Why Painted? The Decorated Stone Tools from Fazael 4, an Early Bronze Age I Site in the Jordan Valley

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Abstract

The current paper discusses three painted ground stone tools—two upper grinding stones and a bowlet—from the Early Bronze Age Ia2 rural settlement Fazael 4. All three items are utilitarian and potentially linked to food processing (particularly grinding stones). Their working surfaces were brush painted with a basket-like design composed of intersecting lines. While the decorations are frail, the items are complete and suitable for use, implying that the painting deliberately took them out of service. So far, this phenomenon is unparalleled in the contemporary southern Levant. We suggest that it underscores the tools' social and symbolic significance as food processors and discuss this hypothesis as part of a broader phenomenon of food processing tools' secondary use and decoration observed throughout late prehistory.

Keywords: ground stone tools; grinding stones; food production; decoration; painting

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1. Introduction

In the southern Levant, grinding emerged in the Neolithic period, along with the transition to a sedentary way of life and the development of agro-pastoral economies (e.g., Bar-Yosef and Belfer-Cohen 1989; Wright 1993; 1994; 2000; Bar-Yosef 1998; Belfer-Cohen and Bar-Yosef 2000; Rosenberg 2013). These socioeconomic trends were associated with the proliferation of symbolic behaviors centered on food provisioning, communal relations, and rituals pertaining to food production and consumption (e.g., Haaland 2007; Twiss 2008; Rosenberg 2008; 2013). In prehistory, food processing tools were used to convert raw substances into edible resources in quotidian and ritual contexts (see Wright 1991; 1994; 2000; Dietler and Hayden 2001; Twiss 2008). Consequently, ground stone food processing tools acquired considerable economic and social significance and the status of valuable commodities (e.g., Wright 2000; 2014; Haaland 2007; Rosenberg 2008; Dubreuil and Plisson 2010; Rosenberg 2013).

Below, we present three painted ground stone tools discovered at Fazael 4, an Early Bronze Age I site in the Jordan Valley. The region's archaeological record lacks direct parallels for this phenomenon. We hypothesize that these artifacts were removed from their original functional realm, which provided them with additional, albeit unclear, symbolic aspects beyond their existence and use. We discuss this discovery's significance and its correlations with other behaviors that charge food processing tools with symbolic content.

1.1. The site

Fazael 4 is a rural EB Ia2 settlement (Fig. 1) located ca. 20 km north of Jericho in the Jordan Valley, the West Bank. It is situated on a natural terrace on the northern slope descending towards the Fazael stream. Two occupation phases were identified. In the second occupation phase (Stratum I), the settlement covered an area of ca. 3 ha, whereas the first (Stratum II) was only encountered in a limited area, rendering its size indeterminate (Bar et al. 2012; 2021).

