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Genetic evidence for anatomically modern humans (AMH) out of Africa before 75 thousand years ago (ka) and in island southeast Asia (ISEA) before 60 ka (93-61 ka) predates accepted archaeological records of occupation in the region. Claims that AMH arrived in ISEA before 60 ka have been supported only by equivocal or non-skeletal evidence. AMH evidence from this period is rare and lacks robust chronologies owing to a lack of direct dating applications, poor preservation and/or excavation strategies and questionable taxonomic identifications. Lida Ajer is a Sumatran Pleistocene cave with a rich rainforest fauna associated with fossil human teeth. The importance of the site is unclear owing to unsupported taxonomic identification of these fossils and uncertainties regarding the age of the deposit, therefore it is rarely considered in models of human dispersal. Here we reinvestigate Lida Ajer to identify the teeth confidently and establish a robust chronology using an integrated dating approach. Using enamel–dentine junction morphology, enamel thickness and comparative morphology, we show that the teeth are unequivocally AMH. Luminescence and uranium-series techniques applied to bone-bearing sediments and speleothems, and coupled uranium-series and electron spin resonance dating of mammalian teeth, place
modern humans in Sumatra between 73 and 63 ka. This age is consistent with biostratigraphic estimations, palaeoclimate and sea-level reconstructions, and genetic evidence for a pre-60 ka arrival of AMH into ISEA. Lida Ajer represents, to our knowledge, the earliest evidence of rainforest occupation by AMH, and underscores the importance of reassessing the timing and environmental context of the dispersal of modern humans out of Africa.

http://www.nature.com/nature/journal/v548/n7667/full/nature23452.html?WT.ec_id=NATURE-20170817&spMailingID=54718285&spUserID=MjA1NTkxNTc2NAS2&spJobID=1222696353&spReportId=MTlyMjY5NjM1MwS2

Nature Scientific Reports

ARMITA GOLKAR & ANDREAS OLSSON – The interplay of social group biases in social threat learning
Learning from other individuals (e.g. social learning) is subjected to biases affecting whom to learn from. Consistent with research in animals, showing similarity-based learning biases and a general tendency to display pro-social responses to in-group individuals, we recently demonstrated that social learning of both fear and safety was enhanced when information was transmitted between same-race individuals. Here, we addressed how two different social group categories jointly affect the transmission of fears by investigating the interplay between racial and supporter group membership. We demonstrate that supporter group membership differentially influenced learning from a racial in-group vs. racial out-group individual. Thus, conditioned skin conductance responses in the same-race condition were significantly higher when fear was transmitted by an in-group (same team) vs. an out-group (rival team) individual, and were related to supporter team identification. However, supporter group membership did not influence learning from a racial out-group demonstrator, suggesting that the presence of an alternative alliance does not necessarily reduce the influence of racial biases on social fear learning.

http://www.nature.com/articles/s41598-017-07522-z?WT.ec_id=SREP-20170815&spMailingID=54709836&spUserID=ODY4NjU1NzU3NQS2&spJobID=1222478800&spReportId=MTlyMjQ3ODgwMA5S2

PLoS One

MARK ALFANO et al – Development and validation of a multi-dimensional measure of Intellectual humility
This paper presents five studies on the development and validation of a scale of intellectual humility. This scale captures cognitive, affective, behavioral, and motivational components of the construct that have been identified by various philosophers in their conceptual analyses of intellectual humility. We find that intellectual humility has four core dimensions: Open-mindedness (versus Arrogance), Intellectual Modesty (versus Vanity), Corrigibility (versus Fragility), and Engagement (versus Boredom). These dimensions display adequate self-informant agreement, and adequate convergent, divergent, and discriminant validity. In particular, Open-mindedness adds predictive power beyond the Big Six for an objective behavioral measure of intellectual humility, and Intellectual Modesty is uniquely related to Narcissism. We find that a similar factor structure emerges in Germanophone participants, giving initial evidence for the model's cross-cultural generalizability.

