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In Memoriam

"Life, Life": Ofer Bar-Yosef (1937–2020)

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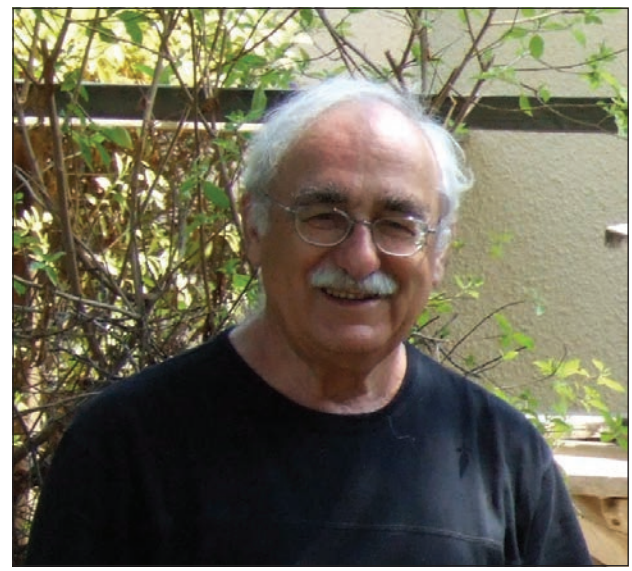
Ofer Bar-Yosef, t*he George G. and Janet G.B. MacCurdy Professor of Prehistoric Archaeology, Emeritus in the Anthropology Department at Harvard University,* passed away on March 14th, 2020 at the age of 82. Since that day we are missing his famous "life, life", always uttered with a big smile. OBY (the acronym on his favorite backpack) received his academic training at the Hebrew University of Jerusalem, starting in 1960 and completing his Ph.D. studies in 1970 (under the supervision of Moshe Stekelis). Between 1970–1988 he was a faculty member and conducted his research at the Hebrew University of Jerusalem. In 1989 he moved to the United States to become a senior research professor at the Anthropology Department, Peabody Museum, Harvard University. He felt at home in many places, yet most of the summers he spent in Israel conducting excavation projects.

OBY, who was born August 29, 1937 in Jerusalem, always wanted to become an archaeologist and a prehistorian. When he was 13 years old he wrote a paper on the Natufian people, a subject that fascinated him throughout his entire research career (e.g. Bar-Yosef 1983, 1998c, 2002a; Bar-Yosef and Valla 1991, 2013). OBY was a member of the Israel Prehistoric Society since the first year of his university studies, and was an active member for 60 years, serving as the Society's chair between 1978–1981.

OBY was a leading authority on Paleolithic archaeology for many years, fostering multi-national and multi-disciplinary research projects worldwide and conducting excavations in many places around the world besides Israel, e.g. in Turkey (Otte et al. 1995), Georgia



(Bar-Yosef et al. 2011), and more recently in China (Bar-Yosef and Wang 2012; Bar-Yosef 2015).

I was privileged to cooperate with OBY in his last excavation (at Nahal Ein Gev II, Israel), in the same region where he excavated the Ein Gev sites while a Ph.D. student under the supervision of Prof. Moshe Stekelis (Stekelis and Bar-Yosef 1965; Bar-Yosef 1970). He always said that for him, returning to the central Jordan Valley is something of a closure. The list of OBY's excavation projects in Israel is long and I shall detail here only several of those (Fig. 1): 'Ubeidiya (1960–1966 – under the direction of M. Stekelis; 1967–1974, co-directed with Eitan Tchernov), Hayonim Cave [1965–1979, co-directed with Tchernov and Baruch Arensburg; 1992–2000 co-directed with Bernard Vandermeersch), Kebara Cave

(1982–1990, co-directed with Vandermeersch), the Sinai explorations (1971–1973 eastern Sinai; 1971–1979 northern Sinai; 1976–1979 southern Sinai), surveys and excavations in the lower Jordan Valley (1980–1984, co-directed with A. Gopher and N. Goring-Morris). These projects touched upon the major questions in prehistoric research at large, such as the Out-of-Africa migration, the spread of modern humans, Origins of Agriculture, Neolithization, and more.