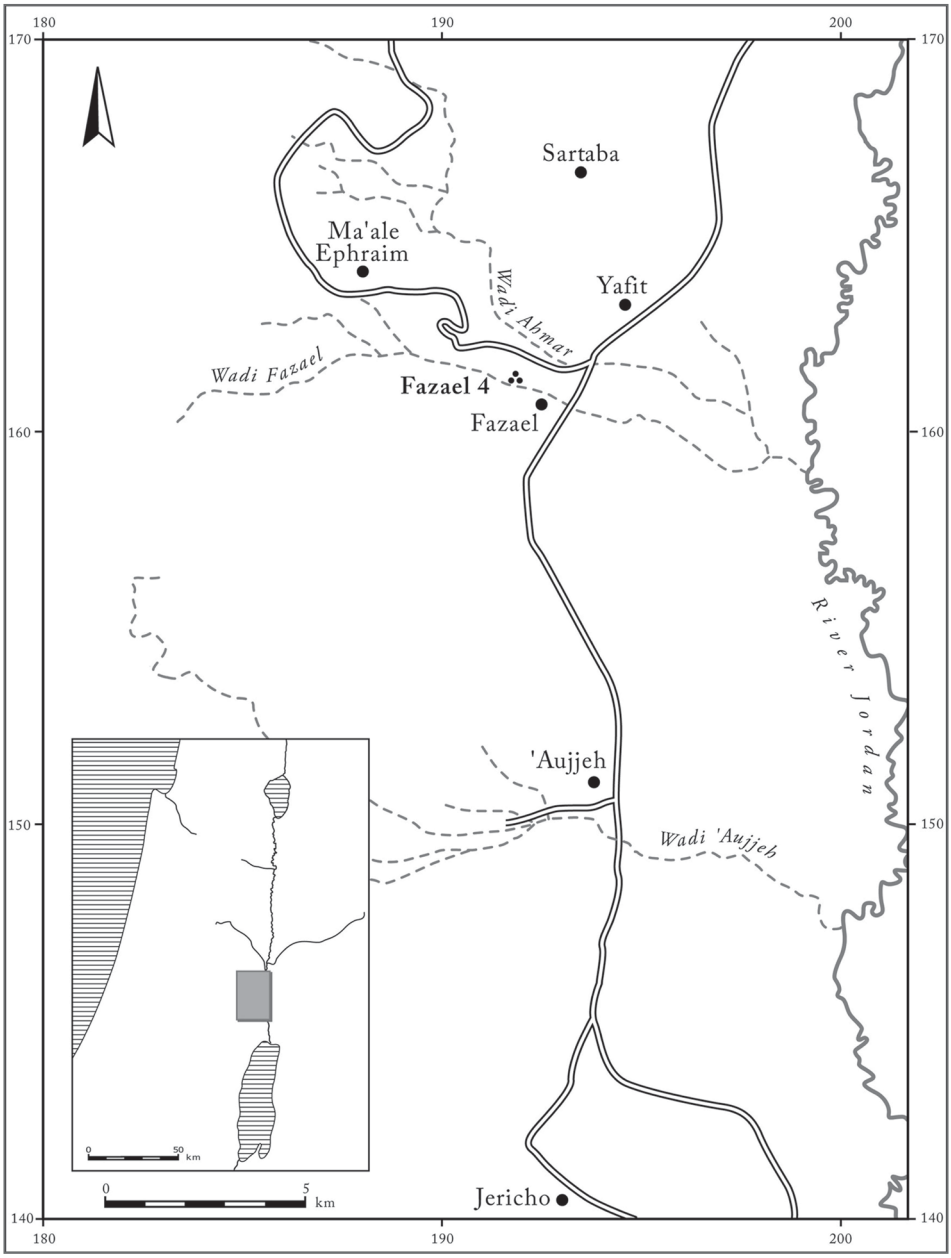

Fig. 1. The location of Fazael 4 (by Sapir Haad).

The Stratum I settlement comprises a dense system of irregular dwelling units, circular structures, which probably functioned as grain silos or other storage

facilities, and walled courtyards (Bar et al. 2012: 3–8; 2021: 263–266). Two adjacent dwelling complexes were distinguished so far within the excavated area (Fig. 2). The pottery assemblage mainly consists of cooking and storage vessels: jars, holemouth jars, and bowls. The nearly complete absence of kraters, jugs, and juglets is striking. Stratum II produced a large lithic assemblage indicating extensive lithic production of Canaanean blades (Zutovski and Bar 2017; Bar et al. 2021: 281–291).