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0182950

PNAS

NOREEN VON CRAMON-TAUBADELA – Measuring the effects of farming on human skull morphology
Approximately 10,000 years ago, certain human groups began to rely on diets derived from domesticated plants and animals rather than acquiring wild sources of food via hunting, gathering, and foraging. This transition in subsistence economy occurred independently in several global regions, with particular starchy crops (e.g., wheat, barley, rice, maize, etc.) becoming staple food sources in different continents. The profound effects of the transition to agriculture on the biology of modern humans cannot be overstated. These effects include an increased tendency to stay in a single place for extended periods of time, changes in weaning practices, increases in the incidence of infectious disease, and increased fecundity, leading ultimately to an explosion in the global human population. Without the development of horticultural and animal-rearing practices, it would not be possible to sustain the enormous population of humans alive on the planet today. Anthropologists have long been interested in the effects of this shift in subsistence strategy from a genetic, morphological, social, and medical perspective. Agricultural diets are, in general, less variable, higher in starch and sugars, and lower in protein compared with forager diets, resulting in a suite of health-related problems such as anemia, dental caries, vitamin deficiencies, and malnutrition. Agricultural diets are also softer, on average, meaning that they are mechanically less demanding in terms of chewing than forager diets.

http://www.pnas.org/content/pnas/early/2017/08/14/1711475114.extract.html?collection
PATRIZIA D’ETTORRE, NINA DEISIG & JEAN-CHRISTOPHE SANDOZ – Decoding ants’ olfactory system sheds light on the evolution of social communication

Chemical communication is the primordial and possibly most efficient way of transmitting messages between living units. It has reached its apex in the “superorganisms”, for example in colonies of eusocial insects, such as honey bees. Colony survival and reproductive success rely on the chemical communication channel to maintain an advanced social organization characterized by high levels of cooperation and low levels of conflicts. Eusocial bees and ants are model organisms for understanding social chemical communication; hence, recent research has focused on the identification of chemoreceptors. A new study by Slone et al. uses the ant Harpegnathos saltator to investigate the molecular mechanisms underlying chemoreception of socially relevant semiochemicals.

http://www.pnas.org/content/pnas/early/2017/08/14/171075114.extract.html?collection

PAPERS

NINA MARSH et al – Oxytocin-enforced norm compliance reduces xenophobic outgroup rejection

Never before have individuals had to adapt to social environments defined by such magnitudes of ethnic diversity and cultural differentiation. However, neurobiological evidence informing about strategies to reduce xenophobic sentiment and foster altruistic cooperation with outsiders is scarce. In a series of experiments settled in the context of the current refugee crisis, we tested the propensity of 183 Caucasian participants to make donations to people in need, half of whom were refugees (outgroup) and half of whom were natives (ingroup). Participants scoring low on xenophobic attitudes exhibited an altruistic preference for the outgroup, which further increased after nasal delivery of the neuropeptide oxytocin. In contrast, participants with higher levels of xenophobia generally failed to exhibit enhanced altruism toward the outgroup. This tendency was only countered by pairing oxytocin with peer-derived altruistic norms, resulting in a 74% increase in refugee-directed donations. Collectively, these findings reveal the underlying sociobiological conditions associated with outgroup-directed altruism by showing that charitable social cues co-occurring with enhanced activity of the oxytocin system reduce the effects of xenophobia by facilitating prosocial behavior toward refugees.


