



Publication of the paper **“Bone aerophones from Eynan-Mallaha (Israel) indicate imitation of raptor calls by the last hunter-gatherers in the Levant”** in the international journal **Nature Scientific Reports** Thursday June 8, 2023 at 12:00 Jerusalem (10 am London time) (**press publication embargo until that date**). Possible publication in EurekaAlert and AlphaGalileo only 72 hours before this date.

Press Abstract :

An international team of archaeologists, archaeozoologists and ethnomusicologists led by Laurent Davin (Hebrew University of Jerusalem, Israel and CNRS) and José-Miguel Tejero (University of Vienna, Austria and University of Barcelona, Spain) has discovered rare prehistoric sound instruments in the Near East. These elements come from the site of Eynan-Mallaha (Natufian culture c. 13,000-9,700 B.C.), in the North of Israel, excavated since 1955 by French-Israeli teams. This village, consisting of small houses built of dry stone on the shores of Lake Houleh, was home to the last hunter-gatherers of the Near East more than 12,000 years ago. The sound instruments discovered on the floors of the houses and in their surroundings take the form of seven aerophones made of perforated small waterfowl bones. Experimental and acoustic analyses have shown that these prehistoric instruments were made to imitate the calls of birds of prey (European Sparrowhawk and Kestrel) and that their objectives could be at the crossroads of communication, attraction of prey and music making. There may have been a special relationship between the inhabitants of Eynan-Mallaha and these birds of prey, as the latter were hunted specifically for the use of their talons in ornamentation. This discovery provides important new data concerning the antiquity and development of the variety of prehistoric sound instruments in general and particularly at the dawn of plant and animal domestication in the Levant that would, later, influence Europe.

This discovery is very important for several reasons :

- _ In the world, very few prehistoric sound instruments have come to us and the majority of the rare artifacts known today come from Europe.
- _ No sound instrument had yet been clearly identified in the entire prehistory of the Near East.
- _ No instrument allowing the imitation of bird calls had been identified for such ancient periods.
- _ One of the seven aerophones is still complete, which is extremely rare.
- _ The experimental replicas allow us to listen to the sounds made by the last hunter-gatherers of the Near East over 12,000 years ago.

Open perspectives :

Future research on these instruments could concern their functions (Ethnomusicology) as well as the perception and effects of the sounds produced on humans and animals (Psychoacoustics). Our discovery will undoubtedly lead to other discoveries of the same type thanks to the re-examination of the collections of bird bones uncovered on other sites in the Near East and will thus allow to give new impulse to the research on Archaeoacoustics.

Paper Abstract :

Direct evidence for Palaeolithic sound-making instruments is relatively rare, with only a few examples recorded from Upper Palaeolithic contexts, particularly in European cultures. However, theoretical considerations suggest that such artefacts have existed elsewhere in the world. Nevertheless, evidence for sound production is tenuous in the prehistoric archaeological record of the Levant, the study of music and its evolution being sparsely explored. Here we report new evidence for Palaeolithic sound-making instruments from the Levant with the discovery of seven aerophones made of perforated bird bones in the Final Natufian site of Eynan-Mallaha, Northern Israel. Through technological, use-wear, taphonomic, experimental and acoustical analyses, we demonstrate that these objects were intentionally manufactured more than 12,000 years ago to produce a range of sounds similar to raptor calls and whose purposes could be at the crossroads of communication, attracting hunting prey and music-making. Although similar aerophones are documented in later archaeological cultures, such artificial bird sounds were yet to be reported from Palaeolithic context. Therefore, the discovery from Eynan-Mallaha contributes new evidence for a distinctive sound-making instrument in the Palaeolithic. Through a combined multidisciplinary approach, our study provides important new data regarding the antiquity and development of the variety of sound-making instruments in the Palaeolithic at large and particularly at the dawn of the Neolithic in the Levant.

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