the impact we can and should be having on activities in the business, government, and non-profit sectors.

Ultimately, we have to go beyond bibliometrics to gauge the impacts of anthropological scholarship. We need to trace the path to policies, patents, training delivery, service design improvements, and onward to just and healthy communities. But that path starts with the products of scholarship. The distinctive claim in this short volume is that we are better served in our ultimate objective of gaining public attention by using a different bibliometric tool, altmetrics, which focuses on influential *articles*, rather than influential *journals*.

By examining what a set of widely circulated articles from each of the main subfields of anthropology have in common, we are able to see several features of scholarship that both gain public attention and, at the same time, remain academically influential. The common approach is neither formulaic nor magical. If one aims to have one's work gain influence beyond the confines of anthropology, one must (1) lead with the topic's relevance rather than revealing it at the end; (2) present one's work clearly, in plain language, without apologizing for complexity or dumbing down the argument; (3) show one's work, without getting mired in the detailed weeds, making a case for the reliability and validity of one's results; and (4) deal with problems of concern or topics of interest to a broader audience.

A couple of years ago, the American Anthropological Association surveyed its members, asking to what extent they felt that anthropological scholarship should be widely relevant to business, government, and non-governmental sectors. Well over 80% of respondents strongly agreed with the importance of such relevance. When asked whether *their work in particular* was indeed relevant, however, fewer than 40% agreed that it was. The gap between what we generally believe should be the case and where we stand now creates the challenge before us, and making progress along the path toward wider relevance cannot begin soon enough. Taken together, the articles collected in this volume provide a highly useful navigational aid.

Preface

In 2015, the Center for a Public Anthropology started working with Altmetric .com to highlight not only publications by anthropologists noted in the world's media but also, at a detailed level, what these various media sources wrote about these publications. In 2016, it established a website, metrics.publicanthropology.org, that highlights what the world's media are reporting about anthropological publications. In 2017, the Center started, monthly, "pushing" these data out to anthropology departments across North America. While many faculty are intrigued by the types of anthropological articles being highlighted in the world's media, others prefer to focus, as they have in the past, on a narrow specialization embraced by a small coterie of colleagues. They frequently make the assumption that, because they claim their work is important, they should receive public funding.

As the introduction makes clear, there are clear advantages to being highlighted in the world's media. Showing that one's work draws public recognition often enhances the credibility of a funding request. In a time of "audit culture," where anthropologists are judged by the number of publications produced, having publications that advanced a department's and university's public recognition cannot help but be valued. They provide a clear sense that

others, beyond the discipline, beyond the academy, recognize the value of an anthropologist's publications.

As readers will see, there is no absolute answer to what topics, what publications, attract the world media's attention. It varies depending on a host of factors. Some anthropologists assert that the articles highlighted in the world's media must directly address sensational topics—such as sex or violence. Readers will see that is not the case in the examples reviewed here nor in the hundreds of articles listed on the metrics.publicanthropology.org website. (The articles do, however, offer interesting implications that some media sources may choose to highlight in somewhat overstated ways that draw readers to examine an article further.) The book provides the tools for readers to figure out, for themselves, what sorts of publications, in what contexts, attract public attention.

It is my honor to acknowledge the assistance of a number of individuals who made this work possible. I appreciate the help provided by Ed Liebow with his foreword and by Doug Bamforth, Bill Beeman, and Leslie Knapp with their framing comments on each section's articles. In each case, they thoughtfully set the stage for what follows. At Altmetric.com, I want to express my gratitude to Kathy Christian, Euan Adie, Sara Rouhi, Catherine Williams, and Kortney Boak Capretta. They, especially Kathy Christian, were key to facilitating both this book and the Center's broader metrics.publicanthropology.org project. Here in Hawaii, I much appreciate the assistance of my immediate family, Robyn, Amelia, Sam, and especially my wife, Nancy. At Hawaii Pacific, I am grateful for the support of David Lanoue, Mathew Liao-Troth, John Fleckles, and Bill Potter. More broadly, I appreciate the support provided by Mark Hannington, Stan Bowers, Joe Esser, Josh Schuette, and Amanda James. Thank you.

Introduction

Robert Borofsky

(Center for a Public Anthropology & Hawaii Pacific University)

At the heart of this book lies a question: Are readers able to find innovative solutions to one of the key problems, some might say the key problem, facing anthropology today? After discussing the current state of anthropology, this introduction offers readers a challenge: It presents both students—at the undergraduate and graduate levels—and faculty with the data needed for rethinking how to present the excitement and insights of anthropological research to the broader public that financially supports the discipline’s research. Readers compare what anthropologists write about their research with how the world’s media perceive and misperceive this research in their reporting. With these data in hand, readers can puzzle over what is the best way to raise anthropology’s intellectual profile with the broader public while, at the same time, maintaining the discipline’s professionalism and quality. The goal, in a sense, is to have our cake (raise anthropology’s public profile) and eat it too (present the material in a professional manner). Impossible? Not really, if readers are open to thinking outside the box of traditional frameworks.

Anthropology’s Current State: Anthropology today seems to be in a period of flux and uncertainty. Let me explain.

First, despite the hopes of many in the discipline, anthropologists seem to have limited public impact. Even though anthropologists frequently ask

thoughtful, exciting questions, most of the widely read, popular books that deal with anthropological issues—books that win prominent prizes and are bestsellers—tend to be written by non-anthropologists. We see that in the case of Jared Diamond’s *Guns, Germs, and Steel: The Fates of Human Societies* (1997). The book discusses the evolution of human societies, including how the West became more developed than the “Rest” (i.e., non-Western societies). It won the 1998 Pulitzer Prize for General Nonfiction, was the subject of a well-received PBS National Geographic special, and remained on the *New York Times* bestseller list for almost four years. While Diamond studied anthropology as an undergraduate, he holds a doctoral degree in physiology. Diamond is now a professor in the geography department at UCLA.

Katherine Boo’s *Behind the Beautiful Forevers: Life, Death, and Hope in a Mumbai Undercity* (2012) is an insightful ethnography of life in an Indian slum. It provides a vivid sense of how people, despite overwhelming difficulties, not only survive but may possess an optimistic hope for a better life. *Behind the Beautiful Forevers* won the 2012 National Book Award for nonfiction and a 2012 Los Angeles Times Book Prize and has been listed as a *New York Times* bestseller. Again, Boo is not an anthropologist. She was a reporter and editor for the *Washington Post* and is now a staff writer for *The New Yorker*.

With respect to J. D. Vance’s *Hillbilly Elogy*, an ethnographic account of the world Vance grew up in, Jennifer Senior in *The New York Times* calls it “a compassionate, discerning sociological analysis of the white underclass that has helped drive the politics of rebellion, particularly the ascent of Donald J. Trump. Combining thoughtful inquiry with firsthand experience, Mr. Vance has . . . provided a civilized reference guide for an uncivilized election, and he’s done so in a vocabulary intelligible to both Democrats and Republicans.”¹ His book has been on the *New York Times* bestseller list for more than 62 weeks. Vance is not an anthropologist but a columnist for *The New York Times* and a venture capitalist. David Brooks, in a *New York Times* opinion piece, calls *Hillbilly Elogy* “essential reading for this moment in history.” When was

1. Senior (2016).

the last time a prominent public figure suggested this for an ethnography written by an anthropologist?

We see the discipline's limited impact in other ways as well. While the National Science Foundation (NSF) breaks out funding for psychology, economics, political science, and sociology, anthropology is listed under "social sciences, nec" (or not elsewhere classified).² While anthropology has clearly defined cultural and biological programs (within the Division of Behavioral and Cognitive Sciences), in contrast to other social sciences, it is unclear exactly how much NSF funding the anthropology programs receive to distribute in grants.

Anthropology departments tend to be smaller than other social science departments. Based on an analysis of 94 research-oriented universities' websites (in 2012–13), the average numbers of faculty per department are anthropology—20.63, economics—27.4, political science—28.46, psychology—38.07, and sociology—21.56. The data provide a rough sense of university administrators' priorities in terms of full-time faculty.

I would also note membership in the American Anthropological Association (AAA) is declining. In the 1990s, the membership ranged between 11,000 and 12,000 members. In 2015, the association had approximately 9,500 members. In 2016, it was down to around 8,600. Also, readers will see when they review the Altmetric data, while the AAA has more than 30 journals, few of them have papers highlighted in the world's media. The AAA's journals attract limited attention beyond the discipline.

This is not to say that anthropology cannot be exciting, provocative, and insightful as a discipline. It has in the past, and it can still today. But the discipline is not living up to its potential. It could have a higher public profile and, based on that profile, considerably more financial support.