GRETCHE\N PERRY & MARTIN DALY – A model explaining the matrilateral bias in alloparental investment

Maternal grandmothers invest more in childcare than paternal grandmothers. This bias is large where the expression of preferences is unconstrained by residential and lineage norms, and is detectable even where marriage removes women from their natal families. We maintain that the standard evolutionary explanation, paternity uncertainty, is incomplete, and present an expanded model incorporating effects of allop\arents on the mother as well as on her children. Alloparenting lightens a mother’s load and increases her residual nepotistic value: her expected fitness from later investments in personal reproduction and in her natal relatives. The mother’s mother derives fitness from all such investments, whereas her mother-in-law gains only from further investment in children sired by her son, and thus has less incentive to assist the mother even if paternity is certain. This logic extends to kin other than grandmothers. We generate several hypotheses for future research.

http://www.pnas.org/content/pnas/early/2017/08/14/1705910114.abstract.html?collection

YAARA YESHURUN, MAI NGUYEN & URI HASSON – Amplification of local changes along the timescale processing hierarchy

Small changes in word choice can lead to dramatically different interpretations of narratives. How does the brain accumulate and integrate such local changes to construct unique neural representations for different stories? In this study, we created two distinct narratives by changing only a few words in each sentence (e.g., “he” to “she” or “sobbing” to “laughing”) while preserving the grammatical structure across stories. We then measured changes in neural responses between the two stories. We found that differences in neural responses between the two stories gradually increased along the hierarchy of processing timescales. For areas with short integration windows, such as early auditory cortex, the differences in neural responses between the two stories were relatively small. In contrast, in areas with the longest integration windows at the top of the hierarchy, such as the precuneus, temporal parietal junction, and medial frontal cortices, there were large differences in neural responses between stories. Furthermore, this gradual increase in neural differences between the stories was highly correlated with an area’s ability to integrate information over time. Amplification of neural differences did not occur when changes in words did not alter the interpretation of the story (e.g., sobbing to “crying”). Our results demonstrate how subtle differences in words are gradually accumulated and amplified along the cortical hierarchy as the brain constructs a narrative over time.

http://www.pnas.org/content/pnas/early/2017/08/14/1701652114.abstract.html?collection

Scientific American

NEWS

The Oldest Homo sapiens?

Fossils from Morocco complicate the story of modern humans

http://www.nature.com/scientificamerican/journal/v317/n3/full/scientificamerican0917-12.html?WT.ec_id=SCIENTIFICAMERICAN-
PAUL GOLDBERG, CHRISTOPHER E. MILLER & SUSAN M. MENTZER – Recognizing Fire in the Paleolithic Archaeological Record

Everyone agrees that fire has played an important part in the history of the genus Homo. However, because of the sometimes ephemeral and ambiguous nature of the evidence for fire in the Paleolithic record, establishing when and how hominins actively interacted with fire has been difficult. Over the past several decades, multiple techniques have been developed and employed in the search for the origins of human use of fire. Because fire is a natural phenomenon, the identification of burned remains at an archaeological site is generally not considered to be, on its own, convincing evidence for human use of fire. Rather, much of the difficulty of identifying early evidence for fire use has hinged on the question of how to establish a more direct link between burned materials and human activity. Here, we advocate for an approach to the investigation of the history of hominin use of fire that emphasizes an integration of multiple techniques. In particular, we argue that a contextualized study conducted at the microscopic scale—what we call a microcontextual approach—shows the most promise for establishing a behavioral connection between hominins and fire in the archaeological record.

http://www.journals.uchicago.edu/doi/abs/10.1086/692729

VERA ALDEIAS – Experimental Approaches to Archaeological Fire Features and Their Behavioral Relevance

The uses and functions of fire in early human adaptations are commonly debated and at times very controversial topics. It is important to recognize under what circumstances and conditions specific fire-related traces can be produced and preserved in the archaeological record. Currently, a growing body of data is emerging on the application of experimental research to the study of archaeological hearths and their residues. In this review, I draw together aspects of such available experimental data, particularly those pertaining to the sedimentary expression and components produced during simple campfires. I highlight not only what one can find in ideal preservation conditions but also what type of indirect alteration proxies can be expected to survive in the archaeological record. I then discuss the implications of such data for analyzing anthropic fire features, their timing, and their meaning in terms of behavioral complexity in the use and manufacture of fire during the Paleolithic.

