Snakes of Stone: A Unique Stone Artefact From the LPPNB Site of Naḥal Roded 110

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Introduction

Much has been written about the Levantine Pre-Pottery Neolithic as a period of innovation and change, particularly regarding the transition to food production and sedentism. But this period in general, and more specifically, the Middle Pre-Pottery Neolithic B (MPPNB; ~10150-9725 calBP), also witnessed a dramatic increase in symbolic imagery, both in diversity and number. Notably, Southern Levantine MPPNB sites have yielded a rich symbolic repertoire comprising stone mobiliary items such as vessels, plaques and grooved stones, also characteristic of the preceding Natufian and Pre-Pottery Neolithic A (*e.g.* Belfer-Cohen 1991; Noy 1991; Hershman and Belfer-Cohen 2010; Shaham and Belfer-Cohen 2013; Vered 2013; Orrelle 2014; Major 2018), but, in addition, anthropomorphic and zoomorphic figurines, human statuary, plastered human skulls, stone masks and decorative installations (*e.g.* Bar-Yosef and Alon 1988; Garfinkel 1995; Yizraeli-Noy 1999; Kuijt and Goring-Morris 2002; Orrelle 2014; Rollefson 2008; Schmandt-Besserat 2013; Hershman 2014; Kuijt 2017).

In this paper we present a unique carved and decorated stone object found at the site of Naḥal Roded 110 (NR110), located c.6km northwest of the town of Eilat, Israel (Fig. 1), and contextually dated to the Late Pre-Pottery Neolithic B (LPPNB; ~9400-8900 calBP; Birkenfeld *et al.* 2019, in press). The object is a broken 'donut-shaped' piece of limestone, carefully worked and smoothed to form an oval, with an elongated perforation at its center (Fig. 2). The preserved part was found in two fragments which were refitted and together weigh 3.9kg. The stone is 21cm wide and 18cm in preserved length, while the perforation is 3.0-3.5cm wide and 11cm in preserved length. On both sides it is incised with meanders.

NR110 is located in a small embayment just below the summit of Mt. Roded, c.180m above the wadis of Naḥal Roded and Naḥal Netafim. It is ~200m^2 in area, comprising a suspected stone structure and a large ashy deposition (Fig. 3). Four radiocarbon dates on charcoal from this deposit yielded ages of 9300-9100 calBP. Abundant remains of several migrating raptor species were recovered at the site, which is interpreted as a hunting locale specialized in killing birds of prey as they migrated over the Eilat mountains (Birkenfeld *et al.* 2019, in press). Given the importance of raptors in Near Eastern Neolithic symbology (*e.g.* Goring-Morris and Belfer-Cohen 2002; Hodder and Meskell 2010; Marom, Garfinkel and Bar-Oz 2018 and references therein), it is likely that the hunt was connected to cultic activities.

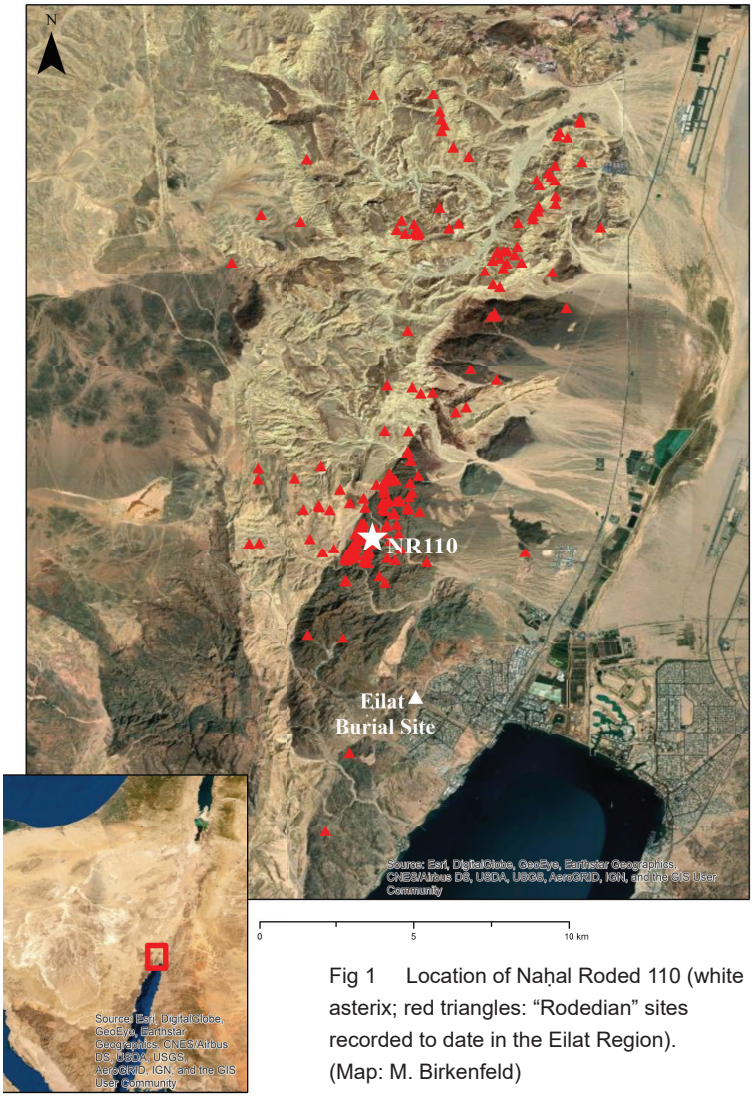

Fig 1 Location of Naḥal Roded 110 (white asterix; red triangles: "Rodedian" sites recorded to date in the Eilat Region). (Map: M. Birkenfeld)