Second, in coping with these difficult times, many anthropologists have turned intellectually inward—away from public engagement, away from public debate, away from the public that supports its research. Drawing on the

2. Table 8. Higher education R&D expenditures, by source of funds and R&D field: FY 2015 https://ncesdata.nsf.gov/herd/2015/html/HERD2015_DST_o8.html (5OCT17).

work of Mary Douglas, we might perceive this inward tendency in terms of purity and pollution.³ Moving outside the academic pale, some anthropologists suggest, makes a colleague's work impure. It pollutes the anthropologist. The "pure" remain comfortably ensconced within anthropology producing work that few read. Take the example of Jared Diamond. Barbara King, a senior professor at the College of William and Mary, asks "Why does Jared Diamond make anthropologists so mad?" in her review of his book, *The World Until Yesterday*. She states:

Wade Davis says that Diamond's "shallowness" is what "drives anthropologists to distraction." For Davis, geographer Diamond doesn't grasp that "cultures reside in the realm of ideas, and are not simply or exclusively the consequences of climatic and environmental imperatives."

Rex Golub at Savage Minds slams the book for "a profound lack of thought about what it would mean to study human diversity and how to make sense of cultural phenomena." In a fit of vexed humor, the Wenner-Gren Foundation for anthropological research tweeted Golub's post along with this comment: "@savageminds once again does the yeoman's work of exploring Jared Diamond's new book so the rest of us don't have to."

This biting response isn't new; see Jason Antrosio's post from last year in which he calls Diamond's Pulitzer Prize-winning *Guns, Germs, and Steel* a "one-note riff," even "academic porn" that should not be taught in introductory anthropology courses.

And yet, King continues, "Readers eager to learn about practices considerably different from their own will come away from the book with significant rewards. . . . Even if Diamond makes mistakes—and he does—might his taking on big questions for large numbers of readers do more good than harm?" She asks, "Where, at least since 1982 and Eric Wolf's *Europe and the People*

3. Douglas (1966).

Without History, are the ‘big books’ in which we anthropologists do a better job than Diamond?”⁴

Reading various anthropological reviews of Diamond’s books, one sees anthropologists trying to defend their field from a prominent outsider rather than doing what they claim to do best—engage with different perspectives in productive ways. How can cultural anthropologists live in distant lands, extol the value of different lifestyles, and then seek to shut Diamond down when he engages with anthropological matters—often successfully, many reviewers suggest—just because he presents his material in a less “anthropological” manner than some?

In turning inward, anthropologists seem to be losing their value for the larger society that funds the discipline’s research. Anthropologists might keep in mind a famous phrase related to exogamy. As both Edward Tylor and Claude Lévi-Strauss stress, small groups need to marry out or die out. In the current context, this emphasizes the importance of establishing connections, alliances, with those beyond a small coterie of colleagues if one is to have political and financial support for research.

Third, today universities, in assessing the intellectual competence of their faculty, often depend on a set of publication metrics. In judging excellence, they often focus on where an article or book is published as well as who cites it. These are, at best, imperfect measures of academic excellence and can frequently be “gamed”—for example, by splitting up important ideas into several articles, producing jointly authored work, and citing a host of others, hoping they will cite you. Administrators tend to focus on these metrics because they are easily collected and compared. Administrators may find it difficult to understand anthropological writing, especially when it is phrased in elitist jargon and technical language. The more anthropologists turn inward—writing for themselves—the more administrators are drawn into relying on publication metrics, that many anthropologists dislike, to assess them.

These metrics draw anthropologists onto a publishing treadmill—having

4. King (2013).

to publish so many articles and/or books per review period—so they can advance their careers. This overwhelming focus on publications has a significant drawback for the discipline. It is often unclear how the host of publications faculty are required to produce relate to one another. New journals arise to support more faculty publications. Having more publications in more journals solves the faculty productivity problem. But it often tends to produce a fragmented field with different faculty publications—even by the same faculty member—going off in various directions. Publishing itself becomes the focus rather than advancing knowledge, public engagement, or helping the broader society address problems.⁵

Anthropology Is Built on Public Support: The problem with anthropology turning in on itself is that the discipline is built on public support. Much of the disciplines’ research is funded by the government—through the NSF and the National Institutes of Health (NIH)—or private foundations. Potential grantees are frequently asked to describe how their proposed research will benefit the broader society, serve the common good, and/or advance knowledge. The NSF, for example, requires proposals and final reports to specify the “broader impacts” of the research, defined as encompassing “the potential to benefit society and contribute to the achievement of specific, desired, societal outcomes.”⁶ The NIH “looks for grant proposals of high scientific caliber that are relevant to public health needs” and support its mission, which is “to expand the knowledge base in medical and associated sciences in order to enhance the Nation’s economic well-being and ensure a continued high return on the public investment in research.”⁷

Though the percentage of funding from state governments has decreased in recent years, public universities still depend on them, as well as private donors, for the financial support to fund departments. Anthropology de-

5. See Borofsky (2018).

6. See NSF (2013).

7. NIH (2017) Paralleling these perspectives, the United Kingdom’s Research Councils (RCUK) stresses a commitment “to supporting and rewarding researchers to engage with the public.”

partments could not exist without their universities' having funds—often supplied, at least in part, by these groups—to finance faculty salaries.

To maintain itself, anthropology also needs to continually draw in new students at the undergraduate and graduate levels. Here again anthropology is built on outside support. It may turn in on itself, emphasizing its intellectual purity as a self-affirmation in difficult times. But it cannot survive without outside support and students.

The Value of Altmetric Scores: Faculty are often assessed on publications that may be of interest to only a small coterie of colleagues. Most articles are published in specialized professional journals that imply intellectual competence but seem of limited interest to broader audiences. Colleagues in other anthropological specialties may not fully understand them. In this regard, readers should note many faculty feel the publications they submit for review and promotion often are simply counted, not read. Deborah Rhode refers to a Carnegie Foundation report indicating more than a third of university faculty believed their publications were mostly assessed in terms of quantity rather than quality. (At schools with doctoral programs, the figure was over 50%.)⁸ Most junior faculty reasonably conclude it is safer to publish papers in an academic style that few outside their specialty will understand even if they are mainly counted by review committees rather than read. It facilitates career advancement.

A prominent assessment standard, as noted, involves the degree to which one's work is referenced by colleagues. It suggests other scholars, in citing you, are building on your work. The citations imply your publication is important and respected.

There is, however, a problem with this standard. Many scholars offer a range of citations to make their own publications appear credible. That does not mean they have actually read the publications being cited. More often than not, the citations occur in a list of names so there is little differentiation between them. Rhode notes, "There is no guarantee that authors have actually read the sources cited. Indeed, with technological advances, they need

8. Rhode (2006:46).

not even trouble to type them; entire string citations can be electronically lifted from other publications. Nor does it follow that the sources listed establish the proposition for which they are cited. Even when someone checks the notes, it is generally to determine only whether particular authorities support the text, not whether they are reliable or respected among experts.”⁹

I would note comparatively little research, especially in cultural anthropology, is replicated in some manner or other. Instead, it is generally assumed that because an author asserts something to be true, it is. It may be. But without more confirming data, such assertions, even when published, possess ambiguous, uncertain validity.¹⁰ Nonetheless, these citations, no matter how limited they are, no matter how little they suggest about a faculty member’s credibility, are used to convey the intellectual quality of a faculty member’s publications.

In contrast, the databases from Altmetric.com that form the basis of this book highlight how the world’s media perceive anthropological publications—not how academics cite them. Let me suggest three reasons why the Altmetric.com references are important despite going against the academic grain of focusing on citations in academic journals, citations that may only be referenced in passing.

First, they emphasize there is clear public interest in anthropological matters despite the limited impact anthropological research often seems to have. Anthropology asks questions that intrigue those beyond the discipline. Look at the number and range of media that cite the anthropological publications presented in this book. If you go to metrics.publicanthropology.org (click on Publications by Time in the Step 2 menu, and then click on From 2011 and Go) you will see what anthropological publications are most cited by the world’s media since the start of the Altmetric database. There are, as of June 2018, 246 media references to an article regarding fossils of early *Homo sapiens* found in Morocco dating to more than 300,000 years ago. There are 133 media references to an article regarding sleep patterns in three pre-industrial

9. Rhode (2006:38).

10. See Borofsky (2018) for a detailed exposition of this point.

societies. And there are 82 media references to 3.3 million-year-old stone tools discovered in Kenya.

Many of the highlighted articles in the Altmetric database have been published in *Nature* or *Science*, prominent scientific publications. But they are not the only journals that attract attention. In the Publications by Time/From 2011 list, there are articles published in *eLife*, *PLoS ONE*, *Animal Behaviour*, *Science Advances*, and *South African Journal of Science*.

If we turn to the articles included in this collection, we see 104 news outlets were interested in archaeological evidence related to the domestication of dogs. Sixteen news outlets reported on “A Comparative Study of Religion and Politics in Later Formative Oaxaca.” With respect to physical anthropology, 41 news outlets took note of Pleistocene genomic evidence regarding early Native Americans. Twenty-three news outlets took note of how chimpanzees teach each other to use tools. An article on how male students underestimate the academic performance of female students in undergraduate biology courses was referred to by 37 news outlets. An article titled “The Puzzle of Monogamous Marriage,” published in *Philosophical Transactions of the Royal Society B*, was cited in 16 news outlets.