http://www.journals.uchicago.edu/doi/abs/10.1086/691210

J. A. J. GOWLETT et al – Evidence of Burning from Bushfires in Southern and East Africa and Its Relevance to Hominin Evolution

Early human fire use is of great scientific interest, but little comparative work has been undertaken across the ecological settings in which natural fire occurs or on the taphonomy of fire and circumstances in which natural and human-controlled fire could be confused. We present here results of experiments carried out with fire fronts from grass- and bushland in South and East Africa. Our work illustrates that in these circumstances hominins would have been able to walk with and exploit fires, and we emphasize that there can be different levels of fire use. The results also indicate that traditional assumptions about the discrimination of these are not reliable. Grass fires pass through the landscape rapidly in burns of less than 5 minutes duration, but areas of denser vegetation burn to much higher temperatures and for much longer. Trees are also caught in fires and may burn back into their roots, baking sediments. Animal bones on the surface can also become burned, so that presence of burned bone has to be used with care as an indicator of human activity. Duration of burning, repeated nature of burning, and copresence of features of human activity may give a better indication of human involvement.

http://www.journals.uchicago.edu/doi/abs/10.1086/692249

CAROLINA MALLOL & AURÉADE HENRY – Ethnoarchaeology of Paleolithic Fire: Methodological Considerations

Most of the ethnoarchaeological literature on hearths is scattered within general works that target many different aspects of foraging or hunter-gatherer societies. Although these works are a good source of ideas and clues for the interpretation of macroscopically observable features of Paleolithic hearths, there is hardly any high-resolution ethnoarchaeological reference material with which to compare microstratigraphic evidence of archaeological fire. Our ethnoarchaeological research at this scale has focused on exploring differential preservation of open-air hearths and the potential to identify fire-related activities and different variables of fire technology (fuel, temperature, and function) using micromorphological and anthracological analysis. Although these studies have been useful sources of analogy, further case studies as well as ethnoarchaeological examples of superposed and imbricated hearths and reference material from enclosed settings such as caves and rock shelters are strongly called for. In this paper we summarize and discuss aspects of our previous work to highlight the strengths and weaknesses of the ethnoarchaeological approach for the study of Paleolithic fire and propose possible avenues for future research on the topic.

http://www.journals.uchicago.edu/doi/abs/10.1086/691422
SIMON J. HOLDAWAY, BENJAMIN DAVIES & PATRICIA C. FANNING – Aboriginal Use of Fire in a Landscape Context: Investigating Presence and Absence of Heat- Retainer Hearths in Western New South Wales, Australia

A case study from western New South Wales, Australia, illustrates the age, preservation, and distribution of late Holocene heat-retainer hearths that are abundant in the semi-arid archaeological record in the region. These hearths were constructed as underground ovens with stone heat retainers. They appear archaeologically as eroded concentrations of heat-fractured stone sometimes protecting charcoal deposits. We explore geomorphic processes influencing hearth temporal and spatial distributions using a neutral agent-based model. Parallels between model outcomes and the distribution of hearths in space and time suggest that processes of sediment erosion and deposition are having complex effects on hearth survivorship and therefore on patterns of hearth frequency. We consider the various processes that explain why hearths were made in the past and how they manifest in the present. Despite the relatively recent age of the hearths when compared with evidence for fire use in the Paleolithic record, the presence and absence of these fire features reflect the outcome of a large number of processes interacting together, not all of them related to human behavior. We use the results of the case study to comment on current behavioral models for the presence and absence of fire use in the distant past.

http://www.journals.uchicago.edu/doi/abs/10.1086/691436

SARAH HLUBIK et al – Researching the Nature of Fire at 1.5 Mya on the Site of FxJ120 AB, Koobi Fora, Kenya, Using High-Resolution Spatial Analysis and FTIR Spectrometry