The modified stone was found during the initial survey of NR110 (Avner *et al.* 2014) together with abundant flint artefacts and a small assemblage of limestone and sandstone objects. A further 102 small, mountain-top sites were recorded during the survey, all of which contained a similar repertoire of remains; low stone installations, standing stones, stone bowls amongst others (Fig 4; Avner 2018; Avner *et al.* 2014, 2019). It is of note that while most of these sites are located on igneous mountains, almost all the hundreds of modified stone objects, including the perforated stone addressed here, were made of limestone (fewer of sandstone) and

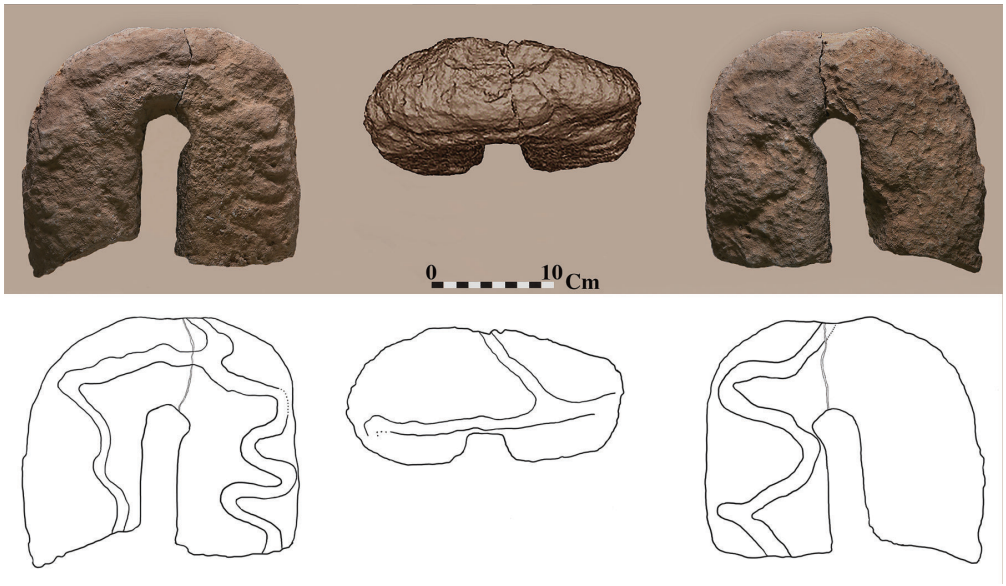

Fig 2a Vulva-shaped stone (Photo: C. Amit) with drawing of the meander. (Drawing: U. Avner)
Fig 2b 3D optical scan of vulva-shaped stone showing the meander engraving on both sides; scan-based reconstructed sections of the stone are shown by outlines with angled lines. (Scan: A. Levanon).

Fig. 3 Drone view of Naḥal Roded 110 during excavation. The stone structure is on the left, ashy deposition on the right. The location of the vulva-shaped stone discussed here is marked on the bottom left by an X. (Photo: U. Avner)

so brought up to the sites from some distance. Since the greatest concentration of these types of sites is around Naḥal Roded, they were termed 'Rodedian'. The lack of pottery and the presence, at some sites, of indicative lithic artefacts (mainly bidirectional blades), have led to the suggestion that the sites should provisionally be attributed to the Pre-Pottery Neolithic (Avner *et al.* 2014, 2019), although NR110 is currently the only site dated by radiocarbon.

The stone was found on the site's surface, next to the suspected structure (Fig. 3). Thirty such modified and perforated stones have been recorded to date from other 'Rodedian' sites in the region; eight stones are complete, bearing elongated perforations (Fig. 4), others are fragments (Avner *et al.* 2019: 21, Fig.15). The NR110 object is unique in its incised decoration. Using an optical scanner, a 3D digital model of the object was created (Fig. 2b) which enabled a clearer view of the engraved meanders. Following examination of the model, we suggest that the incised meanders represent snakes, or a single snake, encircling the stone on both sides, since the meanders appear to be joined.

In the following sections – while emphasizing examples from the Near East – we discuss the symbology of the shape of the stone, the meander motif and their interconnectedness within the context of the site.