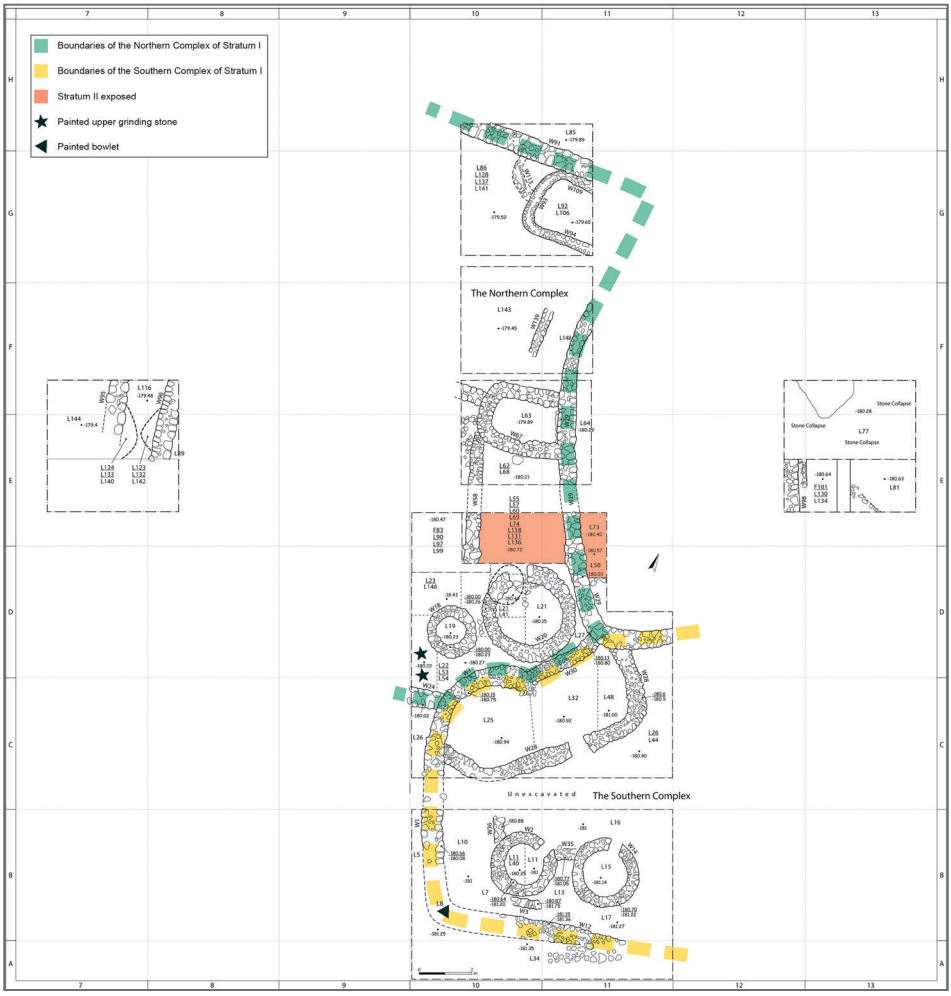

Fig. 2. Plan of Fazael 4 with the locations of the painted ground stone tools (illustration: Sapir Haad and Karolina Hruby).

1.2. The ground stone tool assemblage

The ground stone tool assemblage of Fazael 4 primarily reflects food processing activities. It includes 34 items, most of which (n=28) derive from Stratum I (Bar et al. 2021: Fig. 8). The remaining six items were either found in Stratum II (n=3) or in the stone rubble on the surface (n=3). Nearly all tools were produced of locally available limestone comprising 92.9% of the stone tools of Stratum I (Bar et al. 2021: 291). Additionally, five basalt items were found: a spindle whorl made of compact basalt and four grinding stone fragments made of compact and porous basalt. Two of these—the whorl and an upper grinding stone—are assigned to Stratum II, whereas the remainder were retrieved from Stratum I (n=2) or the surface.

The Stratum I assemblage includes tools and tool fragments primarily made of limestone, a pattern typical of south Levantine EB I villages without immediate access to basalt (see Hruby and Rosenberg, forthcoming). It consists of lower and upper grinding stones, small bowlets, coarse mortar bowls, spindle whorls, and a net sinker. These tools were found in contexts associated with dwelling and storage (Bar et al. 2012: 8–29; 2021: 291–296). Most—primarily food processors (usually complete grinding stones, bowlets, and a bowl) but also a small concertation of limestone chipping debitage and a spindle whorl—were exposed on beaten-earth surfaces of walled courtyards, often near the silos. Only a single lower grinding stone fragment and a bowlet were found inside the curvilinear building of the southern complex (Fig. 2). It may suggest that, in this village, food processing and perhaps occasional craft-related activities involving stone tools were typically conducted in the courtyards (Bar et al. 2021: 296).