Some scholars explain the major anatomical characteristics that differentiate Homo erectus from its predecessor, Homo habilis, as the result of Homo erectus being adapted to use fire for cooking and other tasks. However, many scholars contend that the evidence of fire in Homo erectus sites is very scant and is not convincingly anthropogenic. This study presents a methodology to evaluate the evidence of fire associated with the 1.5-million-year-old Homo erectus site FxJ120 AB, Koobi Fora, Kenya. The evidence is in the form of thermally altered lithics, soil aggregates, and bone fragments identified using visual inspection and Fourier transform infrared spectroscopy (FTIR). We conducted high-resolution excavation focused on the recovery and high-resolution mapping of large and small finds (<2 cm). ArcGIS spatial analysis and soil micromorphology were used to assess whether the evidence of fire at the site has a natural or anthropogenic origin. Preliminary results indicate that the spatial pattern of heated and unheated archaeological material is not inconsistent with prehistoric anthropogenic fire features found in archaeological sites of Europe and West Asia.

http://www.journals.uchicago.edu/doi/abs/10.1086/692530

NIRA ALPERSON-AFIL – Spatial Analysis of Fire: Archaeological Approach to Recognizing Early Fire

The use of fire by early hominins is considered a significant technological and cultural revolution. Recently, the study of fire use has been affected by a troublesome trend that views chemical and microscopic techniques as the only acceptable analyses of fire residues, thus ignoring basic archaeological observations and analyses. This paper discusses the diverse expressions of early fire, their variability, and their level of significance and suggests that the spatial analysis of burned residues is a reliable method for recognizing early fire. Evidence from the site of Gesher Benot Ya’aqov (GBY) suggests that fire was routinely used by Acheulian hominins. In addition, new data on the spatial association between percussive activities and fire are presented. Such evidence of routine and habitual use of fire requires intensity and recurrence, documented in sites with long occupational sequences such as GBY. This requirement excludes habitual use of fire from the majority of early hominin habitations, documented by short-term occupations of open-air sites. To deny Early to Middle Pleistocene hominins of the habitual use of fire is to ignore the archaeological record of their evolution, behavior, and culture.

http://www.journals.uchicago.edu/doi/abs/10.1086/692721

XING GAO et al – Evidence of Hominin Use and Maintenance of Fire at Zhoukoudian

Evidence for “controlled use of fire” by Homo erectus pekinensis at Zhoukoudian Locality 1 was initially discovered in the early 1930s and was widely accepted as the earliest such record in human evolutionary history for more than half a century. However, since the mid-1980s, this evidence has been questioned. Some of the questions were based on new research results, including geochemical and taphonomic studies conducted in the 1990s. Others are hypothetical and to some extent stem from a theoretical shift in ideas about early hominin subsistence capabilities, including hunting big game and using fire. Limited access to Chinese archaeological collections and literature, limited geological sampling, and postdepositional disturbance might all contribute to the results of these recent investigations. A thorough review of original field notes, excavation reports, and research papers leads to the conclusion that fossils, cultural materials, and traces of fire use in certain horizons at the site are abundant, unambiguous, and mutually supportive. New field investigations and laboratory analyses at Locality 1, ongoing since 2009, have yielded new evidence that indicates that Layer 4 contains clear-cut evidence for in situ use of fire. Future research may well reveal similar evidence for Layers 8–9 and 10, potentially resolving this ongoing debate comprehensively.

http://www.journals.uchicago.edu/doi/abs/10.1086/692721

HAROLD L. DIBBLE et al – How Did Hominins Adapt to Ice Age Europe without Fire?

