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Editorial

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Ancient DNA and language evolution: a special section

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About a year or so ago, prompted by what seemed (and still does) to be a flood of new methods and findings stemming from the extraction, analysis and interpretation of more and more ancient genomes, both from archaic (Neanderthals and Denisovans) and modern (but long dead) humans, we thought that it is becoming necessary to have a collection of papers looking into the implications for language origins and evolution. Thus, the idea of a special issue on ancient DNA emerged, we dully contacted groups and individual scientists working on these issues, and we soon had an impressive lineup of contributors and contributions.

However, due to the extremely dynamic nature of the field and the multiple constraints to which our contributors have to face, we decided to rather have a continuously running series of 'special sections' containing contributions touching upon these issues as they arrive, instead of waiting for all contributions to be assembled into a dedicated 'special issue'. The first four contributions follow, ranging from setting the wider background to focusing on specific genes, and touching not only on ancient DNA but also on genetic data from living humans and even on the archeological and paleoanthropological record. The papers originate from well-known groups and scientists and, despite their diversity, they contribute to setting the foundations for the proper, contextualized, and nuanced interpretation of the new findings that are bound to continue coming, as well as suggesting new methods, data sources and interpretative frameworks that should help our field advance.

We begin with Hayley Susan Mountford and Dianne Newbury, geneticists with long-term interests in language at Oxford Brookes University in the UK, whose '*The Genomic Landscape of Language Disorders: Insights into Evolution*' provides the necessary background for discussing the genetic foundations of language and speech and the interpretation of data from ancient genomes. Their conclusion that '[w]e are only just beginning to unravel the highly complex developmental processes that underlie speech in modern humans, and should be extremely cautious in extrapolating any findings into hominins', far from being pessimistic, must instead form the backbone for any attempts at linking genetics (not only ancient) to theories of language origins and evolution. In '*What aDNA can (and cannot) tell us about the emergence of language and speech*', Rob DeSalle and Ian Tattersall, a molecular systematics/comparative genomics expert and a palaeoanthropologist with a long history of work on language origins with the American Museum of Natural History in New York, join forces to discuss the questions that ancient DNA may (and may not) answer when it comes to language origins and evolution, to militate for properly placing such findings against the background provided by paleoanthropology and archeology, and to propose an actual method for identifying genes that may be involved in the evolution of language and speech. '*SRGAP2 and the gradual evolution of the modern human language faculty*', written by a team of linguists and cognitive sciences from the University of Barcelona with important contributions to language evolution, focuses on a specific gene, *SRGAP2*, and argue, based on multiple lines of evidence including its evolutionary history and the molecular pathways it is involved in, that it may have played a role in the evolution of vocal

learning in archaic humans, supporting the idea that language is a mosaic whose components are old and have their own evolutionary stories. Finally, Lou Albessard-Ball and Antoine Balzeau, paleoanthropologists at the Musée de l'Homme in Paris, discuss the paleoanthropological evidence that might be relevant for the origins of speech and language, ranging from the hyoid bone to endocasts and conclude, that '[f]or further insights into the origins of language itself, these advances in the understanding of fossil morphologies must continuously be reviewed against the growing archaeological evidence for past human behaviours, ancient DNA, and linguistic theories', highlighting again the need for cross-disciplinary integration in the interpretation of the available evidence.

We hope that this collection highlights the important questions, methods and caveats, opens the path for new contributions to understanding the origins and evolution of speech and language, and will encourage more contributions in this vein. Importantly, all articles urge us to consider the whole of the evidence when making inferences about the past, underscoring the need for more cross-disciplinary dialogue and collaboration, even if this may be extremely difficult at times.