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Village Pottery Production and Exchange: a Jordan Valley Perspective

Introduction

Recent field research in Jordan highlights the importance of small village communities in the rise and collapse of urbanized society in Bronze Age Transjordan and Palestine. Survey data from the Jordan Valley and Palestine document proliferations of rural settlements with the appearance of fortified towns in both the Early Bronze and Middle Bronze ages (Broshi and Gophna 1984; 1986). Excavated evidence from several village sites along the eastern Jordan Valley also suggests the significant role of sedentary farmers in 'pastoralized' Early Bronze IV society,[1] following the collapse of Early Bronze II-III urban centers.

A long tradition of archaeological surveys (Glueck 1951; Mellaart 1962; Ibrahim, Sauer and Yassine 1975) points out the wealth of ancient villages in the Jordan Valley. Building on these surveys, a number of recent village excavations complement on-going research at the larger *tells* of the valley. This multi-faceted database encourages investigation of the economic ties between sites of various sizes and functions in non-urbanized and urbanized society. Radiometric analysis of Early Bronze IV and Middle Bronze II A ceramics from Tell el-Hayyāt and several surrounding sites illuminates changing patterns of local pottery production and exchange accompanying the rise of urban centers ca. 2000 BC.

Excavations at Tell el-Hayyāt and Tell Abu en-Niʿāj

The University of Arizona Tell el-Hayyāt Project is organized to investigate the roles of villages as they affected, and were affected by, processes of urbanization. Tell el-Hayyāt exemplifies the small communities that provided the foundation for urbanization, but rarely are excavated. Survey accounts suggest that occupation at Hayyāt spanned Early Bronze IV and the reurbanized era of Middle Bronze II, thus providing an unusual opportunity to study transitions in village economy at one site (see Glueck 1951: 259; Mellaart 1962: 144–145; Ibrahim, Sauer and Yassine 1975: 49, 54; site 56). An additional impetus for excavation is the long-standing threat of Hayyāt's destruction by agricultural development in the Jordan Valley (Mellaart 1962: 145; Ibrahim, Sauer and Yassine 1975: 64–65).

Three seasons of excavation at Tell el-Hayyāt in cooperation with the Department of Antiquities of Jordan have shown these survey reports to be correct (see Falconer and Magness-Gardiner 1983a; 1983b; 1984).[2] Habitation at Tell el-Hayyāt began in late Early Bronze IV and continued without interruption through six stratigraphic/architectural phases to late Middle Bronze II C.

Phases of occupation at Tell El-Hayyāt

Phase	Period
1	late MB II C
2	MB II C
3	MB II B
4	MB II A
5	early MB II A
6	late EB IV

Early Bronze IV and early Middle Bronze II A ceramics both occur in Phase 5. Unmixed Early Bronze IV deposition (Phase 6) was found in a limited area toward the center of the *tell*. This stratum was leveled for the subsequent construction of a small shrine in Phase 5 (early MB II A) that was the first in a developmental sequence of four mudbrick temples (phases 5–2) (see Falconer and Magness-Gardiner in press). The latest of these is a small version of the 'fortress'-type temples known at Shechem (Wright 1965: FIGS. 41, 48), Megiddo (Loud 1948: 103, FIG. 247), Hazor (Yadin 1972: 75–79), in Syria (e.g., Ebla Temple D [Matthiae 1981: 130–132]), and in the eastern

[1] This discussion follows the redefinition of 'Early Bronze IV' by Lapp (1970), Oren (1973), Dever (1980) and Richard (1980), for example, as the non-urban archaeological interval, ca. 2300–2000 BC, equivalent to Albright's (e.g., 1966) 'Early Bronze IV' and 'Middle Bronze I,' or Kenyon's (e.g. 1965) 'Intermediate EB-MB.' 'Middle Bronze II,' traditionally denoting the time period ca. 2000–1500 BC, has not been redefined here.

[2] On behalf of the staff of the Tell el-Hayyāt Project, the author thanks Dr. Adnan Hadidi, Director-General of the Department of Antiquities of Jordan, and Dr. David McCreery, Director of the American Center of Oriental Research, for the help and hospitality that made these excavations possible. The Tell el-Hayyāt Project has been funded by the National Endowment for the Humanities, the National Geographic Society, the Wenner-Gren Foundation for Anthropological Research, the University of Arizona Foundation, the Endowment for Biblical Research, and the Department of Anthropology, University of Arizona.