When we combine the above examples with the popularity of the previously cited books by Diamond, Boo, and Vance, there seems little doubt that anthropological questions are often of broad public interest—whether they are presented in a readily understood form (as Diamond, Boo, and Vance do) or in a more academic style. It is clear that anthropologists ask interesting questions; they often present intriguing results that attract broad public interest.

In highlighting this point, the Altmetric data offer an important insight. Audiences are interested in anthropological matters, not because they are written in a somewhat obscure, elitist jargon that few understand, but despite their being written in that manner. Because such jargon is frequently used, various media sources may misinterpret an article’s intent. Doug Bamforth expresses a common view held in the academy today. In his introduction to the archaeology articles, he writes, “Media pick archaeological research up quickly, sometimes inattentively, and often filter it through modern interests,

bias, and politics. Sometimes archaeology has entertainment value.” Partly this results from the media having a different audience from that of anthropologists seeking career advancement. The public audience is not concerned with appearing “professional.” It is not interested in how a particular article, or a set of articles, advances an academic’s career. It is interested in what the research says about our collective humanity, about our collective past, about the world around us. This means that anthropological articles may be reinterpreted to address the concerns of public audiences—especially if the media do not really understand the academic contexts and language of the article itself. The same basic material may be presented in different ways to different audiences.

Perhaps this point is obvious. What is less obvious perhaps is the downside of this insight. In not being aware of public audiences and their interests—because authors turn inward as a discipline—anthropologists lose some control over their intended message. It is taken over by others. It need not be malicious or due to incompetence on the media’s part. They, like many academic colleagues in other specialties, may not understand what the article says and, hence, what its significance is. Instead of facilitating further research, such misinterpretations may foster negative reactions to the research and, as a result, limit future support for it.

There is a further downside. Because certain publications are hard to understand, administrators do not necessarily read them. They may fall back on the above-noted metrics of how many articles are written, how many people cite them. It represents a debasing of academic scholarship—quantity comes to dominate quality. Instead of focusing on ideas, on advancing knowledge, on addressing broad social concerns, publishing becomes a numbers game. In framing their publications solely for a small set of colleagues, anthropologists, I am suggesting, disempower themselves.

Second, the Altmetric data presented here, and more generally at Altmetric.com, provide a way out of the maze many academics find themselves in.¹¹ There is no one single answer; no one solution. But readers can—and

11. For more information on Altmetric.com and how to make use of its data, email: Ms. Rouhi at Sara@altmetric.com.

should—go through the various media reports provided in this book, seeing how they interpret and misinterpret various studies. Instead of simply complaining that the media got a story “wrong,” readers should explore in what ways, under what circumstances, for what reasons a study seems to be misinterpreted. Understanding how other audiences perceive anthropological work is critical for raising its public profile, for increasing anthropology’s financial support.

Many anthropologists focus on being “professional” because they perceive their careers depend on it. But that stance implies their colleagues who assess a particular body of work actually read it, actually understand its import. Faculty might hope this happens. But, as Rhode observes, many faculty believe it does not.

The Altmetric data provide a way for figuring out how to widen one’s audience without surrendering a sense of professionalism. It allows faculty to take a step back from the current metrics assessments that emphasize quantity over quality. Does it really make sense to say someone who has written four articles in a two-year period has advanced knowledge more than someone who has written two articles—especially if the author who wrote four articles had divided a large article into several smaller ones so as to have more publications or if there is no way of assessing how credible both authors’ assertions are? Does it make sense to say if 40 scholars refer to your study in passing in a list of citations, this counts more than 6 scholars engaging with your work, discussing it, critiquing it, applying its insights, in their own work?

The Altmetric data provide the possibility for escaping the maze many academics find themselves in. This book suggests new possibilities for presenting their work so it will be understood by more than a specialized audience. It allows anthropologists to gain greater control over their careers and how they present their research to others.

Third, the Altmetric data offer a way of stepping off the publication treadmill. Not being able to understand the significance of an anthropologist’s work, administrators, as noted, often lean toward metric measurements of intellectual competence. What would happen if, instead of limiting the citation counts to academic sources, such as Google Scholar, administrators drew on both Google Scholar *and* Altmetric data? The Altmetric data offer a readily

understood addition to traditional academic assessments. True, the Altmetric data are not perfect. But few academics believe the citation counts of Google Scholar on which they are currently assessed are perfect.

Most universities assert they seek to serve the common good, to advance knowledge, to improve the human condition. This vision is critical to their mission and critical to their gaining public funding. The Altmetric data support this emphasis. They allow administrators to see to what degree an anthropologist's work does indeed have public impact, does indeed foster public debate. It allows administrators to provide data supporting their claims that they are serving the common good.

In helping administrators, anthropologists are also helping themselves. This allows them not only to step off the publication treadmill—to focus on quality over quantity—but also to have additional metrics for asserting their intellectual competence and public presence.

The Altmetric data demonstrate that anthropology does, indeed, have public value. It can indeed make a difference in other people's lives. It does indeed deserve public support. All administrators need do is look at the Altmetric data to see it.

The Book's Audience: *Showing Anthropology Matters* has two primary audiences.

First, the book is meant as an intellectual exercise for undergraduate and graduate students. Is there an obvious pattern to how various media throughout the world interpret and misinterpret the anthropological articles presented here? (They were chosen by 21 anthropological chairs who listed their favorites in a set of articles presented from each field.)¹²

12. Professors: Susan Alberts (Duke University), Susan Anton (New York University), Douglas Bamforth (University of Colorado), Thomas Barfield (Boston University), Bill Beeman (University of Minnesota), Rudi Colloredo-Mansfeld (University of North Carolina, Chapel Hill), Beth Conklin (Vanderbilt University), Anthony Di Fiore (University of Texas), Craig Feibel (Rutgers University), Ellen Gruenbaum (Purdue University), Stefan Heimreich (Massachusetts Institute of Technology), Lynne Isbell (University of California, Davis), Leslie Knapp (University of Utah), Patricia Kramer (University of Washington), Christopher McCarty (University of Florida), Heather Norton (University of Connecticut), Daniel

We might ask a host of questions:

Why are some articles highlighted more than others? Is it because of the journals they are published in? Is it because of the topic? Is it because of the specific media reporting on them?

What are the most common distortions? Why do you think these occur? How might these have been reduced—both by the anthropologists writing the article and by the reporters reporting on it? What specific aspects of an article tend to be focused on? What aspects are less emphasized? Why do you think this is?

Cultural anthropologists constitute roughly two-thirds of the discipline. Yet articles dealing with physical anthropology and archaeology attract more public attention. Why does anthropology possess so many cultural anthropologists when the public seems more interested in physical anthropology and archaeology?

Second, the book offers faculty and graduate students ideas for gaining public attention while remaining academic. This book makes clear it is not an “either/or” choice. There are options. Publishing in *Nature* or *Science* will likely draw public attention. Given the standards of these journals, few would challenge the academic quality of your work if you published in them. To be published in either journal, your article needs to be relevant to a broad audience, not just a specialized coterie of colleagues. As indicated, a number of other journals attract public attention as well. I would note that when a prominent media source highlights an article, other media sources often pick it up as well. There is an outward rippling effect, even if started by a journal with a modest public presence.

What is required is thinking outside the box, outside of the current binary opposition—academic versus public standards. In a sense, one might suggest authors can have their cake (be academic enough to impress departmental review committees) and eat it too (raise their public profile). The art is finding the right journal and having something that is relevant to a wider audience,

Reichman (University of Rochester), Sissel Schroeder (University of Wisconsin), Adam Smith (Cornell University), Daniel Smith (Brown University), and Cynthia Werner (Texas A&M).

not just a small coterie of colleagues. Done well, publications can not only attract academic attention, not only pass muster with review committees, not only be properly interpreted by the media, but also be publicly relevant enough to impress school administrators and attract further funding.

The question is how to do this. With the Altmetric data in hand, you have a problem for the solving and the tools to solve it. Good luck.

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ARCHAEOLOGY

Archaeology in the public eye

Douglas B. Bamforth

(University of Colorado Boulder)

Archaeology at its most fundamental is a kind of doing, defined succinctly decades ago as the study of variation in time and space in the things people leave behind and the marks we leave on the world (“material culture”). Archaeologists study this variation in the service of many larger areas of inquiry: in academia, we work in anthropology, classics, and history departments; outside academia, a few of us do forensic work and many more of us work for government agencies and private firms focused on environmental preservation. But whether we take the social science perspective of anthropological archaeology, the more humanistic perspective of a classicist, or the legally mandated perspective of an agency land manager, two important things unite us at the end of the day.