2. The Painted Tools

Three of the ground stone tools of Stratum I bear painted patterns on their active faces, a presently unparalleled phenomenon of the EB I of the southern Levant. They include two upper grinding stones and a small bowlet, all complete and made of limestone (Fig. 3). Their active faces bear use-wear traces and were clearly used for processing before the paint was applied.

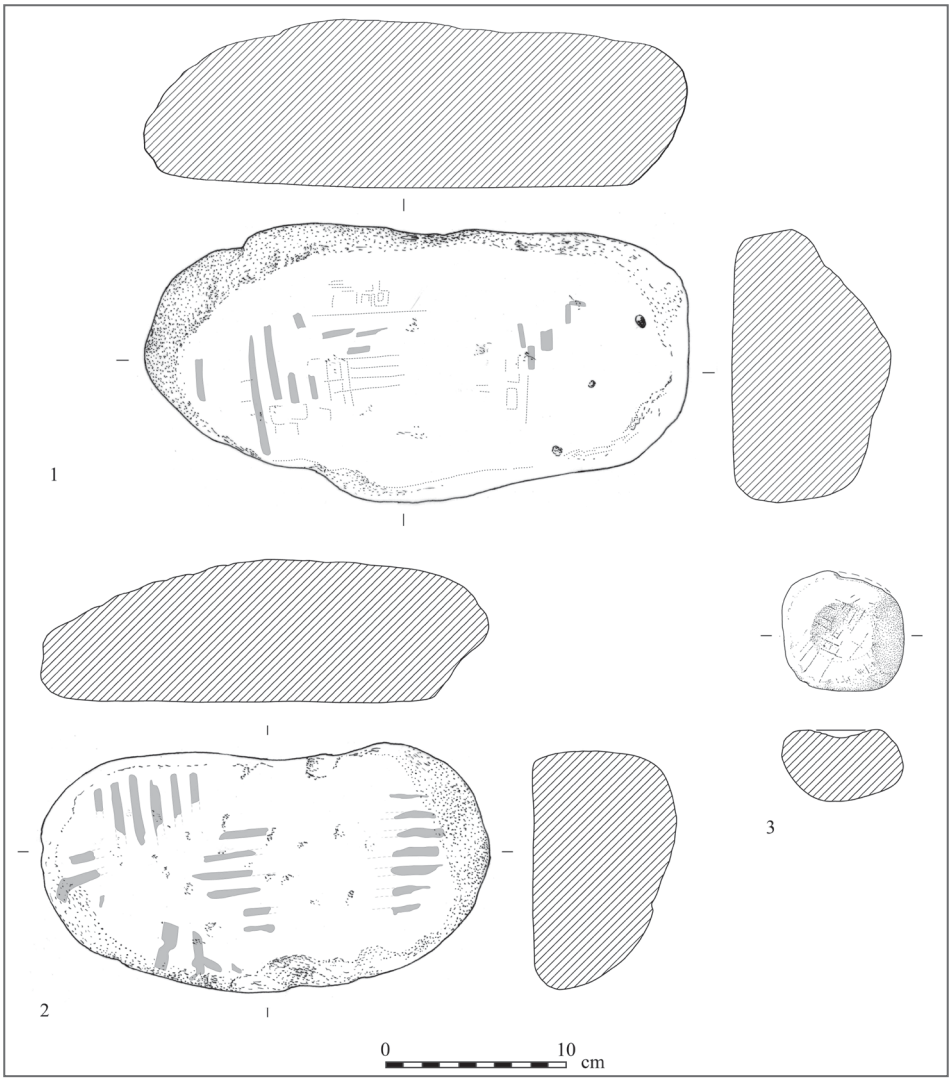

Fig. 3. Painted ground stone tools from Fazael 4 (illustration: Sapir Haad).

