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A human skull is the central focus, resting on a vibrant red cloth. The skull is light-colored with some darker, weathered patches. Its eye sockets, nasal cavity, and upper jaw are clearly visible. In the background, several long, thin bones are scattered on a light surface, slightly out of focus. The overall lighting is soft, highlighting the texture of the bone and the cloth.

# Brutality in Our Bones

Debra Martin, winner of the 2015 Harry Reid Silver State Research Award,  
reveals that the answers about our darkest impulses can  
sometimes be found within what remains.

BY CHARLES E. REINEKE  
PHOTOGRAPHY BY AARON MAYES

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**L**AST SPRING, RESEARCHERS WORKING with 430,000-year-old Neanderthal remains in northern Spain published an extraordinary finding: A skull at the site showed unmistakable evidence that its owner had died during a violent attack from another hominin. The discovery, the scientists said, represented perhaps the earliest known instance of a homicide, an indication that the grim phenomenon known to anthropologists as “lethal interpersonal violence” has been going on for a very, very long time.

UNLV’s Debra Martin has spent more than three decades using skeletal remains to gain insights into how violence, ancient and modern, affects human populations. When a reporter from the BBC News asked her to comment on the Spanish discovery, Martin said she wasn’t at all surprised by the finding.

“I suspect the further we push back and find straight-up forensic evidence such as these authors have, we will find that violence is culturally mediated and has been with us as long as culture itself has been with us,” she said.

Queries from reporters are nothing new to Martin, the Lincy Professor of Anthropology at UNLV. As one of the nation’s most respected authorities on skeletal biology and violence, she has long been the go-to source for information on our species’ murderous ways. And not just for media. Scholars and students from around the world routinely seek out her thoughts.

“She is a consummate scholar—exceptionally well published; internationally renowned for her high-quality work; and a valued mentor to her students, all of whom are well on their way to becoming renowned scholars themselves, thanks to her dedication and support,” says Barbara Roth, chair of UNLV’s anthropology department.

Martin’s work goes beyond analyzing skeletal data, Roth adds; Martin is “one of only a handful of scholars who specialize in this field who integrates theoretical approaches on the evolution of violence, social inequality, and human health into her analysis and interpretations.”

Roth is not alone in her regard for Martin’s achievements. Earlier this year a committee of UNLV scholars named Martin as the recipient of the 2015 Harry Reid Silver State Research Award, the university’s most prestigious research honor. The award recognizes faculty members whose work significantly advances the recipient’s academic field, addresses real-world needs and concerns, and contributes to Nevada’s economic growth and development.

“Professor Martin has done terrific work at UNLV and throughout Southern Nevada. I congratulate her for receiving this award,” says Reid, Nevada’s senior U.S. senator. “I am honored to be associated with such an important program, which has promoted the work of many outstanding scholars

over the years. As the accomplishments of Professor Martin and her colleagues show, UNLV continues to make great strides as a world-class research institution.”

### CONNECTING THE DOTS

Perhaps not surprisingly, Martin didn’t grow up thinking she’d spend her career investigating the nature of human cruelty. Instead, she says, her goal was to use her aptitude for the biological sciences to help people. As with many similarly gifted young people, she thought becoming a medical doctor was the best way forward—a plan enthusiastically supported by her parents, both Eastern-European immigrants to the United States.

Coursework at Cleveland State University resulted in a rethink for the first-generation undergraduate. “Somewhere along the line, medicine and anthropology came together for me,” Martin says, a circumstance that led her to search for a mentor at the next level. “I found a really good person to do graduate work with at the University of Massachusetts, Amherst. His interest was the origin and evolution of disease, so he was looking at disease as far back as we could go by doing analyses of skeletons.”

Martin credits that person, renowned paleopathology and bioarcheology pioneer George J. Armelagos, with being her “guiding light.” An early project involved working with Armelagos on an investigation of ancient skeletal remains that had been previously unearthed in the Nubian desert of Sudan. The study reinforced Martin’s growing sense that the bones of the dead had much to teach us.

“I used thin sections of these bones to do what essentially a physician would do if they took a bone biopsy from a living human,” she says. By examining the bones’ cellular structure, Martin was able to show that many women from the area were dying young. The finding itself was not a surprise, she says, but the reason why was. Most scientists believed women in these ancient populations were in greater jeopardy of early death due to risks related to pregnancy and childbirth. In fact, other factors were to blame.

“Childbearing is actually something that we’re pretty well adapted to do,” Martin says. “The problem comes when your diet is not great.” For these Nubian women, she says, the skeletal samples showed that sorghum and millet had comprised the bulk of their nutritional intake. Both are deficient in the usable calcium and other nutrients that women need to stay healthy while pregnant and lactating.