One is the central role of technical analysis in doing what we do, mandated by our study of material culture. Archaeologists have devised analytic techniques of our own over the long history of our field, and we borrow techniques developed elsewhere, all to study and make sense out of the myriad of objects we collect in the field. The other is the fact that, however we see ourselves intellectually, thinking about variation in time and space means that what we say about our evidence is part of a process of telling the story of human history. And as the content of the four papers in this section and the media

reaction to them make clear, public interest in and support for archaeological research turns on our contributions to this story.

These four papers fall neatly into two groups. Three of them exploit the astonishing ability of technical studies of DNA extracted from ancient bone to document biological patterns with enormous implications for ancient people. DNA encodes biological relationships that tell pieces of history in all organisms, modern and ancient. These three papers, though, integrate that narrow view of history with other kinds of evidence to expand their insights far beyond biology. Kennett and others' paper on mitochondrial DNA from richly accompanied burials in Chaco Canyon tells us with certainty that members of a single family merited lavish treatment at death for over 300 years and that members of other families did not merit this. It is essential to remember that there is much to learn about the kinds of powers this family exercised. However, this evidence tells us about massive changes over time in ancient social and political organization in the American Southwest and offers strong support for those who see developments in Chaco Canyon as qualitatively different from developments in the region before and after Chaco. This goes a long way toward solving a major point of contention in our field. Similarly, Lindo and others' paper comparing ancient and modern DNA for a specific group on the Northwest coast not only documents the continuous millennia-long residence of the ancestors of the Tsimshian people around Prince Rupert Sound, but also offers a quantitative estimate of the degree of population loss caused by diseases introduced by Europeans. Like reconstructing Chacoan politics, estimating the size of indigenous populations in North America prior to European contact is contentious and difficult. Studies like this one document enormous losses, perhaps not quite as large as some have claimed but still breathtaking. Finally, issues of domestication like the ones that Frantz and others tackle are fundamental in understanding the development of human societies: we are utterly dependent on domesticated plants and animals, and knowing how we came to be this way is among the most important questions archaeologists study. If we domesticated dogs only once, that has important implications for our general understanding of how and why wild species come under human control. The conflict between the

conclusions of this paper and of another paper published only a year earlier, arguing for two independent instances of dog domestication, underscore how quickly DNA studies progress (but see below).

However, the genetic data in all of these studies (i.e., variation in material culture) become meaningful only in the context of larger archaeological evidence (time and space). Making sense of the Chacoan study depends on knowing the mortuary setting of the human skeletons studied, and both the Tsimshian and the dog study conclusions depend on well-dated remains found from well-documented locations. The paper by Joyce and Barber examines the role of religion in political change, relying on more traditional archaeological data to ask nontraditional questions. This analysis documents important differences in patterns of material culture (burials, offerings, public construction) in two major centers and argues that these differences imply very different relations between religious belief and political process and outcome. Like many archaeological interpretations, Joyce and Barber's rely on a combination of ethnographic evidence and theoretical argument to make meaning out of archaeological data; traditional archaeological work generally lacks the focused clarity of DNA studies. But they convincingly explain the very different development patterns in their two case studies in terms of profoundly important social processes.

The differences between this work and the three other papers say a lot about archaeological inference. The genetic analyses ask very well-defined questions and bring data to bear on them that are very closely linked to those questions. This is clearest in the Chaco paper, which wonders about the family relations among the people buried in Pueblo Bonito and relies on data that unambiguously tell us directly about family relations. More commonly in our field, though, as in the religion paper, the links between our evidence and the things we want that evidence to tell us are less direct. Variation in styles of mound construction may reflect the habits of workers recruited from different areas, as Joyce and Barber suggest, but there are other possibilities. In cases like this, our interpretations carry a higher load of theory and argument. This is inherent in archaeological research, but it is important to know.

Media pick archaeological research up quickly, sometimes inattentively,

and often filter it through modern interests, biases, and politics. Sometimes archaeology has entertainment value (and it truly does have this, although it has much more than this). Lots of dogs, and all puppies, are cute, and so is much of the reporting on the paper on dog DNA. The media present that paper largely as a human-interest story about where our best friends come from, sometimes wondering if we bark up the wrong trees as they note the rapid change in interpretations. They rarely mention the imprecision in the time estimates for dog domestication, something that suggests that neither the earlier two-location paper nor the newer one-location paper is completely correct. Writers faithfully summarize the remarkable results of the Chaco paper but often frame these results (implicitly or not) in terms of modern gender issues. More than one writer asserts that the data indicate a society ruled by powerful women, when, in fact, both men and women were buried in the elite locations and the genetic data tell us only that members of one family received extraordinary attention when they died. At least one Canadian writer noted the implications of the Tsimshian evidence for the deep continuity in human population locations, but writers in the United States focused entirely on the impacts of introduced Western disease on indigenous population size and modern genetic patterns. This is a profoundly important issue in the history of modern Native America and in the modern social and political standing of modern Native Americans. And any discussion of the role of religion in political development resonates in the 21st-century United States; it hardly needs comment that archaeology related to this issue is interesting in our time and place.

Genomic and archaeological evidence suggest a dual origin of domestic dogs

Laurent A. F. Frantz et al.

Science

6290, no. 352 (June 3, 2016): 1228–1231

ARTICLE:

[https://s3-us-west-2.amazonaws.com/publicanthropology/books/Arch-Genomic+...+domestic+dogs+\(arch\).pdf](https://s3-us-west-2.amazonaws.com/publicanthropology/books/Arch-Genomic+...+domestic+dogs+(arch).pdf)

ALTMETRIC:

<https://publicanthropology.altmetric.com/details/8444907/news>

A dogged investigation of domestication

The history of how wolves became our pampered pooches of today has remained controversial. Frantz et al. describe high-coverage sequencing of the genome of an Irish dog from the Bronze Age as well as ancient dog mitochondrial DNA sequences. Comparing ancient dogs to a modern worldwide panel of dogs shows an old, deep split between East Asian and Western Eurasian

Laurent A. F. Frantz, Victoria E. Mullin, Maud Pionnier-Capitan, Ophélie Lebrasseur, Morgane Ollivier, Angela Perri, Anna Linderholm, Valeria Mattiangeli, Matthew D. Teasdale, Evangelos A. Dimopoulos, Anne Tresset, Marilynne Duffraisse, Finbar McCormick, László Bartosiewicz, Erika Gál, Éva A. Nyerges, Mikhail V. Sablin, Stéphanie Bréhard, Marjan Mashkour, Adrian Bălăşescu, Benjamin Gillet, Sandrine Hughes, Olivier Chassaing, Christophe Hitte, Jean-Denis Vigne, Keith Dobney, Catherine Hänni, Daniel G. Bradley, and Greger Larson

dogs. Thus, dogs were domesticated from two separate wolf populations on either side of the Old World.

Abstract

The geographic and temporal origins of dogs remain controversial. We generated genetic sequences from 59 ancient dogs and a complete (28x) genome of a late Neolithic dog (dated to ~4800 calendar years before the present) from Ireland. Our analyses revealed a deep split separating modern East Asian and Western Eurasian dogs. Surprisingly, the date of this divergence (~14,000 to 6400 years ago) occurs commensurate with, or several millennia after, the first appearance of dogs in Europe and East Asia. Additional analyses of ancient and modern mitochondrial DNA revealed a sharp discontinuity in haplotype frequencies in Europe. Combined, these results suggest that dogs may have been domesticated independently in Eastern and Western Eurasia from distinct wolf populations. East Eurasian dogs were then possibly transported to Europe with people, where they partially replaced European Paleolithic dogs.

Ensoulement, entrapment, and political centralization

*A Comparative study of religion and politics
in later formative Oaxaca*

Arthur A. Joyce and Sarah B. Barber

Current Anthropology

56, no. 6 (December 2015): 819–847

ARTICLE:

<https://s3-us-west-2.amazonaws.com/publicanthropology/books/Arch-Ensoulement%2C+Entrapment%2C+and+Political+Centralization.pdf>

ALTMETRIC:

<https://publicanthropology.altmetric.com/details/4905447/news>

In this article, we examine the interplay of religion and politics during the later Formative period of Mesoamerica through a comparison of two regions of southern Mexico: the lower Río Verde Valley and the Valley of Oaxaca. Archaeological evidence shows that these regions had dramatically different later Formative histories. In the lower Verde, we find that religion constrained changes that could have stabilized political centralization. A crucial aspect limiting the creation of multicommunity authority and identities was the physical entrapment of the bones of ancestors, offerings, and divine beings within public buildings in local communities. In contrast, in the Valley of Oaxaca, we find that religion fostered developments that would eventually give rise to a politically centralized polity, with its seat of government at the hilltop city of Monte Albán. Both regions show that religion was not

necessarily a unifying factor in social change, as has often been assumed, but instead could be a crucible of tension and conflict through which political innovations were produced. This comparative study leads us to considerations of broader historical factors that contribute to understandings of when religion can be constraining or enabling of political change.