The Stone's Shape

The shape of this limestone artefact, an oval transected by an elongated perforation, has generally been regarded as representing female genitalia – the vulva

Fig. 4 Stone objects from "Rodedian" sites around Nahal Roded: 1. trio of regular standing stones (Site 63); 2. perforated fallen standing stones (Site 162); 3. anthropomorphic stone image with a hammered neck (Site 360); 4. small stone bowl and fragments of a large bowl (Site 90); 5. vulva shaped stone (Site 109). (Photo: U. Avner)

(*e.g.* Stekelis 1972: Pl. 56-58; Gimbutas 1991: 223; Marshack 1991: 297; Avner 2002: 69, 2019: 29). It relates to other types of stone objects and architectural features from Near Eastern prehistoric sites, which have also been interpreted as 'vulva' images.

The first group comprises pebbles or groundstone artefacts termed 'grooved stones'. They first appear in the Natufian (Belfer-Cohen 1991; Noy 1991; Bar-Yosef 1997) and continue into later periods. They are of different sizes, but all are oval-shaped and transected by a deep elongated groove. They have been described by several researchers as shaft-straighteners or sharpeners/whetstones (*e.g.* Cosner 1951: 147; Noy 1991; Wright 1992: 73). Gopher and Orrelle (1996) suggested that these items are both tools and vulva images. This meaning has been preserved in English etymology (Orrelle 2014: 82-83). The definition of whetstone in the Collins dictionary is "Whet (hwet, wet): to sharpen by rubbing against a whetstone – to stimulate, arouse, to whet one's appetite". A number of synonyms (slang) for female genitals reflect the connection with arrows or sharpening such as 'quiver', 'sharp-and blunt', 'grindstone' and 'whettingcorn(e)' (Ash and Highton 1987; Gopher and Orrelle 1996: Note 2). Notably, in the Levantine Early Pottery Neolithic (PN, Yarmukian Culture; ~8500-7900 calBP), vulvae are schematically depicted as slits on abstract pebble figurines (Stekelis 1972; Garfinkel 1992; Yizraeli-Noy 1999). A plaster female figurine from the PPNB deposits at 'Ain Ghazal has an oval-shaped object with a central incision in the anatomical location of the vulva (Schmandt-Besserat 2013: 320, Pl. 7.3.1b).

Fig.5 Cowrie shell from Naḥal Roded 110, both sides. (Photo: U. Avner)

A second relevant object type found in Levantine sites from the Natufian period onwards, is the cowrie shell (Bar-Yosef 1987). Eliade (1991:125) and others (*e.g.* Murray 1939; Singer 1940; Biggs 1963; Kovacs 2008: 4, 14, 23) have suggested that the lengthwise opening of the shell resembles a vulva. One such shell was recovered from NR110 (Fig. 5).

Orrelle (2014) tracked changing eye form in Levantine Neolithic anthropomorphic images and found that they shifted from 'female-type' eyes, *i.e.* vulva-shaped bisected ovals, in the PPNB to unbisected round 'male-type' eyes, by the Late Pottery Neolithic / Early Chalcolithic (Wadi Rabah Culture; ~7600-6800 calBP; Gopher and Orrelle 1996: 257, Figs. 8.1-2; Orrelle 2014: 50, 74-75). Interestingly, cowrie shells were placed in the eye sockets of plastered PPNB skulls at Jericho (Kenyon and Holland 1981: Pl. 57) and, for example, a grave offering of a perforated cowrie was recovered from a female burial at PPNB Yiftahel (Khalaily *et al.* 2008). The use of cowrie shells

Fig. 6 "Vulva-shaped" tombs (I left and V right) in the Eilat cemetery (6th-5th millennia BC). (Photo: U. Avner)

Fig 7 Har Assa (Eilat Mountains):Typical pair of low stone installations - an elongated cell pointing to a circle (scales: 0.5m). (Photo: U. Avner)

as an iconographic proxy for the vulva appears to cut across cultures and chronologies; a global catalogue of archaeological cowrie finds, beginning in the Upper Paleolithic, was published by Kovacs (2008: 152-446). Other examples are Koerper (2001), who discussed the sex-based symbolism of cowrie ornaments in the prehistoric cultures of southern California and Singer (1940) who described a Neolithic Jomon figurine of a person wearing a giant image of the cowrie shell suspended by a cord and hanging in the biological position of a pudenda.

Finally, several Neolithic Levantine architectural elements have been interpreted as vulva-shaped. For example, two out of nine preserved tombs in the Late Neolithic/ Early Chalcolithic cemetery of Eilat are built as intersected ovals (Fig. 6), while several roughly contemporaneous open-air sanctuaries in the Negev are also built in this shape (Avner 2002: Table 14:53, 56, 57). In 'Rodedian' sites, 128 pairs of low stone cells were recorded, in which an elongated cell (ca. 4x1m) points to a circle (1.5-2.5m across, Fig. 7). The circle is interpreted as a female symbol, while the elongated cell as the male one (Avner *et al.* 2019: 17). At Neolithic Tel Qaramel, northern Syria, large transected circular structures called 'tower bases', interpreted as assembly places and shrines (Mazurowski and Kanjou 2012), have a form that echoes the 'vulva' iconography.