Nile Delta (e.g., at Tell el Dab'a [Bietak 1979: 247–253]). Middle and Late Bronze Age village temples in the Jordan Valley similar to those at Hayyāt have been excavated at Tell Kittan (Eisenberg 1977), and possibly are illustrated by Building C at Kfar Rupin (Gophna 1979: 29–30).

Domestic architecture was absent in the excavated exposures of phases 6 and 5 at Hayyāt; a temple enclosure wall was constructed in Phase 5 and rebuilt in tandem with each new temple (phases 5–2). Single- and multiple-room houses, walled courtyards, and alleyways outside the temple compound characterized the settlement in phases 4 through 2. Stone wall foundations and pebbled floors were isolated remnants of the Late Middle Bronze II C (Phase 1) village. This uppermost stratum has been disturbed considerably by Byzantine pits and the activities of modern farmers.

The sedentary nature of the Middle Bronze Age farmers at Tell el-Hayyāt is indicated by their substantial domestic and temple architecture, their use of plants requiring relatively long-term cultivation (e.g., grapes, olives; Fall 1983), and by the significant role of non-herding livestock in their animal husbandry (e.g., pigs; Metzger 1983a; 1983b; 1984). The nature of Hayyāt's Early Bronze IV settlement is less clear. However, the evidence from two weeks of excavation in 1985 at Tell Abu en-Ni'āj (North), 1.5 kilometers southwest of Hayyāt, provides supplementary information on Early Bronze IV village life. Abu en-Ni'āj (see Ibrahim, Sauer and Yassine 1975: 49, 51; site 64) contains 2.5 meters of cultural deposition with three superimposed phases of mudbrick domestic architecture.

The lower phases at Ni'āj were investigated in two deep soundings, while the upper phase was excavated in three broader exposures totaling 160 square meters. The cultural debris excavated from Abu en-Ni'āj is solely Early Bronze IV; abundant material from the uppermost phase displays similarities to the ceramic and faunal collections from Tell el-Hayyāt. The pottery assemblages from Hayyāt's Phase 6 and Ni'āj's upper phase include identical vessel forms and decorative motifs, suggesting a chronological overlap between the last occupation at Ni'āj and the first at Hayyāt. The faunal assemblage for Ni'āj's upper phase reflects sedentary agriculture with a reliance on sheep, goat, cattle, and pig similar to that of Middle Bronze Age Tell el-Hayyāt (phases 5–2) (Metzger n.d.).

Data and Methods of Analysis

Neutron activation analysis[3] of pottery excavated at Tell el-Hayyāt and Tell Abu en-Ni'āj, and from excavations and surface collections at neighboring Jordan Valley sites, elucidates economic ties between rural and urban Bronze Age communities. These data permit one to hypothesize the role of small villages in pottery production and exchange.

Excavation of the south slope at Tell el-Hayyāt revealed an MB II A (Phase 4) pottery kiln (FIGS. 1 and 2; also see Falconer and Magness-Gardiner 1984: 54–55; 1983a: Pl. VI, 2; Pl. VII, 1).[4] Ceramic manufacturing debris (e.g., wasters, ceramic slag, unfired tempered potting clay) was found in various excavated areas on the south and west slopes, and in and around the temple enclosures. However, it occurred in greatest abundance around the kiln. This evidence of pottery manufacturing provides a direct means of inferring patterns of production and exchange by focusing on the kinds of pottery made at village sites like Tell el-Hayyāt and Tell Abu en-Ni'āj.

An analysis of Early Bronze IV ceramic production and distribution includes samples from Tell el-Hayyāt, Tell Abu en-Ni'āj, Khirbet el-Hammeh, Dhahret Umm el-Marār, and Tell Umm Ḥammād. The Middle Bronze II A analysis uses samples

1. Tell el-Hayyāt pottery kiln, Phase 4 (MB II A), Area A. Facing northeast. Photo by J. Kline.

2. Tell el-Hayyāt pottery kiln sectioned longitudinally. Facing southwest. Photo by S. Falconer.

[3] See the discussions of neutron activation analysis as applied in archaeology in Perlman and Asaro (1969), Harbottle (1976), and Bishop, Rands and Holley (1982), for example.

[4] The original dating of the Tell el-Hayyāt kiln to Phase 5 (Falconer and Magness-Gardiner 1983a: 92) has been revised to Phase 4.

from Hayyāt, Tell el-Arbaʿīn, Ṭabaqat Faḥl (ancient Pella), and Tell es-Saʿīdiyyeh (see FIG. 3).[5] The following tables provide a breakdown of the pottery samples by site and vessel type.