The impact of OBY's work was global. Much of how we conceptualize and carry out prehistoric research in the 21st century is due to his scholarly legacy. Starting back in 1959, he edited more than 26 edited and published more than 430 papers (see an updated list in the Israel prehistoric Society website, www.prehistory.org.il). He was widely acknowledged by his peers and colleagues and his many honors include membership in the United States National Academy of Sciences, The Georgian Academy of Science, Corresponding Fellow of the British Academy, First Laureate of the Lloyd Cotsen Prize for Lifetime Achievement in World Archaeology, Honorary Doctorate from the Ben-Gurion University of the Negev and lastly, a Honorary Doctorate award from the University of Bordeaux.

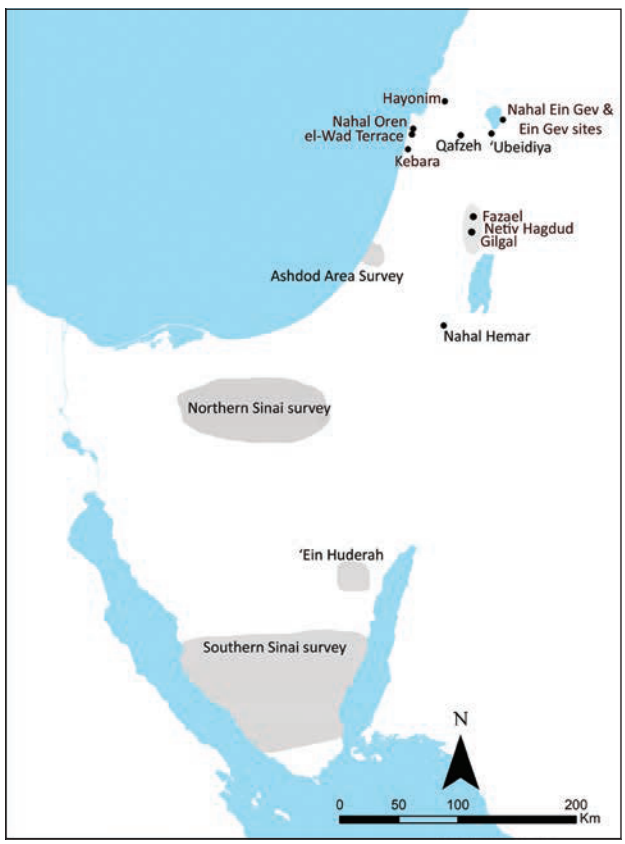


Figure 1: Sites OBY excavated and areas he surveyed.

OBY was one of the most inspiring prehistorians of our time who immensely influenced more than three generations of researchers, a beacon of new directions in prehistoric research. OBY was also a person of bold ideas, a prolific thinker, an adored teacher and lecturer, who knew how to incorporate data, far and wide, and to present it laced with original explanations and new interpretations, always amazing his audience with his extraordinary memory and exceptional sweeping knowledge. Indeed, he always saw the "big picture", as evident in the long list of review articles (e.g. Bar-Yosef 1980, 2000b, 2002b, 2017a). OBY was open-minded, critical and meticulous in his observations. His passion and enthusiasm for prehistoric research was contagious. It imbued each of his talks and discussions, even those that had nothing to do with archaeology. One could find himself after such a meeting thinking of new and innovative ways of seeing the prehistoric past dynamics. "Think big" OBY constantly demanded. At the same time, he taught his students to be meticulous in field research and pay attention to the minute details pertaining to the obtained data. He always encouraged us to find new ways and means for retrieving, sampling, handling and studying the archaeological remains.

OBY was a true believer in multidisciplinary cooperation and collaborating with the hard-core sciences. He was the first archaeologist in Israel to install a scientific laboratory in the field (with Steve Weiner at Kebara Cave), which eventually became a standard procedure in field research. OBY challenged archaeologists to collaborate intensively with specialists of various disciplines during the field season and later, in the laboratory. His own projects were exemplary in illustrating how such a collaboration opened new avenues of research and provided new answers to old questions (Bar-Yosef 2000a). Early in his career he started cooperating with a plethora of experts from many fields of research, including archaeology, hard-core sciences, faunal studies, geology, anthropology, paleontology, radiometric chronology, climatology, demography, and more (e.g. Weiner et al. 1993, 1995; Goldberg et al. 2001; Rink et al. 2004). He thought that the archaeologist should

first define and pose the research questions and then involve the relevant specialists in the search for answer. Still, he stated that science is not magic and "scientists, like archaeologists, can be wrong". He believed that long collaborations, learning how each side thinks, will produce the best results (Bar-Yosef 2001:458).