The Meander Motif

Beginning in the Natufian period, the meander –a generic snake motif – is common in the iconography of the Levant. It is evident on groundstone artefacts, such as mortars, bowls and shaft-straighteners, among others. One such artefact, a pestle from the Natufian site of Upper Besor 6, is encircled with a double meander (Goring-Morris 1998). Carved zigzag motifs appear on shaft-straighteners at Natufian Naḥal Oren (Noy 1991: Fig. 3: 1, 2) and on a stone fragment from Shuqbah Cave (Garrod 1942; Noy 1991: Fig 4.1). At Eynan, the multiple meander appears on rims of stone bowls (Noy 1991: Fig. 4.2, 4.4; Perrot 1966). Highly schematic abstract shapes from Eynan that were thought to represent human heads (*e.g.* Perrot 1966: Fig 21:16; Yizraeli-Noy 1999: 24: 2-3), might instead represent loops of meanders arranged in radial form on semi-oval shapes. This abbreviated snake motif is also called 'nested cupules' (Major 2018:158), 'multiple arches' or 'low arched lines' (Shaham and Grosman 2019: 135) and is a common ophidian motif worldwide (*e.g.* Caldwell 2014-2015; Hampson 2016; Major 2018).

Artefacts bearing the meander/ snake motif continue into the PPNA. A double curved meander is incised on a semi-oval limestone plaque from PPNA NetivHagdud (Bar-Yosef *et al.* 1991) as well as on limestone fragments from the PPNA site of WF16 (Mithen *et al.* 2011: 359), both in the Southern Levant. In the Northern Levant, from PPNA contexts at Jerf-el Ahmar, incised stone plaques show variations of winding, arrow-headed or triangular-headed snakes (Cauvin 1994: 71, Fig. 19,1.2.3a.4a; Akkermans and Schwartz 2003: 89, Fig. 3.18; Helmer, Gourichon and Stordeur 2004: 155, Fig. 5B). This motif also occurs at Tell 'Abr (Yartah 2013) and Körtik Tepe (Benz and Bauer 2015), while at Tell Qaramel whetstones, also from a PPNA context, yielded both carved and scribbled snake designs (Zimmerman 2019).

This imagery continues into the Early PPNB in Anatolia, with an abundance of snake motifs – applied to a variety of materials, incised or in relief – depicted on objects from sites such as Nevalı Çori, Dja'de and Göbekli Tepe (Peters and Schmidt 2004; Schmidt 2010; Dietrich *et al.* 2012; Zimmerman 2019). Benz and Bauer (2015) and more recently, Henley and Lyman-Henley (2019), have discussed these images within the context of shamanistic symbolism.

Notably, the use of the snake image in the Levant and Anatolia dwindles from the MPPNB onwards (*e.g.* Helmer, Gourichon and Stordeur 2004; Schmandt-Besserat 2013), leaving the find from NR110 as an almost singular example. It does, however, reappear in the Pottery Neolithic, where it is incorporated into ceramics and stone vessels as for example at the Late Neolithic site of Riskeh in southern Jordan, where sandstone bowls and additional fragments are decorated with snakes in relief (Kirkbride 1969:192[1]). In the Yarmukian, ceramic vessels in particular exhibit various forms of meander surround the orifice and walls of the vessels. Relief models of snake heads and tails are curled on the rim of Wadi Rabah vessels from Munḥata (Garfinkel 1992: Fig 183:12,13) and from Tel Ali (Garfinkel 1992: Fig.195:1). Another kind of ophidian decoration on PN pottery may be found in the crenelations on rim and ledge handles *e.g.* the rim of a large pithos buried at Munḥata (Garfinkel 1992: Fig. 51:1). Circular 'mat impressions' on the base of vessels are snake-like features, as well as some of the incised decorations on Wadi Rabah vessels, while the pebble dashed decorations on vessels from Tel Ali,

are suggestive of scales (Garfinkel 1992: Fig. 60:1-13 and Fig. 189:21). Kaplan (1969:14, Pls III:7, IV:2-3) reported fragments of plastic thumb-indented clay strips at Tell el-Jarba (Wadi Rabah culture), which he claimed represented snakes.

Over time, different symbolic interpretations have been assigned to the snake motif. The ouroboros – the snake swallowing its own tail, represents the cyclical nature of life – killing and consuming which leads to rebirth and transmutation *i.e.* rejuvenation and cyclicality (*e.g.* Mundkar 1978,1983). This, probably since snakes periodically shed their skin through sloughing (*e.g.* Stabler 1939; Brown 1956). In this connection too, the motif of the snake has also been linked to the cycle of menstrual flow (Knight 1991). Other associations with snakes are as symbols of protective power, and most commonly – an image of male power (*e.g.* Deane 1833; Oldfield-Howey 1955; Mundkar 1978, 1983).