Early Bronze IV sites and pottery samples

Site	Site Size (ha.)	Cooking Pots	Jars	Fine Ware
Hayyāt	<0.5	5	5	3
Niʿāj	2.5	2	4	3
Hammeh	2.5	–	6	1
Marār	1.0	2	5	2
Hammād	*	2	4	2

* Most Umm Ḥammād samples (seven of eight) come from a 2.0 hectare component of Tell Umm Ḥammād el-Gharbi, part of the overall Early Bronze IV settlement estimated at 44.75 hectares (Helms 1986).

Middle Bronze II A pottery samples

Site	Site Size (ha.)	Cooking Pots	Jars	Fine Ware
Hayyāt	0.5	4	3	3
Arbaʿīn	1.5	—	3	3
Pella	7.0	—	5	1
Saʿīdiyyeh	8.0	1	2	3

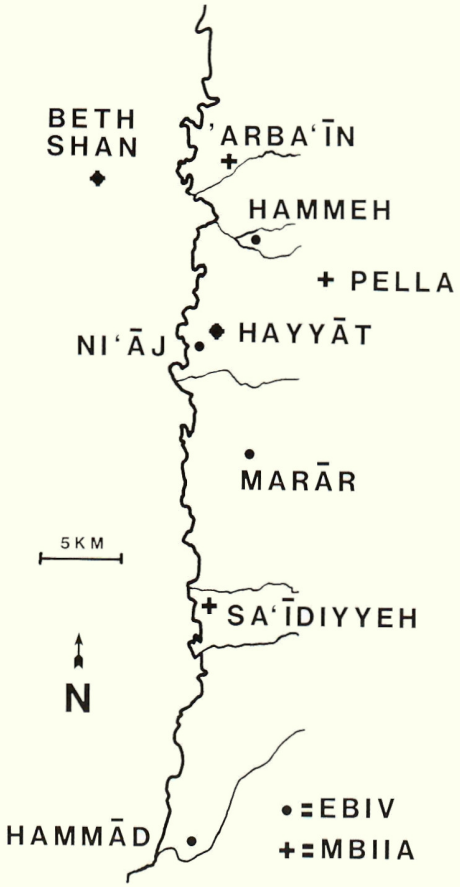
Both analyses incorporate ten clay and waster samples excavated at Tell el-Hayyāt. All samples from Tell Abu en-Niʿāj are from its upper phase. The following table indicates the number of samples from Hayyāt by phase and sample type.

Analyzed samples from Tell El-Hayyāt

Phase	Clays/ Wasters	EB IV Pottery	MB II A Pottery
2	3	—	—
3	1	—	1
4	5	—	9
5	1	5	—
6	—	8	—

Three vessel types are analyzed from each of the two time periods. Coarse ware cooking pots provide likely candidates for local manufacture. Early Bronze IV samples include everted rim versions (e.g., FIG. 4, no. 1) from Hayyāt, Niʿāj and Marār, plus holemouth specimens (e.g., FIG. 4, no. 2) from Marār and Ḥammād. Middle Bronze II A examples from Hayyāt are of the straight sided variety (e.g., FIG. 4, no. 11), and the lone comparative specimen is one everted rim from Saʿīdiyyeh (FIG. 4, no. 3). Fine ware vessels, possibly manufactured for exchange, include Early Bronze IV cups, both trickle-

3. Jordan Valley study area. Beth Shan is included only as a landmark.



painted and unpainted (e.g., FIG. 4, nos. 4, 5), and Middle Bronze II A carinated bowls (e.g., FIG. 4, no. 6), and a double handled juglet from Tell es-Saʿīdiyyeh (not illustrated). Large jars, represented by Early Bronze IV ledge handles (e.g., FIG. 4, no. 8), Early Bronze IV everted and holemouth rims (e.g., FIG. 4 nos. 9, 10), and Middle Bronze II A rims (e.g., FIG. 4, no. 7), were the most abundant vessels in the Jordan Valley surface collections. Storejars in both periods may have been transported from sites of manufacture to sites of deposition through exchange of the commodities they contained.