OBY became one of the most influential archaeologists of his generation also because he was occupied with the most important and burning questions concerning world prehistory in general and Levantine prehistory in particular. I will cherry-pick but a few of those from his long list of contributions to our understanding of the prehistoric past, in order to illustrate how far he went on from his first independent research (PhD thesis) of the Levantine Epipaleolithic. Briefly, one should note that even that early in his career OBY had come up with a new and detailed framework for the local Epipaleolithic sequence based on techno-typological criteria of the bladelet industries (e.g., Bar-Yosef 1975) which is mostly valid to this day.

Lithic analysis is the "bread and butter" of a prehistoric archaeologist, the basis for identifying and describing a prehistoric occurrence. In the last decades, technological and typological lithic analyses were transformed, with OBY being at first one of the proponents of these transformations, embracing the typo-technological approach of F. Bordes (e.g., 1961), at the same time arguing (with P. Van Peer) that we should refrain from using unnecessarily elaborate, complex typologies and *chaînes opératoire* studies. Such approach "impedes informed behavioral interpretations by forcing a rigid framework of "technical" definitions on the prehistoric lithic technologies." (Bar-Yosef and Van Peer 2009:103). OBY's lithic expertise skills enabled him to be the first to recognize and identify a significant link in the chain of Epipaleolithic cultures – the **Geometric Kebaran (Middle Epipaleolithic)** archaeological entity unnoticed by preceding research (Bar-Yosef 1970).

The **way culture changes** and the mode of **cultural transitions** were among the main topics that interested OBY. For his 70th birthday, his former graduate students at Harvard, Professors John Shea and Dan Lieberman, edited a book with papers written by OBY students dealing with "Transitions in Prehistory" (Shea and Lieberman 2009), reflecting on OBY's teachings on this topic. His way of deciphering a particular transition was by comparing it to other transitional phenomena by means of analogy. This was his preferred approach because it enabled him, and us, to put aside problematic issues such as the biological diversity of Middle Paleolithic human populations, and concentrate on what was essential for him: detailed explorations of cultural and technological innovations (e.g. Bar-Yosef 1998a, 2000b, 2002b,).

Hominin dispersal into Eurasia in the early Pleistocene was a major topic that occupied OBY's time. He believed that the dispersal was sporadic and showed no evidence of linear continuity. He claimed (with M. Belmaker) that the evidence indicated three waves of early migrations (Bar-Yosef and Belmaker 2011). The earliest sortie involved bearers of core-chopper industries sometime around 1.7–1.6 Ma. Early Acheulean producers followed probably around 1.4 Ma. The third wave occurred sometime around 0.8 Ma, and is represented by Acheulean groups who manufactured numerous flake cleavers. As for the driving forces behind migrations, his explanation includes the 'push' of environmental changes, the relative 'demographic pressure', and the opening of new niches. Bar-Yosef and Belfer-Cohen (2001:26) suggest an original explanation for the success of these migrations: "…the success of the hominid occupation of the Eurasian habitats was not primarily facilitated by the availability of food, or the human flexibility in food procuring techniques, but by the absence of the zoonotic diseases that plagued and constrained hominins in their African 'cradle of evolution'." Each of the dispersals had its own, particular history, and that this phenomenon is much more complex than assumed (Bar-Yosef and Belfer-Cohen 2013).

OBY revolutionized our understanding of the **chronology of the Levantine Middle Paleolithic,** instigating a complete turnover in the story of modern human origin. He had come to realize that the accepted Middle Paleolithic chronology was too short and the prevailing sequence of sites and industries was not well-founded. Thus he had joined Bernard Vandermeersch in the excavation project of Qafzeh cave, and following the first conference on the "Préhistoire du Levant" (Cauvin and Sanlaville 1981) initiated an international, multidisciplinary mega-project to re-excavate and date

