Although we will never know for sure how and when human language originated, the literature is full with proposals and models, see the overview in Fitch (2010). In my talk, I will review some of them and focus on the role of phonology for this discussion. An important issue that is not often addressed is Martinet's (1961) notion of 'double articulation of language' that, in my view, illuminates some crucial aspects of evolution of language: it is the idea that we can articulate meaningless chunks of hierarchically organized phonological constituents and associate them with meanings of different kinds. The ultimate goal is to understand why are we the only talking animals, what aspects of our linguistic tools render us prone to develop, learn and use language? In doing so, past proposals of gestural and musical origins of language, as proposed by previous researchers, will be addressed.