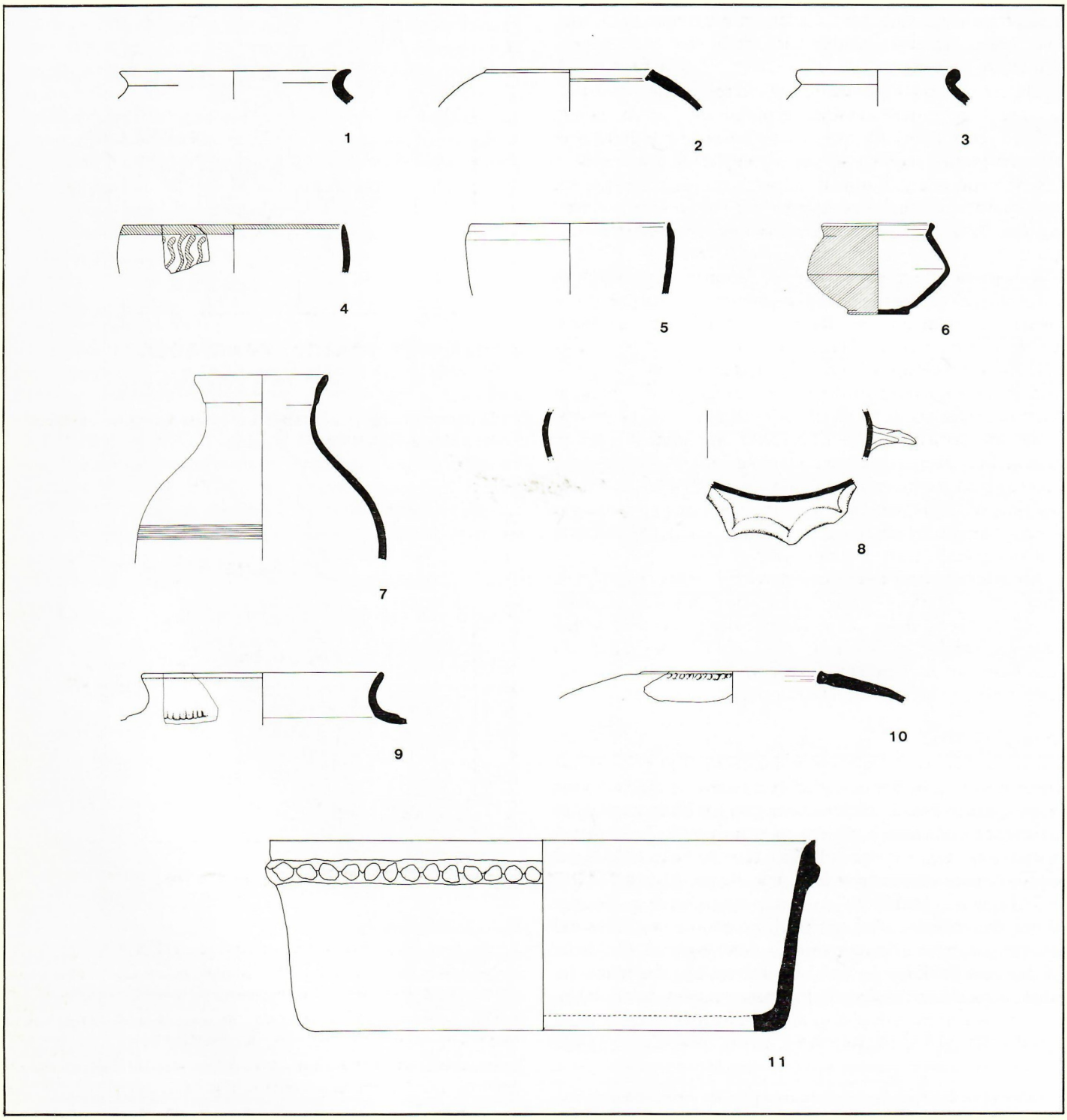
The concentrations of eleven trace element nuclides[6] were calculated for each of the clay and pottery samples using neutron activation analysis.[7] The nuclide concentrations in each

[5] The author thanks S. W. Helms and A. V. G. Betts for samples from Tell Umm Ḥammād, R. H. Smith for samples from Pella, D. Petocz and A. W. McNicoll for samples from the Wadi Hammeh not yet incorporated into this study, M. Ibrahim, J. Sauer and K. Yassine for Jordan Valley Survey samples from Khirbet el-Hammeh, Dhahret Umm el-Marār and Tell el-Arbaʿīn. Special thanks go to R. Erskine for expediting the loans from the Jordan Valley Survey collections. The 1985 staff of the Tell el-Hayyāt Project collected further pottery samples from Khirbet el-Hammeh, Pella and Tell es-Saʿīdiyyeh. Site size estimates were made by the author. Transliteration of Arabic site names follows Ibrahim, Sauer and Yassine (1976).

[6] Sc, Cr, Zn, Rb, Cs, Sm, Eu, Yb, Lu, Ta, Th.