additional Levantine key cave sites (the Kebara and Hayonim caves), with aimed towards establishing a sounder chronology for the Levantine Mousterian (Bar-Yosef 1998a). This project was of crucial importance because the excavations in Israel have yielded the best collection of human skeletal remains relevant for the two basic models explaining the emergence of modern humans. The new chronology was groundbreaking: "Tabun C-type" (Copeland 1975) industry that is associated with modern human remains is older (OIS 5e through OIS 5a, ca.130–75 Ka. BP.) than layers bearing the remains of, and associated with, local 'Neanderthals'. Moreover, the Acheulo-Yabrudian entity which precedes stratigraphically the Middle Paleolithic industries (at Tabun and Hayonim caves, for example) is much earlier in the Middle Pleistocene, before ca. 250 Ka. In short, the full sequence of late Lower Paleolithic – Middle Paleolithic is much longer than previously thought and the so-called 'Neanderthals' appear locally much later, succeeding the anatomically modern humans (Bar-Yosef and Meigen 2001). This important project revolutionized the chronological sequence and contributed to the renewed discussion of the cultural-archaeological aspects concerning the Sapiens-Neanderthal dichotomy and the emergence of modern humans. The most important conclusion was that the Middle to the Upper Paleolithic transition, considered to take place at about 45Ka years ago, does not signify the first appearance of modern humans in western Asia since their early remains are now dated to more than 100 Ka ago (and see above) as predicted by OBY based on his critical review of the archaeological data (Bar-Yosef 1992). OBY believed that the successful expansion of Neanderthals into western Asia, all the way from Europe reaching the Altai Mountains, indicates their adroit adaptations to variable environments. The challenge is still there to understand how their demise is connected with the expansion of modern humans, yet again, Out-of-Africa (Bar-Yosef 2013).

When discussing the lithic record associated with the Middle to Upper Paleolithic transition, OBY rejected the association between technology and human types, i.e., associating modern humans with Upper Paleolithic **blade technologies**. He demonstrated that the basic techniques of blade production emerged thousands of years before the Upper Paleolithic. Yet, he was aware that blades became a dominant component in the archaeological lithic record of western Eurasia and Africa only after 40 Ka years ago, and suggested that it was probably due to the increased reliance on complex composite tools during the Upper Paleolithic (Bar-Yosef and Kuhn 1999; Bar-Yosef 2014).

OBY's passion for earth sciences since his undergraduate years was the main reason for his fascination with environmental changes, more specifically **climate change**, in relation to human activities (e.g., Bar-Yosef and Belfer-Cohen 2002). A most interesting and original idea concerning environmental changes was his explanation of the Pre-Pottery Neolithic A **walls of Jericho.** He suggested that they were built to protect the settlement from the vagaries of nature, i.e., local floods (Bar-Yosef 1986).

OBY originally believed that the environment was a determining factor in human existence; he toned it down somewhat in his later publications, presenting some multi-causal explanations for cultural changes. Recently, in summing up the climatic events that accompanied the shift to agriculture, he asked archaeologists to pay more attention to the degree of past societies resilience by recognizing their failure or success in adopting new lifeways (Bar-Yosef 2017a). Since early phases in his career he initiated many discussions on the transition to agriculture where the prime mover was climatic instability (e.g. Bar-Yosef 2011) and discussed intensively the archeological evidence for the **origins of agriculture** in the Near East, where the best-recorded sequence of the transition from foraging to farming is available (Bar-Yosef 1995). He stressed that the Natufian culture (15,000–11,500 cal BP) is a crucial starting point of this major evolutionary change (Bar-Yosef 1998c) but he picked a side in the long debate on how long this change took (Bar-Yosef 1998c). "Once cultivation and sedentism were established as a permanent subsistence strategy, it became the tipping point in human evolution." (Bar-Yosef 2017b: 324). Although retractions and failures occurred, "Those that succeeded determined the current history of our planet" (*ibid.*). His believed that in a land "full of people" the winning option was to stay put, defend and exploit local resources, and intensify returns by cultivation of familiar plants.

These topics are, as said above, are only a part of the issues OBY dealt with. We should note his significant contributions to understanding global trends and

prehistoric dynamics beyond the Levant, in Georgia, China, Turkey, Greece and other places, which are beyond the present scope.

A PERSONAL NOTE

I had the privilege to be OBY's scientific 'granddaughter', collaborator and friend. He enticed me to carry out my first project of excavation at Hilazon Tachtit cave and I am grateful to him for helping me in every step of the way. He died when the COVID-19 outbreak just began. I wish I could discuss the pandemic with him, as he surely would have had new insights on this event, interwoven with new insights on the past. He had this habit, for the sake of argument, to take the opposite view and follow its logic to the end convincing one to go over to the other side and even promote it…. I miss our long discussions.

OBY is one of the most recognized and influential prehistorians of our time. Future generations of prehistorians will, undoubtedly, ground and hone their knowledge on his long list of publications. I am sure that his students and peers will follow his legacy and continue to promote prehistoric research along the lines he had drawn – understanding human past on a global scale.

He was the best!

Figure 2: OBY sitting on a 12,000 year old bench at Nahal Ein Gev II. Wearing a yellow shirt from the excavation at Kebara and a hat from Hayonim cave (2010).

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