Archaeogenomic evidence reveals prehistoric matrilineal dynasty

Douglas J. Kennett et al.

Nature Communications

8, art. no. 14115 (February 21, 2017)

ARTICLE:

<https://www.nature.com/articles/ncomms14115>

ALTMETRIC:

<https://publicanthropology.altmetric.com/details/16580102/news>

Abstract

For societies with writing systems, hereditary leadership is documented as one of the hallmarks of early political complexity and governance. In contrast, it is unknown whether hereditary succession played a role in the early formation of prehistoric complex societies that lacked writing. Here we use an archaeogenomic approach to identify an elite matriline that persisted between 800 and 1130 CE in Chaco Canyon, the centre of an expansive prehistoric complex society in the Southwestern United States. We show that nine individuals buried in an elite crypt at Pueblo Bonito, the largest structure in the canyon, have identical mitochondrial genomes. Analyses of nuclear ge-

Douglas J. Kennett, Stephen Plog, Richard J. George, Brendan J. Culleton, Adam S. Watson, Pontus Skoglund, Nadin Rohland, Swapan Mallick, Kristin Stewardson, Logan Kistler, Steven A. LeBlanc, Peter M. Whiteley, David Reich, and George H. Perry

nome data from six samples with the highest DNA preservation demonstrate mother–daughter and grandmother–grandson relationships, evidence for a multigenerational matrilineal descent group. Together, these results demonstrate the persistence of an elite matriline in Chaco for ~330 years.

A Time transect of exomes from a Native American population before and after European contact

John Lindo et al.

Nature Communications

7, art. no. 13175 (November 15, 2016)

ARTICLE:

<https://www.nature.com/articles/ncomms13175>

ALTMETRIC:

<https://publicanthropology.altmetric.com/details/13642429/news>

Abstract

A major factor for the population decline of Native Americans after European contact has been attributed to infectious disease susceptibility. To investigate whether a pre-existing genetic component contributed to this phenomenon, here we analyse 50 exomes of a continuous population from the Northwest Coast of North America, dating from before and after European contact. We model the population collapse after European contact, inferring a 57% reduction in effective population size. We also identify signatures of positive

John Lindo, Emilia Huerta-Sánchez, Shigeki Nakagome, Morten Rasmussen, Barbara Petzelt, Joycelynn Mitchell, Jerome S. Cybulski, Eske Willerslev, Michael DeGiorgio, and Ripan S. Malhi

selection on immune-related genes in the ancient but not the modern group, with the strongest signal deriving from the human leucocyte antigen (HLA) gene *HLA-DQA1*. The modern individuals show a marked frequency decrease in the same alleles, likely due to the environmental change associated with European colonization, whereby negative selection may have acted on the same gene after contact. The evident shift in selection pressures correlates to the regional European-borne epidemics of the 1800s.

CULTURAL ANTHROPOLOGY

Similarities and culturally mediated differences in human societies

William O. Beeman

(University of Minnesota)

The general public is fascinated by the scientific findings in anthropology. This is no surprise, since anthropology is the only academic discipline that can draw conclusions about human beings as a species, essentially telling humans about themselves. Anthropological findings are based on comparative data from populations throughout the world.

The four papers presented here have attracted widespread media attention because they show that humans have much in common with each other in basic functioning even when they come from very different societies. The papers deal with sleep, longevity, sexual dominance, and mating behavior—all ancient human biobehavioral patterns that anthropologists are able to recognize even in nonhuman relations. The universality of these patterns may be surprising to some media consumers, but the discovery of these similarities underscores the basic unity of humankind even after thousands of years of adaptation. The papers also show significant differences in aspects of these basic functions that correlate with environmental variation. In each case, the departures from basic human patterns of behavior are the result of cultural adaptations. In this way all of these papers fulfill the basic mission of anthropological research, accounting for both similarities and differences among

humans. They also provide vital information for the general public about our shared humanity.

The first of these papers, “Natural Sleep and Its Seasonal Variations in Three Pre-Industrial Societies,” compares the sleep habits in three widely dispersed rural societies in Tanzania, Namibia, and Bolivia. Individuals in these societies can be thought of as embodying “natural” sleep patterns, un-governed by industrial society with alarm clocks and rigid work schedules. These sleep patterns are thus as close as we can find to those of pre-modern *Homo sapiens*. The surprising result of this study is that individuals in these societies all exhibit “natural” sleep durations of between 5.7 and 7.1 hours per night. This sleep duration is comparable to that of people in industrialized societies. The great difference between sleep in these societies and that in industrial societies involves the “triggers” for sleep in the pre-industrial societies as opposed to industrial society. In the pre-industrial societies of this study, it was not darkness that marked the onset of sleep, but rather the environmental temperature changes that typically occur naturally during the day and night. In industrial societies with artificial regulation of temperature, it is presumed that sleep can be initiated at any time. The authors thus suggest that all humans sleep approximately the same length of time but that the time of onset of sleep varies in a natural environment because of temperature changes that will vary seasonally. They suggest further that modern humans suffering from insomnia might use temperature regulation of their environment to achieve a more “natural” method for falling asleep.

Media attention to this paper focused on the fact that temperature changes, rather than darkness, trigger sleep. This is a surprising result for many media consumers because of the widespread belief that change in light intensity is the primary governor of sleep. The suggestion that this insight could be useful in treating sleep disorders was another research conclusion that was widely reported.

The second of these papers, “The Emergence of Longevous Populations,” deals with one of the areas of greatest interest to the general public: human life span. In comparing the life span of nonhuman, nonindustrialized human societies and industrialized human societies, the researchers have discovered

that there is a direct correlation between expanded life span and life in an industrialized social environment. Life spans increase dramatically in industrial societies, showing the effects of cultural adaptation. Moreover, the differences between the life spans of industrial society humans and nonindustrial society humans are greater than between nonindustrial humans and nonhuman primates. There is one dramatic commonality between all human populations in this study, and that is that in the aggregate, females universally live longer than males. Nevertheless, the difference between female and male longevity decreases for industrialized societies. As in the first paper, we see that a universal pattern—in this case, female longevity advantage—can still be modified by cultural intervention.

Media reporting on this research all centered on the fact that women universally live longer than men and that this female advantage applies even among nonhuman primates. A second point of great interest was the conclusion that human life spans are increasing among all populations, suggesting that technology has altered one basic universal biological tendency in human life.

In the third of these papers, “Males under-estimate academic performance of their female peers in undergraduate biology classrooms,” the authors explore gender differences from the perspective of gender stereotyping and gender behavior. The study was carried out among more than 1,500 students in biology classes at the University of Washington in the United States. Students were asked to “nominate” other students whom they thought would do well in their biology courses. The men in the class “overnominated” other men in the class, speculating that they would do better than they actually did, and “undernominated” women. Women by contrast tended to be much more accurate in predicting who would do well in the class. However, one of the conclusions of the study is that one can’t become a class “celebrity” without being male. This study suggests that many popular stereotypical views of the relative suitability of males and females in “STEM” (science, technology, engineering, and mathematics) disciplines may be based on gender bias rather than actual differences in performance between the sexes. These biases reflect cultural attitudes, and the authors suggest that to the degree that these atti-

tudes are pervasive, they may affect STEM education throughout the United States. The authors do not raise the question of long speculation about male dominance as a characteristic among humans as a species, but it is difficult to avoid speculation about this as a factor in this study.

Many reporters on this article seized on the universal nature of gender bias in education, speculating on whether this is ingrained in human nature or whether it could be altered through cultural training or education. Certainly, in today's world, and especially in the United States, equality of opportunity for men and women is a broadly embraced cultural goal, and research such as presented here underscores the challenges that educators and other social policy makers face in trying to move forward toward gender equality goals.

The fourth paper, "The puzzle of monogamous marriage," addresses a very old question in anthropology: the question of monogamous versus polygamous marriage. Anthropologists of the 19th century suggested that polygamous marriage represented an early stage of human social development, evolving into monogamous marriage as a more advanced stage of social organization. These evolutionary theories proved to be naïve, but they were correct in identifying the normal variations in marriage and wanting to explain them scientifically. As the authors of this paper remark, 85% of all human societies continue to allow men to have more than one wife, and there are a few societies that allow women to have more than one husband. This means that monogamy is the less normative marriage pattern in terms of overall human patterns of cultural organization. The authors then try to account for the emergence of this minority pattern. Through a comparative examination of a number of historical world societies, including early polygynous Mormons in the United States, they are able to show that there is a strong social and economic advantage for monogamous societies. Men who direct their attention to familial care and not to competition with other men for women are able to concentrate economic resources and ensure safety for their offspring. Reduced competition also reduces overall crime and other social ills, in part by reducing the pool of unmarried men. This study then suggests that, indeed, the basic human pattern is polygamy but that socially advantageous benefits arise when monogamy as a cultural adaptation is adopted.