[7] All samples were prepared in the Laboratory of Traditional Technology, Department of Anthropology, University of Arizona. The samples were irradiated in the TRIGA research reactor, Department of Nuclear Engineering, University of Arizona. The irradiated samples were counted, and trace element concentrations calculated, by the author in the Gamma Ray Analysis Facility, Lunar and Planetary Laboratory, Department of Planetary Sciences, University of Arizona. This analysis was funded by the Educational Fund for Archaeology, Department of Anthropology, University of Arizona, by a Grant-in-Aid of Research from Sigma Xi, the Scientific Research Society, and by a research assistantship in the Laboratory of Traditional Technology. The Department of Nuclear Engineering provided additional financial consideration for the irradition expenses. Sincere thanks go to M. B. Schiffer, Director of the Laboratory of Traditional Technology, to G. W. Nelson (Director) and H. J. Doane at the TRIGA reactor, and to W. V. Boynton (Director), D. Hill and K. Sandford of the Gamma Ray Analysis Facility for their abundant aid and encouragement.

4. EB IV and MB II A pottery types. Nos. 1, 4, 6, 7, 11 from Hayyāt, nos. 2, 5 from Umm Ḥammād el-Gharbi, no. 3 from Sa'īdiyyeh, nos. 8, 9 from Marār, no. 10 from Umm Ḥammād esh-Sharqi. Scale 1:5. Drawings by B. Byrd, B. Alpert, S. Falconer.



data set, expressed in parts per million, were standardized to Z-scores for centroid-linkage cluster analysis of cases using Euclidean distance as a measure of similarity (Engleman 1983). The cluster analyses measured relative similarities between clays and pots, permitting the grouping of pottery samples made from clays with very similar trace element signatures. The similar signatures within each group are hypothesized to indicate a common clay source and site of manufacture.

Cluster analysis is a heuristic method for creating classifications such as pottery manufacturing groups (see Anderberg 1973; Everitt 1974). Statistical assessment of the differences between groups requires use of a complementary analysis.[8] Discriminant analysis provides a multivariate technique for distinguishing mutually exclusive groups of samples and testing the statistical significance of differences between these groups[9] (Lachenbruch 1975; Morrison 1976).

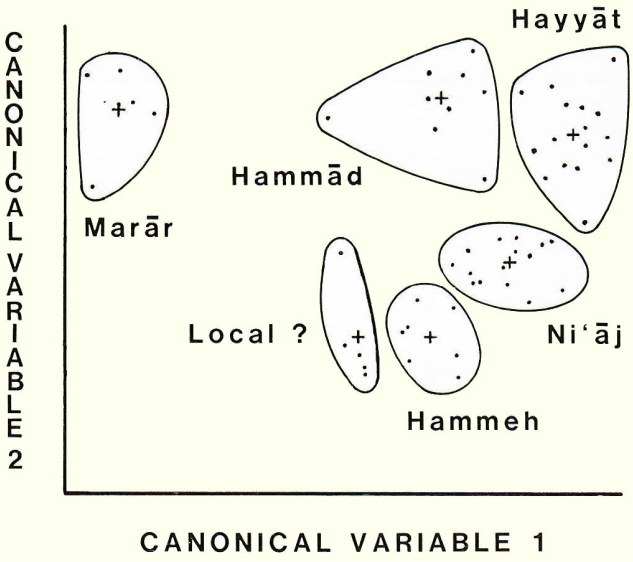
A stepwise discriminant analysis (Jennrich and Sampson 1983) of each data set generated a series of multivariate discriminant functions for classifying each sample into the group it resembles most closely. This provides an independent statistical test of the groups suggested by cluster analysis. Canonical discriminant functions are derived so that the first discriminant function describes as much of the variation between groups in the data set as possible. The second discriminant function accounts for as much of the remaining variation as possible. Subsequent discriminant functions account for decreasing amounts of the remaining variation. The first two canonical discriminant functions account for 96 per cent of the variation in each data set analyzed in this study.

The trace element data for each sample were entered into discriminant functions 1 and 2, producing canonical variables 1 and 2. Using these canonical variables, the distinctions between samples, each with eleven variables, are illustrated two-dimensionally (see FIGS. 5 and 6). The members of each pottery group are circled for the purposes of illustration.

