

Laudation: Dr. Antonio Rodríguez-Hidalgo, Eighteenth Recipient of the Tübingen Prize for Early Prehistory and Quaternary Ecology

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Ladies and gentlemen, friends, colleagues, students, representatives of EiszeitQuell, Dean, and of course, Dr. Antonio Rodríguez-Hidalgo,

I am honored to welcome you all to the eighteenth ‘Tübinger Förderpreis für Ältere Urgeschichte und Quartärökologie’. This ceremony is truly one of the highlights of the



Award of the eighteenth Tübingen Prize for Early Prehistory and Quaternary Ecology on February 04, 2016, at Schloss Hohentübingen. From left to right: Prof. Nicholas J. Conard Ph.D. (jury), Yvonne Willy, Achim Jarck (both Romina Mineralbrunnen GmbH, sponsor), Dr. Antonio Rodríguez-Hidalgo (recipient), Prof. Dr. Christopher Müller, Prof. Dr. Harald Floss, Dr. Britt M. Starkovich, Prof. Dr. Michael Bolus (all jury). Photo: H. Jensen.

year in Tübingen, when we all come together to honor the work of a brilliant young scientist at the beginning of his/her career in human evolution and Quaternary studies. As many of you know, in past years this prize has gone to scholars who are now well-known names in archaeology. And judging by the scope and caliber of his research, this year's winner will be no different. We always try to impress upon you how intense the competition was, and how many high-quality applicants we received, but believe me, this year's jury meetings were the most intense I have seen in my time here. At one point, I thought a few of the jury members were going to have to arm-wrestle to finally come to a decision. But in the end we did, and I believe I can speak for the entire jury that we all stand by our choice.

On behalf of the jury, our sponsor, and in the name of the founder of the prize, I would like to present the winner of this year's award, Dr. Antonio Rodríguez-Hidalgo. Dr. Rodríguez-Hidalgo was born in 1978 and received his bachelor's in History from the Universidad de Extremadura in Spain and the Università Degli Studi di Parma in Italy. He then moved to Tarragona where he earned his master's in Quaternary Archaeology and Human Evolution at Rovira i Virgili University. Until recently he was a researcher at the Catalan Institute of Human Paleocology and Social Evolution with the Atapuerca Research Project, and continues to work on many projects in Spain. Everyone familiar with the Atapuerca project is aware of the scientific contribution all aspects of the team have made to our understanding of hominin evolution, but I have to say that his work is exceptional even within this context. Dr. Rodríguez-Hidalgo is a zooarchaeologist who has three main areas of research: taphonomic studies of small mammal assemblages, human cannibalism in the Pleistocene, and the evolution of hominin hunting as seen at Atapuerca.

His CV is extremely impressive for anyone at the beginning of their career. In the last five years he has been on 22 peer-reviewed publications, nine of which he is the primary author, in journals such as *Journal of Human Evolution*, *Journal of Archaeological Science*, *Quaternary International*, and *PLOS ONE*. Students, postdocs, professors – let that sink in for a moment: 22 peer-reviewed papers, one of which had the top-scoring Altmetric index for the *Journal of Human Evolution* in 2015, and another in 2012. That's what happens when you write about cannibalism, which incidentally is not the topic of our discussion today.

The specific work for which Dr. Rodríguez-Hidalgo is awarded the Tübinger Förderpreis is his doctoral dissertation. He defended his thesis in 2015 under the supervision of Palmira Saladié and Eudald Carbonell to earn his Ph.D. in the Erasmus Mundus program in the Quaternary and Prehistory Graduate School at Rovira i Virgili University and the Catalan Institute of Human Paleocology and Social Evolution in Tarragona. The title of his dissertation is "Subsistence Dynamics during the Middle Pleistocene in the Sierra de Atapuerca: the Archaeological Assemblages of TD10.1 and TD10.2." This study, which I will introduce briefly, is a crucial piece in our understanding the origins of hominin hunting strategies during the European Lower Paleolithic.

Antonio's thesis analyzes hominin hunting patterns from two very different layers at Gran Dolina in the Sierra de Atapuerca. The older of the two, TD10.2, is a 400,000 year-old bison bone bed. The faunal composition of the layer is over 90% bison, with a minimum of 60 different individuals. The ages of the bison include juveniles, prime-aged

adults, and old adults, in proportions similar to those found in a living herd of animals. Seasonality studies indicate that most deaths occurred in late spring and early fall. The bones have ample evidence of human cut marks, including recognizable, repetitive behaviors, such as cut marks on many mandibles from removing the tongue. A large number of carnivore bite marks are found on the bones, but they are always found on top of hominin cut marks when there is evidence of both kinds of damage, so carnivores were scavenging the remains of hominin kills. The assemblage is comprised of a large number of axial elements, which tells us that the meaty parts, such as the long bones, were transported elsewhere to be eaten. Based on all of the evidence, Dr. Rodríguez-Hidalgo concludes that 400,000 years ago, the site was used as a natural trap on multiple occasions to assist hominin hunters in selective, communal mass hunting events. This indicates a high level of cognitive, technological, and social skills that are not unlike sophisticated behaviors we observe among modern humans in later archaeological sites around the world. One of the most interesting parts about this aspect of his research is how Antonio compares his data to late prehistoric and even historic bison kills in the Americas in order to interpret his results. So often we are blinded to other, extremely relevant information that is available, simply because it is outside of our geographic or temporal focus, and happily this study does not do that.

For the second part of his dissertation, Dr. Rodríguez-Hidalgo analyzed the fauna from the stratigraphically higher layer TD10.1 at Gran Dolina, which dates to 300,000 years ago. In this assemblage, he found a large number of red deer bones, which he interprets as specialized hunting of the species. Though there is some carnivore damage on the remains, the bones were heavily processed by hominins, and the representation of elements indicates that animal parts rich in meat and fat were preferentially brought to the site. Based on this, Antonio interprets the site as a residential base camp where social activities such as carcass processing and meat sharing took place. Interestingly, the majority of animals in the assemblage were prime-aged adults. This is consistent with human hunting patterns found at many Middle and Upper Paleolithic sites, and fits well within the small universe of similar data available for the Lower Paleolithic.

So how does Dr. Rodríguez-Hidalgo's work contribute to our understanding of the ice age and human evolution? For a zooarchaeology geek such as myself, it is pretty obvious, but I understand that not everybody spends all of their time thinking about this kind of thing. On one level, Antonio's work adds another important data point regarding hominin subsistence from two different time periods in northern Spain. Significant in this is the fact that his work lends further support to the idea that the origins of the hominin hunting niche, specifically the targeting of prime-aged adult animals, began well in the Lower Paleolithic, as opposed to with Neanderthals or even modern humans, as many scholars used to believe. He also demonstrates changes in the way that Gran Dolina was used, from a natural trap for bison, to a base camp for later hominins. But beyond this, his work provides evidence for the earliest example of communal hunting, and the fact that this was not a one-off event. This indicates a level of social, cognitive, and linguistic sophistication that we tend not to associate with early hominins, and is a critical step in understanding our origins.

Ladies and gentlemen, in this brief introduction I am confident that I have not done justice to Antonio's work. It is now time to hear from this impressive scientist in his own

words. On behalf of the jury and our sponsor, I would like to again express our most sincere congratulations. It is my pleasure to introduce you to Dr. Rodríguez-Hidalgo, whose lecture is titled “Subsistence Dynamics during the Middle Pleistocene.”