Media attention to this research focused on the nature of violence in society, centering on the conclusion raised in this research that societal violence is higher in societies with higher numbers of young unmarried men. The suggestion that societal violence can be mitigated through the mechanism of men contracting monogamous marriage with women appeared to be novel. Some of the media attention reported on criticism of presidential candidate Hillary Clinton, because she suggested that women in general promote more peaceful and reasoned solutions to social problems—one of them being marriage.

Research articles such as those presented here are exemplary in their broad appeal to the nonspecialist public. Many anthropologists may not realize the public benefit their research can confer. Media consumers have a near-insatiable desire to read about themselves and their own nature. Moreover, by knowing about baseline human behavior, policy makers, educators, and others devising strategies for the betterment of humanity have a solid basis for planning and implementation of actions that advance well-being for all.

Natural sleep and its seasonal variations in three pre-industrial societies

Gandhi Yetish et al.

Current Biology

25, no 21 (November 2, 2015): 2862–2868;

online October 15, 2015

ARTICLE:

[http://www.cell.com/current-biology/fulltext/S0960-9822\(15\)01157-4?returnURL=http%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0960982215011574%3Fshowall=true](http://www.cell.com/current-biology/fulltext/S0960-9822(15)01157-4?returnURL=http%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0960982215011574%3Fshowall=true)

ALTMETRIC:

<https://publicanthropology.altmetric.com/details/4629954/news>

Highlights

Pre-Industrial societies in Tanzania, Namibia, and Bolivia show similar sleep parameters. They do not sleep more than “modern” humans, with average durations of 5.7–7.1 hr. They go to sleep several hours after sunset and typically awaken before sunrise. Temperature appears to be a major regulator of human sleep duration and timing.

Gandhi Yetish, Hillard Kaplan, Michael Gurven, Brian Wood, Herman Pontzer, Paul R. Manger, Charles Wilson, Ronald McGregor, and Jerome M. Siegel

Summary

How did humans sleep before the modern era? Because the tools to measure sleep under natural conditions were developed long after the invention of the electric devices suspected of delaying and reducing sleep, we investigated sleep in three pre-industrial societies. We find that all three show similar sleep organization, suggesting that they express core human sleep patterns, most likely characteristic of pre-modern era *Homo sapiens*. Sleep periods, the times from onset to offset, averaged 6.9–8.5 hr, with sleep durations of 5.7–7.1 hr, amounts near the low end of those industrial societies. There was a difference of nearly 1 hr between summer and winter sleep. Daily variation in sleep duration was strongly linked to time of onset, rather than offset. None of these groups began sleep near sunset, onset occurring, on average, 3.3 hr after sunset. Awakening was usually before sunrise. The sleep period consistently occurred during the nighttime period of falling environmental temperature, was not interrupted by extended periods of waking, and terminated, with vasoconstriction, near the nadir of daily ambient temperature. The daily cycle of temperature change, largely eliminated from modern sleep environments, may be a potent natural regulator of sleep. Light exposure was maximal in the morning and greatly decreased at noon, indicating that all three groups seek shade at midday and that light activation of the suprachiasmatic nucleus is maximal in the morning. Napping occurred on <7% of days in winter and <22% of days in summer. Mimicking aspects of the natural environment might be effective in treating certain modern sleep disorders.

The emergence of longevous populations

Fernando Colchero et al.

PNAS

(Proceedings of the National Academy of Sciences of the United States of America)

113, no. 48 (November 29, 2016): E7681-E7690

ARTICLE:

<http://www.pnas.org/content/113/48/E7681>

ALTMETRIC:

<https://publicanthropology.altmetric.com/details/13869949/news>

Significance

Public interest in social and economic equality is burgeoning. We examine a related phenomenon, lifespan equality, using data from charismatic primate populations and diverse human populations. Our study reveals three key findings. First, lifespan equality rises in lockstep with life expectancy, across primate species separated by millions of years of evolution and over hundreds of years of human social progress. Second, industrial humans differ more from nonindustrial humans in these measures than nonindustrial humans do from other primates. Third, in spite of the astonishing progress humans have

Fernando Colchero, Roland Rau, Owen R. Jones, Julia A. Barthold, Dalia A. Conde, Adam Lenart, Laszlo Nemeth, Alexander Scheuerlein, Jonas Schoeley, Catalina Torres, Virginia Zarulli, Jeanne Altmann, Diane K. Brockman, Anne M. Bronikowski, Linda M. Fedigan, Anne E. Pusey, Tara S. Stoinski, Karen B. Strier, Annette Baudisch, Susan C. Alberts, and James W. Vaupel

made in lengthening the lifespan, a male disadvantage in lifespan measures has remained substantial—a result that will resonate with enduring public interest in male–female differences in many facets of life.

Abstract

The human lifespan has traversed a long evolutionary and historical path, from short-lived primate ancestors to contemporary Japan, Sweden, and other longevity frontrunners. Analyzing this trajectory is crucial for understanding biological and sociocultural processes that determine the span of life. Here we reveal a fundamental regularity. Two straight lines describe the joint rise of life expectancy and lifespan equality: one for primates and the second one over the full range of human experience from average lifespans as low as 2 y during mortality crises to more than 87 y for Japanese women today. Across the primate order and across human populations, the lives of females tend to be longer and less variable than the lives of males, suggesting deep evolutionary roots to the male disadvantage. Our findings cast fresh light on primate evolution and human history, opening directions for research on inequality, sociality, and aging.

Males under-estimate academic performance of their female peers in undergraduate biology classrooms

Daniel Z. Grunspan, Sarah L. Eddy, Sara E. Brownell, Benjamin L. Wiggins, Alison J. Crowe, and Steven M. Goodreau

PLoS ONE

(February 10, 2016)

ARTICLE:

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0148405>

ALMETRIC:

<https://publicanthropology.altmetric.com/details/5303930/news>

Abstract

Women who start college in one of the natural or physical sciences leave in greater proportions than their male peers. The reasons for this difference are complex, and one possible contributing factor is the social environment women experience in the classroom. Using social network analysis, we explore how gender influences the confidence that college-level biology students have in each other's mastery of biology. Results reveal that males are more likely than females to be named by peers as being knowledgeable about the course content. This effect increases as the term progresses, and persists even after controlling for class performance and outspokenness. The bias in nomina-

tions is specifically due to males over-nominating their male peers relative to their performance. The over-nomination of male peers is commensurate with an overestimation of male grades by 0.57 points on a 4 point grade scale, indicating a strong male bias among males when assessing their classmates. Females, in contrast, nominated equitably based on student performance rather than gender, suggesting they lacked gender biases in filling out these surveys. These trends persist across eleven surveys taken in three different iterations of the same Biology course. In every class, the most renowned students are always male. This favoring of males by peers could influence student self-confidence, and thus persistence, in this STEM discipline.

The puzzle of monogamous marriage

Joseph Henrich, Robert Boyd, and Peter J. Richerson

Philosophical Transactions of the Royal Society B: Biological Sciences

367, no. 1589 (March 5, 2012); online January 23, 2012

ARTICLE:

<http://rstb.royalsocietypublishing.org/content/367/1589/657>

ALTMETRIC:

<http://publicanthropology.altmetric.com/details/571216/news>

Abstract

The anthropological record indicates that approximately 85 percent of human societies have permitted men to have more than one wife (polygynous marriage), and both empirical and evolutionary considerations suggest that large absolute differences in wealth should favour more polygynous marriages. Yet, monogamous marriage has spread across Europe, and more recently across the globe, even as absolute wealth differences have expanded. Here, we develop and explore the hypothesis that the norms and institutions that compose the modern package of monogamous marriage have been favoured by cultural evolution because of their group-beneficial effects—promoting success in inter-group competition. In suppressing intrasexual competition and reducing the size of the pool of unmarried men, normative monogamy reduces crime rates, including rape, murder, assault, robbery and fraud, as well as decreasing personal abuses. By assuaging the competition for younger brides, normative monogamy decreases (i) the spousal age gap, (ii) fertility,

and (iii) gender inequality. By shifting male efforts from seeking wives to paternal investment, normative monogamy increases savings, child investment and economic productivity. By increasing the relatedness within households, normative monogamy reduces intra-household conflict, leading to lower rates of child neglect, abuse, accidental death and homicide. These predictions are tested using converging lines of evidence from across the human sciences.

PHYSICAL ANTHROPOLOGY

Highlights in public anthropology, physical anthropology

Leslie A. Knapp

(University of Utah)

Ask most people to describe what physical anthropologists do, and you might hear that they dig up bones in East Africa (like the Leakeys) or that they study chimpanzees in the wild (like Jane Goodall). Some might even associate physical anthropology with the search for ancient treasure (like Indiana Jones). Anthropologists are frequently depicted, in films and books, as explorers, moving from one adventure to the next. Thus, it shouldn't be surprising that the public is drawn to anthropological research, especially work that appears daring and, perhaps, even sensational.