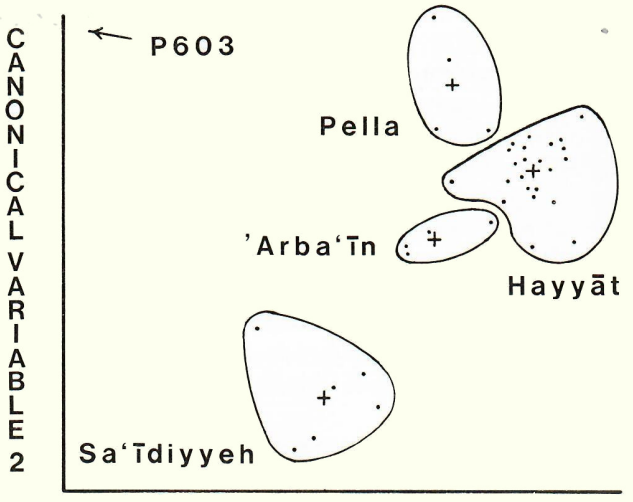
Results

Cluster analysis and stepwise discriminant analysis clearly distinguish groups of pottery produced at several different sites in the Jordan Valley. The means of the six Early Bronze IV groups shown in FIG. 5 differ significantly from one another at the 99 per cent confidence level (i.e. at $P < .01$). The means for the five Middle Bronze II A groups shown in FIG. 6 (sample P603 is the lone member of its group) also differ significantly at the 99 per cent confidence level, except the means for the Hayyāt and Arbaʿīn groups, which differ significantly at the 95 per cent confidence level (i.e. at $P < .05$). The following tables summarize the clay and pottery samples according to their hypothesized site of manufacture as illustrated in FIGS. 5 and 6. The samples are labeled according to the site from which they were excavated or collected: TH = Hayyāt, AN = Niʿāj, KH = Hammeh, DM = Marār, HG = Umm Ḥammād el-Gharbi, HS = Umm Ḥammād esh-Sharqi, S = Saʿīdiyyeh, P = Pella, TA = Arbaʿīn. Cooking pots are indicated by 'C.P.,' and trickle-painted vessels are indicated by '(tp).'

5. Discriminant analysis scatterplot of EB IV samples and groups. Crosses indicate group means.



6. Discriminant analysis scatterplot of MB II A samples and groups. Crosses indicate group means.



It is hypothesized that clays and manufacturing debris provide trace element profiles for potting clays used at the site from which they were excavated. The Hayyāt clays and wasters group with one another and with many of the pottery samples from Hayyāt, providing an indication of the variety

[8] See Christenson and Read (1977) and Aldenderfer and Blashfield (1978) for a lively exchange on the strengths and limitations of cluster analysis in archaeology.

[9] The stepwise discriminant analysis used here calculates an F-statistic in pairwise tests of differences between group means.

Early Bronze IV pottery groups (n = 57)

1. Hayyāt	2. Ni'āj	3. Hammeh	4. Marār	5. Hammād	6. Local?
4 TH Clays	1 AN Clay	4 KH Jars	4 DM Jars	2 HG C.P.'s	1 DM C.P.
6 TH Wasters	2 AN C.P.'s	1 TH Jar	1 HS Jar	3 HG Jars	1 DM Jar
5 TH C.P.'s	2 AN Jars	1 AN Jar		2 HG Cups	1 DM Cup
1 TH Jar	2 AN Cups (1 tp)	1 AN Cup (tp)		1 DM C.P.	1 AN Jar
	2 TH Jars (1 tp)			1 TH Jar	1 KH Jar
	1 KH Jar				
	3 TH Cups (3 tp)				
	1 KH Cup				
	1 DM Cup (tp)				

Middle Bronze II A pottery groups (n = 38)

7. Hayyāt	8. Sa'īdiyyeh	9. Pella?	10. Arba'īn?	11. Exotic
4 TH Clays	1 S C.P.	2 P Jars	2 TA Bowls	1 P Jar
6 TH Wasters	1 S Jar	2 TH Bowls	1 P Bowl	
4 TH C.P.'s	2 S Bowls		1 S Jar	
3 TH Jars	1 S Double-handled juglet			
1 TH Bowl				
1 P Jar	1 P Jar			
3 TA Jars				
1 TA Bowl				