The two upper grinding stones were found next to each other on a beaten-earth floor at the southern end of the northern dwelling complex (Locus 22), south of the small silo designated as W18 (Fig. 2). They were discovered with flat-laying sherds representing typical EB I pottery, including bowls, jars, and pithoi (Bar et al. 2021: Figs. 9:3, 20, 10:1, 11:5, 14). The grinding stones are of the same morphological type featuring an oval plan and a thick plano-convex cross-section. Such tools were typically used for two-handed bidirectional grinding on a lower elongated slab; their dorsal faces provided a comfortable grip, while their

ventral faces were abraded and smoothened by use (Wright 1992a: 67–69; Type nos. 60, 62; Rosenberg and Garfinkel 2014: 115–117, Type C1a1).

One decorated upper grinding stone is 29.5 cm long, 15.2 cm wide, 8.8 cm thick, and 5.7 kg heavy. The painted pattern is poorly preserved, comprising a possibly organic, dark brown-gray colorant applied to the tool's flat active face with a brush. It consists of parallel stripes along and across the tool's main axis and is likely to have originally produced a right-angled, crisscrossed pattern. At least six longitudinal and 12 latitudinal—two sets of six—stripes were observed (Figs. 2:1, 4:1). These stripes are 1.2–5.0 cm long; on average, they are 6.0 mm wide (4.8–7.6 mm) and 5.9 mm apart (4.8–7.4 mm).

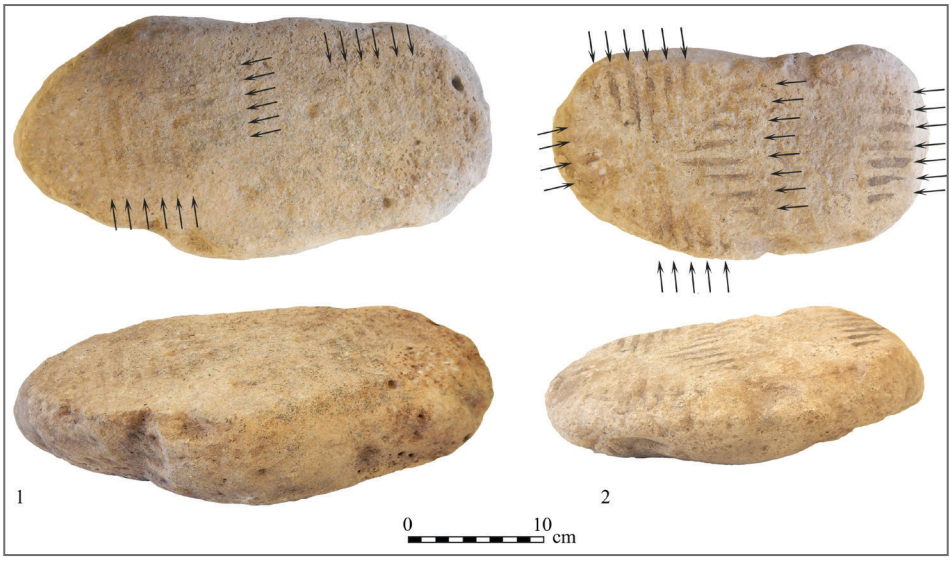

Fig. 4. Planar and oblique views of the painted grinding stones; arrows indicate the observed stripes (photo: Karolina Hruby).

The second grinding stone (Figs. 2:2, 4:2) is slightly smaller: 24.7 cm long, 13.2 cm wide, 7.9 cm thick, and 3.4 kg heavy. As above, the painted pattern consists of parallel longitudinal and latitudinal stripes across the tool's flat face. The longitudinal sets (Fig. 5:2) comprise four to eight lines. Although discontinuous, the stripes are well aligned and probably produced an uninterrupted pattern across the tool's entire face when fresh. The transversal lines are observed on opposed edges of the active face (Fig. 5:1) comprising two groups of five and six stripes, which may have once been connected. The preserved line fragments are 1.2–4.1 cm long; on average, they are 5.3 mm wide (4.7–6.3 mm) and 6.4 mm apart (5.6–8.1 mm).