My own experience studying primate sexual selection and genetics has made it abundantly clear that the press frequently tries to sensationalize research. This approach sells newspapers, magazines, website subscriptions. My research with colleagues on mandrill mate choice and olfaction, as well as recent work with collaborators on the howler monkey vocal apparatus (i.e., hyoid) and testes volume, has been some of the best covered of my more than 70 peer-reviewed publications. The research on howler monkeys, for example, was of very high quality, using 3-D laser scans to determine the volumes of more than 200 hyoids. However, a good proportion of the media attention concentrated on the application of our findings to understanding people, particularly boisterous politicians.

The four physical anthropology articles in this section have received substantial media attention in the US press and also in many international venues. They represent a range of subfields in modern physical anthropology: molecular genetics, ancient DNA, human cognitive evolution, and primate behavior. The publications focus on topics that appeal to anthropology students and the public in general. Altmeteric data demonstrate that, at least for these articles, the public does most of the tweeting, especially when media attention highlights cases where there is a lack of consensus in the field. In one case, the paper, on migration into the New World, contradicts the findings of a paper published almost exactly at the same time, in another high-profile journal. In another case, focusing on Oceanic migration, the result are incompatible with previously published results.

Many theories have been proposed to explain the colonization of the Americas. Researchers have tried to answer several questions: when migrants arrived in the New World, whether hunter-gatherers arrived in a single or multiple migration(s), and who were the source population(s) for the first Americans. Other questions relate to just how quickly, and by what adaptive strategies, the migrants moved over the diverse, previously uninhabited new territory. Some of these questions are addressed in the article “Genomic Evidence for the Pleistocene and Recent Population History of Native Americans.” That paper focuses on the analysis of modern North and South America, Siberia, Australia, and Melanesia genomes. The authors also generated ancient genome data from North and South American samples. They conclude that a single migrant population travelled from Siberia about 23,000 years ago and subsequently populated America.

This result addresses one of the most hotly debated topics regarding migration into the New World, but the results are contradictory to another paper published at the same time in the prestigious science magazine *Nature*, “Genetic Evidence for Two Founding Populations of the Americas.” The discordant results from these two studies offer an insight into the way science approaches questions about ancestry, migration, and relatedness. Specifically, even if research groups are investigating similar topics, competing scientists do not typically use the same data sets. Nor do they utilize the same analyti-

cal methods. As a consequence, results frequently yield different conclusions, which further fuels competition and debate. Therefore, it is important to remember that there may be multiple answers to the same questions and that the answers might not be mutually exclusive.

Altmetric analyses give us a way to identify other publications focusing on migration into the New World. These other articles also seem to agree that the first Americans were *Homo sapiens* who came from northeastern Asia via the Bering Straits. Beyond that, however, altmetrics demonstrates that there is still substantial disagreement. Information from altmetrics also shows us that 41 US and international news outlets reported on the general topic, that more than 70% of the 252 tweets about it come from the public, and the majority of academic readers (according to Mendeley) are PhD students and researchers.

Ancient DNA research and the study of patterns of human migration are also featured in the article “Using Ancient Mitochondrial DNA to Study the Origins and Dispersal of Ancestral Polynesian Chickens across the Pacific.” In this study, molecular genetic analyses of DNA from modern and ancient chicken bones provide insight into human colonization of Oceania. The researchers identified a group of unique genetic traits found only in the Pacific. These genetic traits, considered a “genetic signature,” are believed to represent the authentic founding mitochondrial DNA from chicken lineages transported across the Pacific. Importantly, chickens carrying this genetic signature still persist on several Pacific islands at high frequencies.

As noted earlier, laboratories may not arrive at the same conclusions because of their use of different samples or analytical methodologies. An earlier study of modern and ancient chicken bones found a connection between Polynesian and pre-Columbian chickens in South America. The authors of the “Using Ancient DNA...” paper report that they find no such relationship and state that the earlier study should be viewed with caution, since the later results suggest its ancient DNA work was contaminated by modern chicken DNA. These controversies are often highlighted in popular science outlets such as *National Geographic*, leading to greater public interest and more tweets.

The media is alert to stories on human behavior and comparisons between humans and other animals. “The Evolution of Self-Control” describes the results of a study seven years in the making. By conducting two types of cognitive tests designed to measure self-control in 36 species, the authors found that absolute brain size, rather than relative brain size, was the best predictor of high self-control scores. Unsurprisingly, humans and other primates score higher than other species such as carnivores and birds. Other studies by co-authors of “The Evolution of Self-Control” paper have been published and contribute to the overall Altmetric scores.

As noted above, research on primate behavior, particularly in the wild, also draws significant attention. The press and public are especially drawn to research focusing on chimpanzee behavior. The paper “Tool Transfers Are a Form of Teaching among Chimpanzees” reports robust results related to the ways in which juvenile chimpanzees learn, and benefit from social learning, when termite fishing with their mothers. The study used 224 hours of videotape and 96 tool transfers to investigate teaching and learning strategies in common chimpanzees. The teaching and learning behaviors are said to be similar to our own and thus may help us understand ourselves. Media attention, in this case, focused on the impressive amount of video footage and the technical sophistication of the study.

Scientists who seek competitive funding for their research benefit from media attention. R1 universities encourage their offices for press and public affairs to publicize research results. Since physical anthropologists study issues that nearly everyone thinks about, there are newsworthy stories just about every day. What are our origins? What is our evolutionary history? How did our ancestors get to where they were? Why do we look and act the way we do? Physical anthropology benefits from attention in the media, popular books, television series, and even social media.

Genomic evidence for the Pleistocene and recent population history of Native Americans

Maanasa Raghavan et al.

Science

(August 21, 2015)

ARTICLE:

<https://s3-us-west-2.amazonaws.com/publicanthropology/books/Phys-Genomic+Native+Americans.pdf>

ALTMETRIC:

<https://publicanthropology.altmetric.com/details/4301135/news>

Maanasa Raghavan, Matthias Steinrücken, Kelley Harris, Stephan Schiffels, Simon Rasmussen, Michael DeGiorgio, Anders Albrechtsen, Cristina Valdiosera, María C. Ávila-Arcos, Anna-Sapfo Malaspinas, Anders Eriksson, Ida Moltke, Mait Metspalu, Julian R. Homburger, Jeff Wall, Omar E. Cornejo, J. Victor Moreno-Mayar, Thorfinn S. Korneliussen, Tracey Pierre, Morten Rasmussen, Paula F. Campos, Peter de Barros Damgaard, Morten E. Allentoft, John Lindo, Ene Metspalu, Ricardo Rodríguez-Varela, Josefina Mansilla, Celeste Henrickson, Andaine Seguin-Orlando, Helena Malmström, Thomas Stafford Jr., Suyash S. Shringarpure, Andrés Moreno-Estrada, Monika Karmin, Kristiina Tambets, Anders Bergström, Yali Xue, Vera Warmuth, Andrew D. Friend, Joy Singarayer, Paul Valdes, Francois Balloux, Ilán Lebreiro, Jose Luis Vera, Hector Rangel-Villalobos, Davide Pettener, Donata Luiselli, Loren G. Davis, Evelyne Heye, Christoph P. E. Zollikofer, Marcia S. Ponce de León, Colin I. Smith, Vaughan Grimes, Kelly-Anne Pike, Michael Deal, Benjamin T. Fuller, Bernardo Arriaza, Vivien Standen, Maria F. Luz, Francois Ricaut, Niede Guidon, Ludmila Osipova, Mikhail I. Voevoda, Olga L. Posukh, Oleg Balanovsky, Maria Lavryashina, Yuri Bogunov, Elza Khusnutdinova, Marina Gubina, Elena Balanovska, Sardana Fedorova, Sergey Litvinov, Boris Malyarchuk, Miroslava Derenko, M. J. Mosher, David Archer, Jerome Cybulski, Barbara Petzelt, Joycelynn Mitchell, Rosita Worl, Paul J. Norman, Peter Parham, Brian M. Kemp, Toomas Kivisild, Chris Tyler-Smith, Manjinder S. Sandhu, Michael Crawford, Richard Villems, David Glenn Smith, Michael R. Waters, Ted Goebel, John R. Johnson, Ripan S. Malhi, Mattias Jakobsson, David J. Meltzer, Andrea Manica, Richard Durbin, Carlos D. Bustamante, Yun S. Song, Rasmus Nielsen, and Eske Willerslev

Genetic history of Native Americans

Several theories have been put forth as to the origin and timing of when Native American ancestors entered the Americas. To clarify this controversy, Raghavan et al. examined the genomic variation among ancient and modern individuals from Asia and the Americas. There is no evidence for multiple waves of entry or recurrent gene flow with Asians in northern populations. The earliest migrations occurred no earlier than 23,000 years ago from Siberian ancestors. Amerindians and Athabascans originated from a single population, splitting approximately 13,000 years ago.