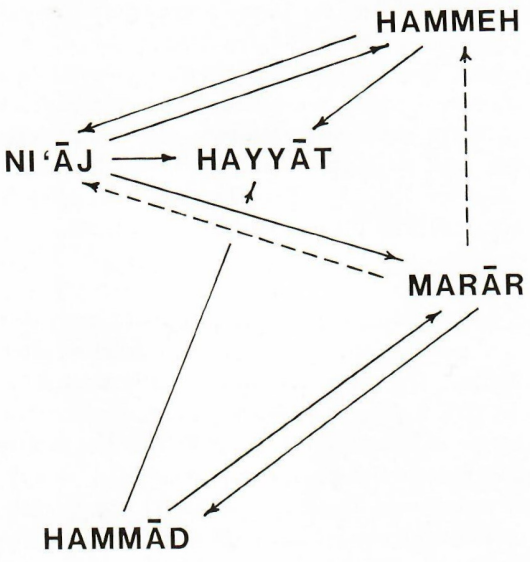
of vessels produced there (groups 1 and 7). The clay sample from Tell Abu en-Ni'āj helps identify the array of pottery probably manufactured there (Group 2). If clays or wasters are not included in a pottery group, the site of manufacture is inferred from the site that provides most of the constituent samples in a group (e.g., groups 3, 4, 5, 8). The small sizes and lack of a prominent contributing site in groups 6, 9 and 10 make identification of these manufacturing sources less certain, hence the question marks. These analyses suggest that coarse ware cooking pots provide good trace element fingerprints for local potting clays. Fifteen of the sixteen cooking pots conform to a pattern in which samples from the same site cluster very closely with one another and with other pottery from the same site.

Patterns of local pottery manufacture and exchange are reconstructed by connecting the hypothesized site of manufacture with the known site of deposition for each sample (see FIGS. 7 and 8).[10] The use life of any ceramic vessel may include several episodes of transport between its manufacture and its incorporation into the archaeological record. Nonetheless, these economic communications, however indirect, exemplify the varying contributions of villages to the urbanized and non-urbanized Bronze Age economies of the Jordan Valley.

Discussion

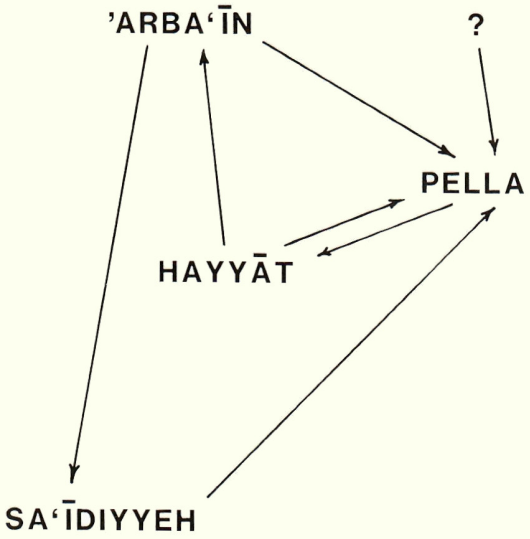
The Early Bronze IV occupants of Tell el-Hayyāt produced pottery, primarily cooking pots, and received pottery from other sites, particularly jars and fine ware from Abu en-Ni'āj. Tell Abu en-Ni'āj distributed jars (and their contents?) and cups (most of them trickle-painted) to three of the four comparative sites considered here. The possibility of large scale production of trickle-painted pottery at Tell Abu en-Ni'āj may be in keeping with that proposed for nearby Tell Artal (Hess 1984). However, it is clear that at least one additional site manufactured trickle-painted vessels (see Group 3 from Khirbet el-Hammeh), and that the potters at Abu en-Ni'āj produced

7. EB IV pottery exchange pattern. Dashed lines indicate exchange if Group 6 relates to Dhahret Umm el-Marār.



[10] FIGURE 7 illustrates the possibility that Group 6 may have been produced at Dhahret Umm el-Marār, although this would have required the use of two very distinct types of potting clays at Marār (see FIG. 5). Group 6 could relate to an unidentified source.

8. MB II A pottery exchange pattern.



a variety of other vessel types. Therefore, we should be cautious in inferring highly specialized production of trickle-painted fine ware at a centralized locale (cf. Hess 1984: 57).[11]

Production of pottery at Khirbet el-Hammeh and Dhahret Umm el-Marār is indicated by tight clusters of storejars from those sites, while production at Tell Umm Ḥammād is defined by a cluster of seven samples from that site. Interestingly, one jar from Tell el-Hayyāt may have been made at Umm Ḥammād, suggesting exchange over a distance of 30 kilometers.

The potters at Tell el-Hayyāt produced all three Middle Bronze II A vessel types, and distributed jars and well-crafted carinated bowls to other local communities. Group 7 clearly ties Hayyāt with Tell el-Arba'īn, and suggests exchange with Pella. The samples analyzed from Pella reflect a variety of production sources, including all three comparative Middle Bronze Age sites and an unidentified, but very distinct, manufacturing site represented by jar sample P603. This sample is plotted far from the other MB II A samples in FIG. 6, and its source is indicated by a question mark in FIG. 8. Tell es-Sa'īdiyyeh is indicated as a manufacturing site by Group 8, which includes one jar distributed to Pella.