On top of this, Martin adds, there was another, less benign revelation hidden in the bones. “There seemed to be a lot of gender differences: The age-matched males seemed robust and well-fed, their bones were doing great, and they didn’t die as frequently at those young ages.” Young men, it seems, were





getting privileged treatment at mealtime.

"This wasn't a pathway to thinking about violence, but I was starting to think about male and female health, what puts females at risk, and what makes it harder for females to live past that reproductive period," Martin says.

Things changed with a follow-up project, this one involving field work in the northeastern Arizona desert. There Martin joined a team that was excavating an ancient Native American site that was slated to be destroyed by surface mining. Evidence of violent conflict was common. "We were seeing skeletons that indicated people had a lot of fractures that had healed, head wounds that were healed. It got me thinking about the ways you could track interpersonal violence by looking at skeletal remains."

The Arizona project yielded enough material for years of study, work that Martin pursued while simultaneously immersing herself in scientific publications related to modern forensics. "That's where it really opened up for me," she says, "that the skills we use to read the ancient bones also allow us to think about the bones of people who died last year."

#### **MAKING MEANING FROM MURDEROUSNESS**

Martin earned her doctorate at UMass Amherst in 1983. After a stint of postdoctoral work, she joined the faculty of Hampshire College, a small liberal arts institution noted for its nontraditional approach to student learning and achievement. Martin recalls it as a great place to develop both research and teaching skills—two aspects of her professorial duties that she still works hard to perfect.

"At Hampshire College, promotion and tenure were based on you doing innovative things in the classroom. Are you, for example, engaging the students? Are you really helping them to learn versus just forcing them to memorize things that were going to be on the test?" Martin says. "One of the things Hampshire also emphasized was that the best teachers were the ones who were engaged in doing original research. I certainly agree." Researchers make good teachers, she says, because they tend to share with students the excitement and enthusiasm of their investigations. They also often include students directly in hands-on, real-world research projects.

At UNLV, for example, Martin has created an

**MENTORING FUTURE LEADERS** Debra Martin, left, works with Vanessa Alarcia, an undergraduate anthropology major. With Martin's support, Alarcia was selected as UNLV's first undergraduate intern at the Clark County Medical Examiner and Coroner's Office. Alarcia was subsequently chosen to participate in an all-expenses-paid Italian excavation funded through an NSF Research Experience for Undergraduates grant.

internship program in forensic anthropology through the Clark County Coroner/Medical Examiner's Office. The first undergraduate to participate, Vanessa Alarcia, recently received a fully funded National Science Foundation research award to excavate and study skeletons in Italy. In addition, Martin currently has four doctoral students who are developing projects with the Coroner's Office aimed at understanding patterns of violent death in Southern Nevada.

The decision to come to UNLV, where Martin arrived in 2006, was an easy one. Changes in her personal life had made a move attractive, and the allure of a desert location was also a big draw, considering Martin had spent the bulk of her professional career doing field work in such environments. That she would be following in the footsteps of emeritus professor Sheilagh Brooks,

namesake of UNLV's Sheilagh Brooks Osteology Research Laboratory and one of the nation's most distinguished scholars of bioarcheology and forensic anthropology, sealed the deal. "When the call came," she says, remembering the day her faculty appointment was confirmed, "it was almost too perfect."

Her time at UNLV, Martin says, has been the most productive of her career. "I have had seven books come out, all of them co-authored or co-edited with my graduate students. I had one book in the first 20 years of my career, and now, over this next 10 years, I've already multiplied that productivity by seven."

Martin's productivity is not limited to books. During her years at UNLV, she's worked with skeletal remains from Egypt and Sudan as well as sites across the American Southwest and Mexico. She and her graduate students are currently analyzing skeletal remains from a 5,000-year-old Bronze Age tomb from the United Arab Emirates. Martin excavated the remains and was able to bring the 400-plus individual burials back to UNLV for study. She has published in dozens of prominent peer-reviewed journals; among recent examples is an often-cited study in the *Proceedings of the National Academy of Sciences* that has spurred anthropologists to reexamine the nature of interethnic violence. In 2015, she received the UNLV Barrick Distinguished Scholar Award and the American Anthropological Association/Oxford University Press Award for Excellence in Undergraduate Teaching of Anthropology.

Some of Martin's most celebrated work at UNLV involves her forays into cultural questions raised by the harsh events she's documented in the bioarchaeological record. How, in other words, has conflict, brutality and physical trauma throughout the whole of human history shaped the nature of our social beings? And what do the remains of past victims have to tell us about why violence is such a persistent feature of the human condition?