Analyses of archaeological material recovered from several Middle Paleolithic sites in southwest France have provided strong corroborating data on Neanderthal use of fire. Both direct and indirect data show that Neanderthals in this region were frequently and/or intensively using fire during warmer periods, but such evidence declines significantly in occupations that
took place during colder periods. One possible explanation for this pattern is that it reflects the inability of Western European Neanderthals to make fire, simply because natural sources of fire occur much more frequently during warmer climatic periods. Regardless of the explanation, the long periods of diminished evidence of fire shows that, unlike modern humans, these hominins were not obligate fire users, and this fact in itself raises important questions of how they adapted, physiologically and/or technologically, to the generally harsh glacial conditions of the middle latitude of Europe and to reduced energy returns typical of raw food. As a corollary, it also raises questions regarding their need for and use of fire during the warmer periods.

http://www.journals.uchicago.edu/doi/abs/10.1086/692628

RANDALL WHITE et al – Technologies for the Control of Heat and Light in the Vézère Valley Aurignacian

We can trace the beginnings of our knowledge of early Upper Paleolithic (Aurignacian) use of fire to the pioneering 1910–1911 excavations at Abri Blanchard undertaken by Louis Didon and Marcel Castanet. At Blanchard, the excavators recognized and described fire structures that correspond in many ways to features excavated more recently in Western and Central Europe. Here, we address the issue of heat and light management in the early Upper Paleolithic, demonstrating a pattern that builds on these early excavations but that is refined through our recent field operations. Topics to be discussed include (1) recently excavated fire structures that suggest complex fire management and use, (2) the seemingly massive use of bone as fuel in most early Aurignacian sites, and (3) the anchoring of skin structures for purposes of heat retention with fireplaces behind animal-skin walls. Furthermore, new data on activities around fireplaces make it possible to infer social and organizational aspects of fire structures within Aurignacian living spaces. The vast majority of early Aurignacian occupations, most of them now dated to between 33,000 and 32,000 BP (uncalibrated), occurred on a previously unoccupied bedrock platform into which the occupants dug their fire features.

http://www.journals.uchicago.edu/doi/abs/10.1086/692708

RICHARD WRANGHAM – Control of Fire in the Paleolithic: Evaluating the Cooking Hypothesis

According to current evidence, Homo sapiens was unable to survive on a diet of raw wild foods. Because cooked diets have large physiological and behavioral consequences, a critical question for understanding human evolution is when the adaptive obligation to use fire developed. Archaeological evidence of fire use is scarce before ca. 400 ka, which suggests to some that the commitment to fire must have arisen in the mid-Pleistocene or later. However, weak jaws and small teeth make all proposals for a raw diet of early Pleistocene Homo problematic. Furthermore, the mid-Pleistocene anatomical changes seem too small to explain the substantial effect expected from the development of cooking. Here I explore these and other problems. At the present time no solution is satisfactory, but this does not mean the problem should be ignored.

http://www.journals.uchicago.edu/doi/abs/10.1086/692113

RAN BARKAI et al – Fire for a Reason: Barbecue at Middle Pleistocene Qesem Cave, Israel

Qesem Cave is a Middle Pleistocene site in Israel occupied between 420 and 200 ka. Excavations have revealed a wealth of innovative behaviors most likely practiced by a new hominin lineage. These include early evidence for the habitual and continuous use of fire, the repeated use of a central hearth, systematic flint and bone recycling, early blade production technologies, social hunting strategies and meat-sharing practices, and more. Fire was used throughout the 200,000 years of human occupation of the cave primarily for meat roasting and cooking. Roasting and cooking, we argue, had an important role in providing the necessary calorific intake of the cave’s inhabitants. We see fire as an essential element of the new post-Acheulian human adaptation in the Levant. The ample recurring evidence for focused and repeated use of fire for dietary purposes suggests that fire production, control, use, and maintenance were habitually practiced by the cave’s inhabitants and that fire-induced calories became central for their survival. We present an integrative view regarding the use of fire at Qesem Cave and discuss the role of fire within the framework of the significant cultural and biological transformations that took shape in the post-Acheulian Levant during the Middle Pleistocene.

http://www.journals.uchicago.edu/doi/abs/10.1086/691211

AMANDA G. HENRY – Neanderthal Cooking and the Costs of Fire

While it is clear that Neanderthals used fire for cooking their foods in some times and places, the record of their use of fire is somewhat patchy. We should not assume that Neanderthals had the same relationship with fire that we do; as a technological/cultural behavior, fire may be better understood as a tool that was used only when the costs of manufacture and maintenance were outweighed by the benefits.