Groups 9 and 10 include vessels probably manufactured at Pella and Tell el-Arba'īn, respectively. The identification of these manufacturing groups is hindered by their small sizes and the paucity of Middle Bronze II A cooking pot samples. However, the best working hypothesis suggests that Tell el-Hayyāt was receiving bowls from Pella, and that Arba'īn was engaged in exchange with Pella and possibly with Tell es-Sa'īdiyyeh, over 25 kilometers to the south.

The Early Bronze IV analysis describes a network of exchange in which the smallest sites (Hayyāt, and perhaps Marār, if Group 6 does not relate to it) are limited partners, primarily producing utilitarian pottery for their own use. These small pottery-consuming sites contrast with larger villages, best exemplified in this study by Tell Abu en-Ni'āj, which produced pottery for on-site use and distribution to any array of neighboring communities.

In Middle Bronze II A this situation is reversed. Tell el-Hayyāt, still only a very small village, produced a variety of vessel types for use at home and exchange with other villages (e.g., Arba'īn) and larger towns (e.g., Pella). The most interesting MB II A pottery-consuming site is Pella, where vessels produced at small (Hayyāt, Arba'īn), large (Sa'īdiyyeh), and possibly distant sites were deposited.

Conclusions

Archaeological interpretations of second millennium urbanism in Palestine and Transjordan have long been based on the severe disjunction of Early Bronze IV and Middle Bronze II settlement patterns and material culture (Mazar 1968; Kenyon 1973; Dever 1976; Gerstenblith 1983). This perspective can be augmented in several respects based on insights provided by neutron activation analysis in conjunction with recently published excavations and surveys.

Village communities can be figured into prevailing interpretations of Early Bronze IV 'pastoralized' society that emphasize seasonal encampments and cemeteries (e.g., Prag 1974; Dever 1980). Early Bronze IV sedentary settlements were suggested by the apparently isolated examples of Khirbet Ader (Cleveland 1960), Khirbet Iskander (Parr 1960), Arô'er (Olavarri 1965; 1969) and Iktanu (Prag 1974). Current excavations at Bâb edh-Dhrâ' (Rast and Schaub 1978; 1980; 1981; 1984), Khirbet Iskander (Richard and Boraas 1984), Tell Umm Ḥammād (Helms 1984; 1986), Tell el-Hayyāt, and Tell Abu en-Ni'āj demonstrate that these communities formed a substantial sedentary component of Early Bronze IV society along the eastern flank of the Jordan Valley. This settlement network included very small sites (e.g., Tell el-Hayyāt), moderately sized villages (e.g., Khirbet Iskander and Tell Abu en-Ni'āj), and large multi-component communities (e.g., Tell Umm Ḥammād).

Similarly, regional excavation projects suggest the economic importance of villages in the development of urbanized society, as seen at the fortified towns of Early Bronze Age Arad (Amiran, *et al.* 1980) and Middle Bronze Age Aphek (Kochavi 1975: 37–38). Recent comilations of survey data (Broshi and Gophna 1984; 1986) suggest that population growth throughout Palestine was characterized by proliferations of small settlements in both Early Bronze II-III and Middle Bronze II.

As Amiran *et al.* have argued for Arad (1980: 29), and as the discussion above illustrates, our understanding of Bronze Age urbanism requires a perspective from the hinterland. The rural perspective adopted here suggests that this urbanizatism was not marked by an inherent dependence of outlying sites on urban centers. The Early Bronze IV patterns of exchange inferred above may involve some hierarchical dependence of small settlements (e.g., Hayyāt, possibly Marār)

[11] Note also that six of the seven trickle-painted vessels analyzed in this study come from Ni'āj or the nearby site of Hayyāt.

on larger ones. However, the Middle Bronze II patterns of exchange suggest the active participation of small sites (e.g., Hayyāt, Arbaʿīn) in the production of pottery and its distribution to larger urban communities. In this manner, the social transformation of Palestine and Transjordan in the second millennium BC may have involved the superimposition of fortified towns on a 'ruralized' landscape of economically diversified villages.[12]

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[12] The author benefited from discussions of this research with W. G. Dever, K. Kvamme and N. Yoffee. Critiques of this paper were provided by P. L. Fall, B. Magness-Gardiner, M. B. Schiffer and J. Skibo.

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