A particularly striking aspect of the Naḥal Roded stone is the three-dimensionality of the engraved snake motif. The meanders on either side of the stone are connected by a single line which continues over the edge of the stone (Fig. 2). Given that this is a large and heavy object, it is interesting how this 3D decoration was planned, and how it was meant to be viewed and/or displayed.

Linking Shape and Image

When interpreting the decorated stone object from NR110, we suggest that the iconography may relate to ancient and global constructs in which both motifs relate to the concept of cyclicity and fecundity and that their bonding on the NR110 object is not accidental. As noted by Knight (1991:488), the vulva/ snake construct endures as an underlying and unchanging syntax, enduring socio-political, economic and sexual politics changes. Indeed, the combination of the vulva and snake motifs is not unique to NR110 but occurs worldwide and in different periods.

This association is especially well-described in an Australian Aboriginal context where the Rainbow Snake motif is inseparably associated with the body of womankind and the origin of the world. The Rainbow snake lives in water and is a symbol of periodicity and cyclicity (Maddock 1978:15). It is depicted either as a zigzag or a curved meander and appears as a rock-art motif in northern Australia as early as 9,000-7,000 years BP (Knight 1991: 468 ff.). The snake also appears in the important aboriginal myth from Australia's north-central region, the Story of the Wawilak Sisters. In this myth, when the sisters were bleeding, the Rainbow Snake flowed out from its hole in the water and swallowed them. This is interpreted by Knight (1991:459) as menstruation having been the force which carried the women to the other world. Taking this idea further, it is possible that the snake depicted encircling the vulva-shaped stone from Naḥal Roded, might be seen as swallowing the (menstruating) woman. Similar beliefs concerning a water-dwelling snake which consumes young girls and is associated with the onset of the menstrual cycle, are widespread in the Far East, Africa and the Americas (*e.g.* Knight 1991: 482-94 and references therein; Morris 2010). These traditional beliefs emphasize periodicity and cyclicity – menstruation, fecundity and rebirth – concepts which we suggest are bound together in the snake and the vulva motifs of the stone object from NR110.

This concept is echoed in the seasonal use of the site of NR110 coinciding with the migrating raptors whose abundant remains were found there. The timing of these migrations in spring and autumn is precise and occurs annually (Shirihai and Christie 1992). Furthermore, raptors have a symbolic association with death, fertility and rebirth that is well established in Neolithic iconography and zooarchaeology (*e.g.* Peters and Schmidt 2004; Marom, Garfinkel and Bar-Oz 2018 and references therein), as illustrated vividly by the 'totem-pole' from Neolithic Nevalı Çori (Anatolia) that is topped by a raptor, beneath which are two crouching figures with vulvae and swollen (pregnant) bellies (Hodder and Meskell 2010). Thus, it is highly likely that raptor hunting at NR110 was closely connected with cultic activities. The association of the snake-vulva motif with that of the migrating raptors emphasizes the role played by life-giving metaphors in the symbolic world of Levantine Neolithic communities. It has a universality, found in the linkages between daily, monthly and seasonal forms of periodicity that form a central unifying theme in the myths collected and analysed by Levi-Strauss (1964; see also Knight 1991: 494).

The raptors, however, are only one of the features which raise the possibility that the cult practiced at Naḥal Roded 110 was linked to seasonal rites. Material finds from the site's surface, such as the anthropomorphic stones, perforated stone objects and limestone vessels, all introduced into the site from the wadis below, as well as the site's unusual location on an exposed, hyper-arid mountain top (lacking water sources or plant and animal resources), further reflect its cultic association (Avner *et al.* 2014, 2018; Birkenfeld *et al.* 2019, in press). One interpretation is that the standing stones represent deities, whether individuals or "organic" groups of repeating numbers, while the stone anthropomorphic images represented ancestors. Commonly, fertility and the ancestral cult are linked together (for these interpretations and other finds see Avner *et al.* 2019, with references).

Much has been written on PPNB ritual, especially in the Mediterranean zones of the Levant, where extensive evidence has been found for the existence of ritual centers and ritual paraphernalia (*e.g.* Kuijt and Goring-Morris 2002; Gebel and Rollefson 2005; Rollefson 2008; Schmandt-Besserat 2013). Here we have presented a unique example from the desert zone, the site NR110 which further exemplifies the integrated nature of all facets of PPNB life; a world with perhaps

little dichotomy between the functional (hunting, food acquisition) and the symbolic (seasonality and cyclicity).

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Endnote

[1] Kirkbride dated the site of Risqeh close to the 1st century BC, but artefacts and one radiocarbon date are Late Neolithic. A fragment of identically decorated sandstone bowl from the Eilat cemetery (Avner 2002:155) confirms this date.

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References

Akkermans P.M.M. and Schwartz G.M.
2003 *The archaeology of Syria: From complex hunter-gatherers to early urban societies (ca.16,000-300 BC)*. Cambridge: Cambridge University Press.

Ash R. and Highton B.
1987 *Private Parts*. London: Corgi Books.