Fig. 5. Close-up view of the painted pattern on the upper grinding stone (photo: Karolina Hruby).

The bowlet (Figs. 2:3, 6) was made of a limestone pebble and found in a fill associated with the collapse of the southern courtyard's wall (Locus 8; Fig. 2). It is 6.7 cm across, 4.1 cm thick, and 230.0 g heavy. The bowlet has a biconvex cross-section, and its sides were faceted through abrasion. One face is slightly flattened and bears a shallow dent (3.6 cm in diameter and 0.5 cm deep) pecked and incised with a pointed chisel. Battering scars on one side of the item suggest it was secondarily used as a pounder. The painted pattern is poorly preserved, comprising weak traces of a brown colorant near the hollow. While the stripes'

descent along the hollow's sides demonstrates that they postdate its formation, we could not establish whether the secondary pounding preceded or followed the painted design. The pattern includes sets of four to five parallel lines perpendicular to the bowlet's edges, which originally may have spanned the entire surface. The preserved stripes are 0.9–3.3 cm long; on average, they are 5.3 mm wide (4.6–6.0 mm) and 6.0 mm apart (4.3–7.0 mm).

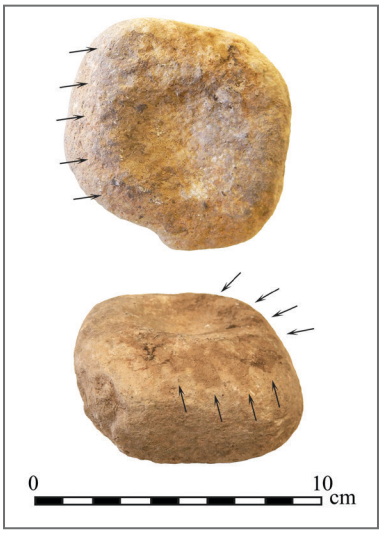

Fig. 6. Planar and oblique views of the painted bowlet, arrows indicate observed stripes (photo: Karolina Hruby).

3. Discussion

The grinding stones and bowlet from Fazael 4 share a similar painted pattern composed of intersecting sets of parallel stripes, which produce a crosshatched design resembling a reed mat. The lines were implemented free-handedly; they sometimes arch and angle at the tools' edges, and the paint occasionally spills down the sides (Fig. 5:1). Nonetheless, as a rule, the stripes are straight and parallel, consistently thick, and regularly distributed.

The paint is a brown-gray substance, likely of organic derivation. Although significantly darker than the limestone, it was thinly applied, resulting in poorly preserved, nearly transparent stripes, which can be easily removed by washing or abrading. The stripes' shape and arrangement indicate that they were carefully applied with a ca. 0.5–0.6 cm-wide brush. Moreover, given the recurring pattern and colorant, the tools may have been painted together by the same brush and

perhaps even the same hand. In all three cases, the painting was implemented after the tools were used and while they were still functional. After the painting was applied, they were no longer used for their original purpose, which would have completely erased the flimsy decoration. Thus, one can safely assume that the painting was linked to the deliberate end of the tools' original use, although we are unsure whether this change was intended as final or temporary.

The decorated items discussed here are unique for several interweaving reasons. Painted stone is a phenomenon that dates back at least to the Upper Paleolithic (e.g., Hoffmann et al. 2018 and references therein) but is rarely found on tools (but see Cristiani, Lemorini, and Dalmeri 2012). Usually, the presence of pigment on stone tools is attributed to pigment processing rather than decorative practices (e.g., Dubreuil and Grosman 2009; Henshilwood et al. 2011; Wang et al. 2022). Moreover, if ground stone tools are decorated (e.g., Rosenberg and Garfinkel 2014: 37–82; Chasan and Rosenberg 2019), they are usually incised or chiseled.