"It's one thing to identify and diagnose—this person died of a head wound, this person had injuries from a sword—but anthropologists want to make meaning," Martin says. Deriving meaning from murderousness involves the deft deployment of constructs developed by social theorists. It also takes asking the right questions.

Many nonprofessionals get distracted by the numbers, asking, "Is there more or less violence now than 50, 100 or 1,000 years ago?" Such queries, says Martin, aren't terribly helpful. "The right question to ask," she says, "is 'Why is there violence in *this* group, and what problem is it solving?' Most of the violent acts that we're studying are those that are patterned. They may not be culturally sanctioned, but they happen with great frequency."

## CONTESTING THE ACCEPTED

Martin says she and her students often begin their search for such patterns by reframing the issue under consideration, asking, "If violence is the answer, what was the question?"

"Perpetrators carry out violent acts for all kinds of different reasons, so we have to broaden our analysis, after identifying the victim, to get at perpetrators' motives," Martin says. "We have to look into the culture to see whether [the violence] was about disputes over resource distribution or environmental constraints. Was it gendered; that is, did it involve ideas and cultural restrictions that put females at more risk for violence than males?" Such environmental and cultural contexts, she says, allow her and her colleagues to locate both individual perpetrators and victims within the larger, more powerful social forces that sowed the seeds of the violence in the first place.

A recent, groundbreaking instance of this process at work involves a book-length study related to violence and climate change, an area in which Martin and other anthropologists are intensely interested. The prevailing wisdom, Martin says, is that drought and other weather-related crop failures—conditions that scientists see as a likely outcome of a warming planet—will automatically lead to violent disruptions around the globe.

Martin and her graduate student Ryan Harrod—now an assistant professor of anthropology at the University of Alaska, Anchorage—used bioarchaeological case studies of ancient farmers to show that the reality is more nuanced. In fact, they determined that "humans are not more prone to violence when under severe restrictions of food or water due to droughts and other changes in climate." Even under stress, Martin and Harrod wrote, people "tend to be very creative and innovative" in seeking homegrown solutions, only attempting to migrate to better areas as a last resort.

Martin points to this finding as a particularly vivid instance of how studying the remains of our ancestors can have real-world policy implications: Because it is migration and not climatological effects, per se, that spurred ancient violence, policymakers today would do well to focus on helping climate-change victims stay at home rather than mobilizing soldiers to avoid migrants breaching their borders.

Another recent project involved examining the nature of massacres—more specifically, the strange and unsettling way in which perpetrators sometimes practice "extreme violence" against their victims. Such behavior is often marked by continuing assaults after the victim has died, taking trophies, and mutilating or manipulating the bodies of the dead. Martin says she and her

doctoral students, Cheryl Anderson (recipient of the UNLV Foundation Board of Trustees Graduate College Fellowship) and Amber Osterholtz, have discovered that these displays are "highly symbolic." Says Martin: "It's not just about destroying individuals, but essentially destroying their identity." This insight, Martin continues, would not have been possible without the work of another of her students, Anna Osterholtz, whose doctoral research showed that marks on bones can reveal evidence of extreme violence during massacres. Osterholtz's findings, which Martin says were the first to identify torture in the archaeological record, resulted in a job for Osterholtz at Mississippi State University, where she is now an assistant professor.

Martin is also working to systematically debunk a common academic stereotype related to gender: the idea that because men do most of the fighting, they suffer most from violence. The reality, Martin argues, is more complicated. In both past and present, she says, the same patriarchal forces that have traditionally given men greater access to resources have also ensured that "women were suffering; women were dying younger." Some of her students are using lessons learned from this insight to chart patterns of violence against women in Southern Nevada, data that may ultimately promote earlier and more effective interventions.

For many scholars, the pursuit of such numerous and wide-ranging projects would be a daunting, not to say exhausting, way to define a career. Martin simply thinks of it as the fulfillment of her youthful goal: using her aptitude for science to help people.

Does she ever regret not getting that M.D.? Not at all, she says, though she remembers her parents weren't so sure. "My mother, even until she died a couple of years ago, used to tell people, 'Well, she could have been a *real* doctor! But instead she does this anthropology stuff,'" Martin recalls with a laugh.

For her part, Martin says she couldn't be happier with the way the "anthropology stuff" has worked out, especially since making the move to the desert. "Once I took the job at UNLV, I've never looked back. It's been fabulous to be at a major research institution and to build and grow a graduate program. Right now I have nine doctoral students who are all interested in the effects of violence on human health, the origins of violence, [and] patterns of violent death. It's a really neat research team that we've put together here at UNLV, and I'm really excited about where we're heading."

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