Avner U.
2002 *Studies in the material and spiritual culture of the Negev and Sinai population during the 6th-3rd Millennia BC*. Jerusalem: The Hebrew University of Jerusalem. Unpublished PhD Thesis.
2018 Protohistoric developments of religion and cult in the Negev Desert. *Tel Aviv* 45: 23-62.
in press Burial in the desert and the perception of life and death. *Qadmoniot* (in Hebrew).

Avner U., Shem-Tov M., Enmar L., Ragolski G., Shem-Tov R. and Barzilai O.
2014 A survey of Neolithic cult sites in the Eilat mountains, Israel. *Journal of the Israel Prehistoric Society* 44:101-116.
2019 Neolithic cult sites in the Southern Negev, Israel. In: H. Goldfus, M.I. Gruber, S. Yona and P. Fabian (eds.), *Isaac went out … to the field" (Genesis 24:63): Studies in archaeology and ancient cultures in honor of Isaac Gilead*: 14-35. Archaeopress: Oxford.

Bar-Yosef D.E.
1987 The prehistoric use of shells as jewellery. *Mitekufat Haeven– Journal of the Israel Prehistoric Society* 20:182-184.

Bar-Yosef O.
1997 Symbolic expressions in later prehistory of the Levant: Why are they so few? In: M.W. Conkey, O. Soffer and D. Stratman (eds.), *Beyond art: Pleistocene image and symbol*: 161-187. San Francisco: California Academy of Sciences.

Bar-Yosef O. and Alon D.
1988 Naḥal Hemar Cave. *`Atiqot* 18: 1-15.

Bar-Yosef O., Gopher A., Kislev M.E. and Tchernov E.
1991 Netiv Hagdud – An Early Neolithic village site in the Jordan Valley. *Journal of Field Archaeology* 18: 405-424.

Belfer-Cohen A.
1991 Art items from Layer B, Hayonim Cave: A case study of art in a Natufian context. In: O. Bar-Yosef and F.R. Valla (eds.), *The Natufian culture in the Levant*: 569-588. Archaeological Series 1. Ann Arbor: International Monographs in Prehistory.

Benz M. and Bauer J.
2015 On scorpions, birds and snakes – Evidence for shamanism in Northern Mesopotamia during the Early Holocene. *Journal of Ritual Studies* 29: 1-23.

Biggs H.E.J.
1963 On mollusca collected during the excavations at Jericho, 1952-1958, and their archaeological significance. *Man* 153: 125-128.

Birkenfeld M., Avner U., Bar-Yosef Mayer D.E., Cummings L.S., Natalio F., Neumann F.H., Porat N., Scott L., Simmons T. and Horwitz L.K.
in press Dating, archaeology and paleoenvironment of the Late Pre-Pottery Neolithic B site of Naḥal Roded 110, in the Eilat Mountains. *Paléorient*.

Birkenfeld M., Horwitz L.K., Bar-Yosef Mayer D.E.,Bond J., Guttmann-Bond E., Cummings L.S., Goldgeier H., Krakovsky M., Natalio F., Nebenhaus K., Neumann F.H., Porat N., Scott L., Simmons T., Yashuv T. and Avner U.
2019 Investigations at Naḥal Roded 110: A Late Neolithic ritual site in the southern Negev. *Antiquity* 93(367), e4. doi: 10.15184/ aqy.2019.6

Brown E.E.
1956 Frequency of skin shedding in the northern banded water snake. *Herpetologica* 12: 313-320.

Caldwell D.
2014-15 A new ordering of Adena tablets based on a deeper reading of the MacKensie Tablet. *Res: Anthropology and Aesthetics* 65/ 66: 105-127.

Cauvin J.
1994 *Naissance de divinités, naissance de l'agriculture. La révolution des symboles au Néolithique*. Paris: CRNS. Éditions.

Cosner A.J.
1951 Arrow shaft straightening with a grooved stone. American *Antiquity* 17: 147-148.

Deane J.B.
1833 *The worship of the serpent traced throughout the world* (1st ed.). London: Gilbert and Rivington.

Dietrich O., Heun M., Notroff J. and Schmidt K.
2012 The role of cult and feasting in the emergence of Neolithic communities. New evidence from Göbekli Tepe, south-eastern Turkey. *Antiquity* 86: 674-695.

Eliade M.
1991 [1965] *Images and symbols.Studies in religious symbolism* (translated by Philip Mairet). Princeton: Princeton University Press.

Garfinkel Y.
1992 *The material culture in the Central Jordan Valley in the Pottery Neolithic and Early Chalcolithic Periods*. Jerusalem: The Hebrew University of Jerusalem. Unpublished PhD Thesis.
1995 *Human and animal figurines of Munhata (Israel)*. Cahiers des Missions Archéologiques Françaises en Israël 8. Paris: Association Paléorient.

Garrod D.A.E.
1942 Excavations at the cave of Shukbah 1928. *Proceedings of the Prehistoric Society* 8: 1-20.

Gebel H.G.K. and Rollefson G. (eds.).
2005 The Early Neolithic origin of ritual centers. *Neo-Lithics* 2/05. Berlin: ex oriente.