3.1. Decorating stone tools

Decorated food processing stone tools in the southern Levant are known from as early as the late Epipalaeolithic-period Natufian culture (e.g., Perrot 1966; Wright 1991; 1992b; Rosenberg 2013; Rosenberg et al. 2013) when the frequency of artistic representations on stone rose (Shaham and Belfer-Cohen 2013; Rosenberg et al. 2020). However, this practice remained rare (e.g., Rosenberg 2011: Figs. 6.17, 6.21, 8.23–8.30, 8.32, 8.33, 8.39) until the Late Chalcolithic period, when we see a significant increase in decorated stone vessels (e.g., Rowan 1998; van den Brink, Rowan, and Braun 1999; Chasan 2017; Chasan and Rosenberg 2018; Chasan, van den Brink, and Rosenberg 2019). Geometric decorations comprising parallel and occasionally intersecting lines are typical for Late Chalcolithic basalt bowls (e.g., Chasan and Rosenberg 2018; 2019; Chasan, Brink, and Rosenberg 2019). These patterns, however, are incised, never painted, and during the Early Bronze Age, they become infrequent and restricted to raised bands (e.g., Braun 1990; Rowan 1998; Hruby and Rosenberg forthcoming).

To the best of our knowledge, archaeological and ethnographic research has not produced painted grinding stones or food processors comparable to those of Fazael 4. Nonetheless, the decoration of artifacts is interpreted as symbolically and socially laden (e.g., Orelle and Gopher 2002; Pikirayi 2007). However, it is uncertain whether the tools were kept in the assemblage primarily due to their symbolic significance or because they acquired other practical roles within the dwelling compounds of Fazael 4 (e.g., incorporated into a wall or a pavement or used as a platform for other courtyard activities).

Nevertheless, since these tools are household implements produced from locally accessible raw materials and display typical morphologies, we suggest that their decoration was associated with their original function as economically and socially valued food processors. It is worth noting that, when painted, these tools were neither broken nor were their grinding and processing abilities compromised. The decision to withdraw the tools from their functional domain and to decorate their grinding surfaces emphasizes these tools' importance for rural Early Bronze Age subsistence. It also brings to mind examples of intentional breakage or conspicuous consumption of various tools and commodities (e.g., Bradley 1988; Chapman 2000; Adams 2008; Rosenberg 2013; Quinn 2015; Ashkenazi and Rosenberg 2022).

3.2. The motif

When contextualizing the motif in the decorative repertoire of the preceding and contemporaneous south Levantine material culture, mat impressions and basketry are the most forthcoming associations. Baskets are known from as early as the Pre-Pottery Neolithic B period (Arensburg and Hershkovitz 1988); later, mat impressions were recorded on ceramic vessel bases (e.g., Gilead and Goren 1995: Fig. 4.20:8, 9; Bourke et al. 2000: Fig. 9:5, 6; 2007: Fig. 29:27; Kerner 2003: 160–162, Figs. 1.4, 1.6; Brink 2011: Figs. 20:7, 28:2; Rosenberg et al. 2017) and Late Chalcolithic ossuaries (e.g., Shalem 2008; see also Gal, Smithline, and Shalem 1997; Schick 2005: 47–50; Avrutis 2012: 44–45, Fig. 3.11). Chalcolithic-period and Early Bronze Age remains of reed and textile artifacts are rare (e.g., Shamir and Rosen 2015: 135), primarily found in the arid zones of the Judean Desert and the Negev (e.g., Bar-Adon 1962; Adovasio and Andrews 1979; Schick 1998; 2002; Chesson 2012; Shamir and Rosen 2015).