http://www.journals.uchicago.edu/doi/abs/10.1086/692095

JILL D. PRUETZ & NICOLE M. HERZOG – Savanna Chimpanzees at Fongoli, Senegal, Navigate a Fire Landscape

Savanna chimpanzees (Pan troglodytes verus) at Fongoli, Senegal, appear to be able to predict the “behavior” of wildfires of various intensities. Although most wildfires are avoided, even the most intense fires are met with relative calm and seemingly calculated movement by apes in this arid, hot, and open environment. In addition to reviewing instances of such behavior collected during the course of the Fongoli study, we also report chimpanzees’ use of burned landscapes during the dry season, when more than 75% of these apes’ home range may be burned annually. In burned areas, chimpanzees spent more time foraging and traveling than in unburned areas. Chimpanzees’ behavior in a fire context can help inform
Paleoanthropological hypotheses regarding early members of our own lineage and can provide insight into the ability of early hominins to conceptualize the behavior of fire and thus set the stage for our lineage’s use of fire.

MICHAEL CHAZAN – Toward a Long Prehistory of Fire
This article explores a conception of the origins of fire as a process of shifting human interactions with fire, a process that, in a sense, still continues today. This is a counterpoint to the dominant narrative that envisions a point of “discovery” or “invention” for fire. Following a discussion about what fire is and how it articulates with human society, I propose a potential scenario for the prehistory of fire, consisting of three major stages of development. From this perspective, obligate cooking developed gradually in the course of human evolution, with full obligate cooking emerging subsequent to modern humans rather than synchronous with the appearance of Homo erectus as envisioned by the cooking hypothesis.

DENNIS M. SANDGATHE – Identifying and Describing Pattern and Process in the Evolution of Hominin Use of Fire
Although research relating to Paleolithic fire use has a long history, it has seen a recent resurgence in the last decade. This has been fueled in part by improved analytical techniques, improved standards of data collection and reporting, and the discovery of new sites with important fire residues in Africa, the Middle East, and Europe. A major component of this new research has been to identify when “controlled use” and “habitual use” of fire developed among Pleistocene hominins. However, an important starting point of this discussion is defining what is meant by “controlled use” and “habitual use,” as these terms have come to be used in undefined, inconsistent ways in the literature. We also need to lay out clearly how these behaviors might be recognized in the archaeological record and come to some understanding of what the potential implications of the development of these technologies and their geographic and climatic contexts are for the course of hominin evolution.

Evolutionary Anthropology
PAPERS
YUKIMARU SUGIYAMA – Sex-biased dispersal of human ancestors
Some anthropologists and primatologists have argued that, judging by extant chimpanzees and humans, which are female-biased dispersers, the common ancestors of humans and chimpanzees were also female-biased dispersers. It has been thought that sex-biased dispersal patterns have been genetically transmitted for millions of years. However, this character has changed many times with changes in environment and life-form during human evolution and historical times. I examined life-form and social organization of nonhuman primates, among them gatherers (foragers), hunter-gatherers, agriculturalists, industrialists, and modern and extinct humans. I conclude that dispersal patterns changed in response to environmental conditions during primate and human evolution.

It has been twenty years since diagnosis and publication of the species Homo antecessor.1 Since then, new human fossils recovered from the TD6 level of the Gran Dolina site (Sierra de Atapuerca, northern Spain) have helped to refine its taxonomic and phylogenetic position. In this paper, we present a synthesis of the most characteristic features of this species, as well as our interpretation derived from the latest investigations. We focus on the phylogenetic interpretation of Homo antecessor, taking into account the most recent paleogenetic analyses and a reassessment of the European Middle Pleistocene hominin record. We try to show that, twenty years after its publication, H. antecessor provides a good opportunity to address the morphology of the last common ancestor of Neandertals and modern humans.

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