Gimbutas M.
1991 *The civilization of the goddess: The world of old Europe*. San Francisco: Harper Collins.

Gopher A. and Orrelle E.
1996 An alternative interpretation for the material imagery of the Yarmukian, a Neolithic culture of the sixth millennium BC in the Southern Levant. *Cambridge Archaeological Journal* 6: 255-279.

Goring-Morris A.N.
1998 Mobiliary art from the Late Epipaleolithic of the Negev, Israel. *Rock Art Research* 15: 81-88.

Goring-Morris A.N. and Belfer-Cohen A.
2002 Symbolic behaviour from the Epipalaeolithic and Early Neolithic of the Near East: Preliminary observations on continuity and change. In: H.G.K. Gebel, B.D. Hermansen and C. Jensen Hoffmann (eds.), *Magic practices and ritual in the Near Eastern Neolithic*. Studies in Early Near Eastern Production, Subsistence, and Environment 8: 67-79. Berlin: ex oriente.

Hampson J.
2016 *Rock art and regional identity: A comparative perspective*. New York: Routledge.

Helmer D., Gourichon L. and Stordeur D.
2004 À l'aube de la domestication animale. Imaginaire et symbolisme animal dans les prémières sociétés néolithiques du nord du Proche-Orient. *Anthropozoologica* 39: 143-163.

Henley T.B. and Lyman-Henley L.P.
2019 The snakes of Göbekli Tepe: An ethological consideration. *Neo-Lithics* 19: 16-19.

Hershman D.
2014 *Face to face: The oldest masks in the World*. Jerusalem: The Israel Museum.

Hershman D. and Belfer-Cohen A.
2010 "It's magic!": Artistic and symbolic material manifestations from the Gilgal sites. In: O. Bar-Yosef, A.N. Goring-Morris and A. Gopher (eds.), *Gilgal – Early Neolithic occupations in the Lower Jordan Valley. The excavations of Tamar Noy*: 185-216. Oxford: Oxbow Books.

Hodder I. and Meskell L.
2010 The symbolism of Çatalhöyük in its regional context. In: I. Hodder (ed.), *Religion in the emergence of civilization: Çatalhöyük as a case study*: 32-72. Cambridge: Cambridge University Press.

Kaplan J.
1969 `Ein el Jarba Chalcolithic remains in the Plain of Esdraelon. *Bulletin of the American Society for Oriental Research* 194: 2-39.

Kenyon K. and Holland T.
1981 *Excavations at JerichoV*. London: British School of Archaeology in Jerusalem.

Khalaily H., Milevski I., Getzov N.,Hershkovitz I., Barzilai O., Yarosevich A., Shlomi V., Najjar A., Zidan O., SmithlineH. and Liran R.
2008 Recent excavations at the Neolithic site of Yiftahel (Khalet Khalladyiah), Lower Galilee. *Neo-Lithics* 2/08: 3-11.

Kirkbride D.
1969 Ancient Arabian ancestor idols. *Archaeology* 22: 116-121,188-195.

Knight C.
1991 *Blood relations: Menstruation and the origins of culture.* New Haven and London: Yale University Press.

Koerper H.C.
2001 Cowry shells: Fertility/ fecundity symbols in Southern California iconography. *Journal of California and Great Basin Anthropology* 23: 27-38.

Kovacs L.
2008 *Vulvae, eyes, snake heads. Archaeological finds of cowrie amulets*. BAR International Series 1846. Oxford: Archaeopress.

Kuijt I.
2017 Clay ideas. Levantine Neolithic figurine trajectories and intellectual threads. In: T. Insoll (ed.), *The Oxford handbook of prehistoric figurines*: 545-566. Oxford: Oxford University Press.

Kuijt I. and Goring-Morris A.N.
2002 Foraging, farming, and social complexity in the Pre-Pottery Neolithic of the Southern Levant: A review and synthesis. *Journal of World Prehistory* 16: 361-440.

Levi-Strauss C.
1964 *Mythologiques 1: Le cru et le cuit*. Paris: Plon.

Maddock K.
1978 Introduction. In: I.R. Butcher, K.H. Maddock and C.P. Mountford (eds.), *The rainbow serpent: A chromatic piece*: 1-22. The Hague: De Gruyter Mouton.

Major J.
2018 *Wadi Hammeh 27, Jordan Valley. Natufian art items. A contextual analysis*. bibliotheca neolithica Asiae meridionalis et occidentalis. Berlin: exoriente.

Marom N., Garfinkel Y. and Bar-Oz G.
2018 Times in between: A zooarchaeological analysis of ritual in Neolithic Sha'arHagolan. *Quaternary International* 464A:216-225.

Marshack A.
1991 The female image: A time-factored symbol. A study in style and aspect of image use in the Upper Palaeolithic. *Proceedings of the Prehistoric Society* 57: 17-31.

MazurowskiR.F. and Kanjou Y. (eds.)
2012 *Tell Qaramel 1999-2007. Protoneolithic and Early Pre-Pottery Neolithic settlement in Northern Syria*. PCMA Excavation Series 2. Warsaw: PCMA.