During the Late Chalcolithic period, linear painted decoration on pottery and incised patterns on stone vessels (Gilead 1995: Figs. 7.1:4, 9; Rowan 1998: Figs. 53:A, D; Rosenberg, Chasan, and van den Brink 2016; Chasan, van den Brink, and Rosenberg 2019; Chasan and Rosenberg 2019) probably imitated basketry. They virtually disappear with the transition to EB Ia and reappear in EB Ib1 in the form of so-called "basket style" or "pajama style" wares (Amiran 1970; Stager 1990; Braun 1996: 215–216; 2012; Yekutieli 2000; 2006; Avrutis 2012:120; Davidovich 2012: 12–16).

Thus, chronologically, the decorated stone tools of Fazael 4 appear in the hiatus when linear decorations were practically non-existent. Unlike the basketry-oriented decorations of the Late Chalcolithic and EB Ib containers, their lines' perpendicular arrangement on flat surfaces resembles the weaving of plaited

mats (e.g., Schick 1998: Figs. 4:1–3) rather than basketry. Their presence in the EB Ia2 archaeological record can be viewed either as a distant echo of the Late Chalcolithic tradition of decorating artifacts involved in food processing or as an anticipation of this tradition's revival on EB Ib1 ceramics. While basketry-like decorations on containers are usually interpreted as replicas of similar receptacles made of perishable materials (e.g., Stager 1990; Braun 2012), the ideas behind mat-like paintings of food processing ground stone tools are harder to pin down.

3.3. The social and symbolic aspects of painted stones from Fazael 4

Food processing in village communities is widely conceived to have been performed at the nuclear family and household levels (e.g., Byrd 1994; Wright 2000; Chesson 2003; Rosenberg 2008; 2013; Banning 2010). However, increasing social stratification and complexity during the Early Bronze Age instigated changes in food processing practices entailing a rise in surplus accumulation and specialized craft production. Ethnographic and archaeological evidence confirms that, among agricultural societies, these processes transformed household organizations and were reflected in food processing practices and tools (Rosenberg 2013: 189; see also Adams 1993: 341–342; Byrd 1994; David 1998; Holmberg 1998; Wright 2000: 114–115; Haaland 2007; Banning 2010; Twiss 2012).

Food processing implements' material and cultural value imbued them with symbolic content regarding community and household subsistence, gender relations, and divisions of labor. Their production is associated with social interactions and agreements concerning raw material extraction and transportation, tool morphology, and manufacturing techniques (Rosenberg 2008; Abadi-Reiss and Schneider 2009; Kerner 2010; Beller et al. 2016: 44–47); their use-life reflected household and communal organization and was likely related to their users' or owners' social roles, status, or family affiliations (e.g., David 1998; Ronen 2003; Rosenberg 2008; 2013; Chasan and Rosenberg 2018).

Hence, some food processing ground stone tools would have been converted, rather than discarded, and marked in a significant manner: decorated, turned upside-down, or embedded in an architectural feature. We interpret these behaviors as expressions of the items' symbolic content, which derives from their role in food provision, literally supporting life, and their association with a specific social group or family (e.g., Mithen, Finlayson, and Shaffrey 2005; Rosenberg 2008; 2013). As such, these food processing tools were valuable properties that may have symbolized prosperity and, when incorporated into walls and structures, may have fulfilled an apotropaic function (Rosenberg 2013: 186).

To conclude, we currently lack sufficient data to fully understand the ideas underlying the painted stone tools found at Fazael 4. However, the choice of pattern (net impression), technique (painting), and medium (ground stone tools) seems systemic, and we will provide additional information through an ongoing chemical analysis of the colorants. The decorative painting of the stone tools' active faces, while still suitable for use, suggests a deliberate removal of these tools from their operational sphere, transferring them to a different realm. This mode of practice has been recorded throughout protohistory, including the Early Bronze Age (e.g., Bradley 1988; Chapman 2000; Adams 2008; Rosenberg 2013; Quinn 2015; Ashkenazi and Rosenberg 2022). Presumably, it served to accentuate the value of food processing tools by underscoring their role in maintaining subsistence and signifying status or prosperity.

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