

Workshop Report
The Pathways of the Neolithic in Southern Levant
A Marie Curie Actions Workshop Organised by Jonathan Santana
Durham University, 30th October 2019

Hans Georg K. Gebel

This seminal workshop united fresh and critical PhD research with novel field and desk research on Southern Levant's Neolithic pathways; it was organised by Jonathan Alberto Santana Cabrera, the Marie Curie research fellow hosted by the Department of Archaeology, Durham University, and took place in the Lindisfarne Centre of St Aidan's College at Durham University. At the same time the workshop was completing the efforts of J. Santana's Marie Curie-Project ISONEO at Durham: *Isotopic evidence for diet and mobility during the Neolithic transition to farming in the Near East*.

In his invitation letter, J. Santana states that "traditional hypotheses explaining the advent of farming stress the enhanced security and predictability of food procurement, due to the nutritional complementarity and productivity of combining crops and livestock." He highlighted also that "the invention of agriculture and stock-keeping, and their substitution for hunting and gathering, are widely acknowledged to have been slow and regionally and chronologically uneven. As this was not a conscious process — no models of farming were available — a transitional stage is assumed, with partial dependence on domesticates, and variability between site economies." Referring also to the selection of speakers, J. Santana stated that the pathways' evidence has become subject to "varying degrees of complementarity and compatibility", asking that contributions should approach questions like trigger factors in plant domestication; innovations in early animal domestication; social structures necessary to sustain densely populated permanent farming villages; and the significance of various sorts of migration in establishing and sustaining Neolithic village life.

The workshop again exposed a basic feature of Neolithic research: Inconsistencies in cross-regional and cross-period comparison are taken as indications of Neolithic diversity and temporality; but then — instead of working with the evidence of polycentricity and impermanence and take findings as evidence of its own right — arguments are formed to make things matching again, leading to more confusion. However, it is most promising to see how research advances by the critical attitudes and questions of the young and younger colleagues (Fig. 1), challenging in this workshop conventional understanding of the Neolithic from their fields of research (A. Arranz, E. Fernández, J. Santana, E. Bocceage, but also C. Makarewicz and F. Bocquentin).

Amaia Arranz questions the cereal centers-/founder crops- concepts, and sequential domestication concepts of wild plant gathering (late Epipalaeolithic) to pre-domestication cultivation (PPNA) to plant

domestication (MPPNB) to agriculture, asking: How single-evidence plant remains can be interpreted as founder crops while abundantly attested species are interpreted as unwanted?

Eva Fernández questioned the quality of many aDNA samples. Among other, she stated that the start of the Neolithic seems to be characterised by divided genomic structures, with a clear difference between the southern Levant and Anatolia/ South Zagros.

Jonathan Santana (Fig. 2) provided data from his isotope research on 'Ain Mallaha, Tell Qarassa, Kharaysin, and 'Ain Ghazal, stating that there was a basic difference between limestone and volcanic regions. Significant evidence for population aggregation are attested for the Natufian while human migration appears to be insignificant for the PPNB-C (non-local individuals below 10%).

Ferran Borell (Fig. 3) doubted that the MPPNB hunters of Nahal Efe represent "real" foragers and compared its architecture with Shakārat al-Musay'id, 'Ain Abu Nukhaila, Nahal Reuel and Issaron. A small pit containing the bones of birds-of-prey was an intriguing finding at the site.

Cheryl Makarewicz remembered that „a goat is a goat!", stressing that it is highly problematic to distinguish between bezoar and ibex without having horncores. For the southern Jordanian Highlands, in addition, ibex and bezoar were sympatric. On the Near Eastern level, multiple and divergent wild goat sources contributed to domestic species and managed early herds; the bezoar rapidly dispersed from north to south. And: Evidence has become safe for the translocation of domestic Ovis-Capra into the eastern steppes, starting by the LPPNB.

Emmy Bocaage presented results from Shubayqa on the basis of 10 individuals, attesting a high child mortality (80% of the up to three years) with burials inside the residential space. While red and yellow pigmentation of post-cranial bones and skulls appears rare in the Natufian, they are attested for an adult of Shubayqa.

Fanny Bocquentin spoke about diet transition attested with the shift from foraging to producing lifeways, and how this is reflected in dental health. She stated that caries ratios (and oral pathology) remain stable from the Natufian to the PPN (under 10%), and that the carbohydrate diet likely relates to higher reliance on cereals. She reclaimed the hypothesis that the Neolithic „fertility explosion" is the result of high calorie food.

Juan J. Ibáñez presented most recent and comparative results of the architectures from Central Jordan's Kharaysin and Sueida area's Tell Qarassa North, discussing also stratigraphical relationships between

curvilinear and rectangular structures throughout the PPNA - MPPNB.

Hans Georg K. Gebel concluded the one-day lecture series by revisiting the LPPNB Transjordanian Mega-Site Phenomenon. He claimed that the new evidence of contemporary kite-economies in the eastern steppes (works of Wael Abu Azizeh and Muhammed Tawaneh) as well as the incipient pastoralism entering the steppes from the mega-sites may have contributed to the collapse of the crowded mega-villages within few generations: A developing and possibly autonomous pastoral social paradigm of the steppes became an attractive and less „stressful“ alternative lifeway, most likely promoted by a fusion with remaining late hunter-gatherers of the steppes.

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Programme of the *The Pathways of the Neolithic in Southern Levant* Workshop held at Durham University, 30th, October 2019

Old tales, new perspectives: Revisiting the origins of agriculture in SWA. *Amaia Arranz, Copenhagen University*

Ancient DNA of Near Eastern Neolithic populations: the knowns and the unknowns. *Eva Fernández, Durham University*

Neolithization processes in the Levant: Nahal Efe and the case of the Negev and Sinai deserts (10th-8th millennia cal. BC). *Ferran Borrell, CSIC*

Nascent animal management, domestication and translocation in the southern Levant. *Cheryl Makarewicz, Kiel University*

Reconstructing mobility of Neolithic people in southern Levant: evidence from strontium, oxygen and carbon isotope analyses. *Jonathan Santana, Durham University*

Natufian human remains from Shubayqa 1 within the context of mortuary practices, health and biological diversity in the late Epipalaeolithic Near East. *Emmy Bocaege, University of Kent*

Subsistence and foodways transition during Neolithization process: glimpses from a contextualized dental perspective. *Fanny Bocquentin, CNRS*

Early Neolithic architecture in Tell Qarassa North and Kharaysin: understanding innovation and regional interaction processes. *Juan J. Ibáñez, CSIC*

The Jordanian Highlands' LPPNB Mega-Site phenomenon: Promoters of rise and collapse revisited. *Hans Georg K. Gebel, Free University of Berlin and ex oriente, Berlin*



Fig. 1 Participants of the Workshop organised by Jonathan A. Santana Cabrera at the Department of Archaeology, Durham University, October 30th, 2019. (Photo: Gebel)



Fig. 2 Jonathan Santana at his lecture on strontium, oxygen and carbon isotope evidence for the mobility of southern Levant's Neolithic people. (Photo: Gebel)



Fig. 3 Ferran Borell at his lecture on Nahal Efe. (Photo: Gebel)