Mithen S.J., Finlayson B., Smith S., Jenkins E., Najjar M. and Maricevic D.
2011 An 11,600 year-old communal structure from the Neolithic of southern Jordan. *Antiquity* 85: 350-364.

Morris D.
2010 Snake and veil: The rock engravings of Driekopseiland, northern Cape South Africa. In: G. Blundell, C. Chippindale and B. Smith (eds.), *Seeing and knowing. Rockart with and without ethnography*: 36-53. Johannesburg: University of Witwatersrand Press.

Mundkar B.
1978 The roots of ophidian symbolism. *Ethos* 6: 125-158.
1983 *The cult of the serpent: An interdisciplinary survey of its manifestation and origins*. New York: Suny Press.

Murray M.A.
1939 The meaning of the cowrie shell. *Man* 165: 167.

Noy T.
1991 Art and decoration of the Natufian at Naḥal Oren. In: O. Bar-Yosef and F.R. Valla (eds.), *The Natufian culture in the Levant*: 557-568. Archaeological Series 1. Ann Arbor: International Monographs in Prehistory.

Oldfield-Howey M.
1955 *The encircled serpent. A study of serpent symbolism in all countries and ages*. New York: Arthur Richmond.

Orrelle E.
2014 *Material images of humans from the Natufian to Pottery Neolithic periods in the Levant*. BAR International Series 2595. Oxford: Archaeopress.

Perrot J.
1966 Le gisément Natoufien de Mallaha (Eynan) Israel. *L'Anthropologie* 70: 437-484.

Peters J. and Schmidt K.
2004 Animals in the symbolic world of Pre-Pottery Neolithic Göbekli Tepe, south-eastern Turkey: A preliminary assessment. *Anthropozoologica* 39: 179-218.

Rollefson G.O.
2008 Charming lives: Human and animal figurines in the Late Epipaleolithic and Early Neolithic periods in the greater Levant and eastern Anatolia. In: J.P. Bocquet-Appel and O. Bar-Yosef (eds.), *The Neolithic demographic transition and its consequences*: 387-416. New York: Springer.

Schmandt-Besserat D.
2013 *Symbols at `Ain Ghazal: 'Ain Ghazal Excavation Reports 3*. bibliotheca neolithica Asiae meridionalis et occidentalis. Berlin: ex oriente.

Schmidt K.
2010 Göbekli Tepe – The stone age sanctuaries. New results of ongoing excavations with a special focus on sculptures and high reliefs. *DocumentaPraehistorica* 37: 239-256.

Shaham D. and Belfer-Cohen A.
2013 Incised slabs from Hayonim Cave: A methodological case study for reading Natufian art. In: F. Borrell, J.J. Ibáñez and M. Molist (eds.), *Stone Tools in Transition: From Hunter-Gatherers to Farming Societies in the Near East*: 407-419. Barcelona: UniversitatAutònoma de Barcelona Press.

Shaham D. and Grosman L.
2019 Engraved stones from Nahal Ein Gev II. Portraying a local style, forming cultural links. In: L. Astruc, C. McCartney, F. Briois and V. Kassianidou (eds.), *Near Eastern lithic technologies on the move. Interactions and contexts in Neolithic traditions*: 133-142. Studies in Mediterranean Archaeology 101. Uppsala: Astrom Editions.

ShirihaiH. and Christie D.A.
1992 Raptor migration at Eilat. *British Birds* 85: 141-186.

Singer K.
1940 Cowrie and baubo in early Japan. *Man* 40: 50-53.

Stabler R. M.
1939 Frequency of skin shedding in snakes. *Copeia* 4: 227-229.

Stekelis M.
1972 *The Yarmukian culture of the Neolithic Period.* Jerusalem: The Magnes Press.

Vered A.
2014 Grooved Stones in the Southern Levant: typology, function and chronology. In: F. Borrell, J.J. Ibañez, M. Molist (eds.), *Stone Tools in Transition: From Hunter-Gatherers to Farming Societies in the Near East:* 435-448. Bellaterra (Barceolona): Universitat Autonoma de Barcelona. Servei de Publicacions.

Wright K.
1992 *Ground stone assemblage variations and subsistence strategies in the Levant 22,000-5,500 B.P*. New Haven: Yale University. Unpublished PhD Thesis.

Yartah T.
2013 *Vie quotidienne, vie communautaire et symbolique à Tell'Abr 3, Syrie du Nord. Données nouvelles et nouvelles réflexions sur l'horizon PPNA au nord du Levant 10,000-9,000 BP*. Lyon, Université Lumière – Lyon 2: Thèse de Doctorat Nouveau Régime.

Yizraeli-Noy T.
1999 *The human figure in prehistoric art in the land of Israel.* Jerusalem: Israel Museum (in Hebrew).

Zimmerman T.
2019 Snakes in the plain! Contextualizing prehistoric Near Eastern snake symbolism and early human behavior. *Anatolica* 44: 17-27.