Structured abstract

INTRODUCTION

The consensus view on the peopling of the Americas is that ancestors of modern Native Americans entered the Americas from Siberia via the Bering Land Bridge and that this occurred at least ~14.6 thousand years ago (ka). However, the number and timing of migrations into the Americas remain controversial, with conflicting interpretations based on anatomical and genetic evidence.

RATIONALE

In this study, we address four major unresolved issues regarding the Pleistocene and recent population history of Native Americans: (i) the timing of their divergence from their ancestral group, (ii) the number of migrations into the Americas, (iii) whether there was ~15,000 years of isolation of ancestral Native Americans in Beringia (Beringian Incubation Model), and (iv) whether there was post-Pleistocene survival of relict populations in the Americas related to Australo-Melanesians, as suggested by apparent differences in cranial morphologies between some early (“Paleoamerican”) remains and those of more recent Native Americans. We generated 31 high-coverage modern genomes from the Americas, Siberia, and Oceania; 23 ancient genomic sequences from the Americas dating between ~0.2 and 6 ka; and SNP chip genotype data from 79 present-day individuals belonging to 28 popu-

lations from the Americas and Siberia. The above data sets were analyzed together with published modern and ancient genomic data from worldwide populations, after masking some present-day Native Americans for recent European admixture.

RESULTS

Using three different methods, we determined the divergence time for all Native Americans (Athabascans and Amerindians) from their Siberian ancestors to be ~ 20 ka, and no earlier than ~ 23 ka. Furthermore, we dated the divergence between Athabascans (northern Native American branch, together with northern North American Amerindians) and southern North Americans and South and Central Americans (southern Native American branch) to be ~ 13 ka. Similar divergence times from East Asian populations and a divergence time between the two branches that is close in age to the earliest well-established archaeological sites in the Americas suggest that the split between the branches occurred within the Americas. We additionally found that several sequenced Holocene individuals from the Americas are related to present-day populations from the same geographical regions, implying genetic continuity of ancient and modern populations in some parts of the Americas over at least the past 8500 years. Moreover, our results suggest that there has been gene flow between some Native Americans from both North and South America and groups related to East Asians and Australo-Melanesians, the latter possibly through an East Asian route that might have included ancestors of modern Aleutian Islanders. Last, using both genomic and morphometric analyses, we found that historical Native American groups such as the Pericúes and Fuego-Patagonians were not “relicts” of Paleoamericans, and hence, our results do not support an early migration of populations directly related to Australo-Melanesians into the Americas.

CONCLUSION

Our results provide an upper bound of ~ 23 ka on the initial divergence of ancestral Native Americans from their East Asian ancestors, followed by a

short isolation period of no more than ~8000 years, and subsequent entrance and spread across the Americas. The data presented are consistent with a single-migration model for all Native Americans, with later gene flow from sources related to East Asians and, indirectly, Australo-Melanesians. The single wave diversified ~13 ka, likely within the Americas, giving rise to the northern and southern branches of present-day Native Americans.

Tool transfers are a form of teaching among chimpanzees

Stephanie Musgrave, David Morgan, Elizabeth Lonsdorf, Roger Mundry, and Crickette Sanz

Scientific Reports

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ARTICLE:

<https://www.nature.com/articles/srep34783>

ALTMETRIC:

<https://publicanthropology.altmetric.com/details/12559657/news>

Abstract

Teaching is a form of high-fidelity social learning that promotes human cumulative culture. Although recently documented in several nonhuman animals, teaching is rare among primates. In this study, we show that wild chimpanzees (*Pan troglodytes troglodytes*) in the Goualougo Triangle teach tool skills by providing learners with termite fishing probes. Tool donors experienced significant reductions in tool use and feeding, while tool recipients significantly increased their tool use and feeding after tool transfers. These transfers meet functional criteria for teaching: they occur in a learner's presence, are costly to the teacher, and improve the learner's performance. Donors also showed sophisticated cognitive strategies that effectively buffered them against potential costs. Teaching is predicted when less costly learning mechanisms are insufficient. Given that these chimpanzees manufacture sophisticated, brush-tipped fishing probes from specific raw materials, teaching in this population may relate to the complexity of these termite-gathering tasks.

The evolution of self-control

Evan L. MacLean et al.

PNAS

(Proceedings of the National Academy of Sciences of the United States of America)

111, no. 20 (May 20, 2014): E2140–E2148

ARTICLE:

<http://www.pnas.org/content/111/20/E2140>

ALTMETRIC:

<http://publicanthropology.altmetric.com/details/2294342/news>

Significance

Although scientists have identified surprising cognitive flexibility in animals and potentially unique features of human psychology, we know less about the selective forces that favor cognitive evolution, or the proximate

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biological mechanisms underlying this process. We tested 36 species in two problem-solving tasks measuring self-control and evaluated the leading hypotheses regarding how and why cognition evolves. Across species, differences in absolute (not relative) brain volume best predicted performance on these tasks. Within primates, dietary breadth also predicted cognitive performance, whereas social group size did not. These results suggest that increases in absolute brain size provided the biological foundation for evolutionary increases in self-control, and implicate species differences in feeding ecology as a potential selective pressure favoring these skills.

Abstract

Cognition presents evolutionary research with one of its greatest challenges. Cognitive evolution has been explained at the proximate level by shifts in absolute and relative brain volume and at the ultimate level by differences in social and dietary complexity. However, no study has integrated the experimental and phylogenetic approach at the scale required to rigorously test these explanations. Instead, previous research has largely relied on various measures of brain size as proxies for cognitive abilities. We experimentally evaluated these major evolutionary explanations by quantitatively comparing the cognitive performance of 567 individuals representing 36 species on two problem-solving tasks measuring self-control. Phylogenetic analysis revealed that absolute brain volume best predicted performance across species and accounted for considerably more variance than brain volume controlling for body mass. This result corroborates recent advances in evolutionary neurobiology and illustrates the cognitive consequences of cortical reorganization through increases in brain volume. Within primates, dietary breadth but not social group size was a strong predictor of species differences in self-control. Our results implicate robust evolutionary relationships between dietary breadth, absolute brain volume, and self-control. These findings provide a significant first step toward quantifying the primate cognitive phenome and explaining the process of cognitive evolution.

Using ancient DNA to study the origins and dispersal of ancestral Polynesian chickens across the Pacific

Vicki A. Thomson et al.

PNAS

(Proceedings of the National Academy of Sciences of the United States of America)

111, no. 13 (April 1, 2014): 4826-4831

ARTICLE:

<http://www.pnas.org/content/111/13/4826>

ALTMETRIC:

<https://publicanthropology.altmetric.com/details/2191348/news>

Significance

Ancient DNA sequences from chickens provide an opportunity to study their human-mediated dispersal across the Pacific due to the significant genetic diversity and range of archaeological material available. We analyze ancient and modern material and reveal that previous studies have been impacted by contamination with modern chicken DNA and, that as a result, there is no evidence for Polynesian dispersal of chickens to pre-Columbian South

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America. We identify genetic markers of authentic ancient Polynesian chickens and use them to model early chicken dispersals across the Pacific. We find connections between chickens in the Micronesian and Bismarck Islands, but no evidence these were involved in dispersals further east. We also find clues about the origins of Polynesian chickens in the Philippines.

Abstract

The human colonization of Remote Oceania remains one of the great feats of exploration in history, proceeding east from Asia across the vast expanse of the Pacific Ocean. Human commensal and domesticated species were widely transported as part of this diaspora, possibly as far as South America. We sequenced mitochondrial control region DNA from 122 modern and 22 ancient chicken specimens from Polynesia and Island Southeast Asia and used these together with Bayesian modeling methods to examine the human dispersal of chickens across this area. We show that specific techniques are essential to remove contaminating modern DNA from experiments, which appear to have impacted previous studies of Pacific chickens. In contrast to previous reports, we find that all ancient specimens and a high proportion of the modern chickens possess a group of unique, closely related haplotypes found only in the Pacific. This group of haplotypes appears to represent the authentic founding mitochondrial DNA chicken lineages transported across the Pacific, and allows the early dispersal of chickens across Micronesia and Polynesia to be modeled. Importantly, chickens carrying this genetic signature persist on several Pacific islands at high frequencies, suggesting that the original Polynesian chicken lineages may still survive. No early South American chicken samples have been detected with the diagnostic Polynesian mtDNA haplotypes, arguing against reports that chickens provide evidence of Polynesian contact with pre-European South America. Two modern specimens from the Philippines carry haplotypes similar to the ancient Pacific samples, providing clues about a potential homeland for the Polynesian chicken.

