

## **Ethno-Archaeological Evidence of Stylistic Variation of Small-Scale Pottery Production Societies in Northern Jordan**

**Nabil Ali \***

### **Abstract**

This ethno archaeological study analyses pottery decorative techniques on a regional scale. The data base derives from small scale pottery production societies in northern Jordan, and the intent is to test the extent to which stylistic variations are eliminated by either ecological factors or socio-cultural ones. Besides intensity of social interaction at the village scale, this study shows the importance of economic practices and their spatial requirements as an explanation for stylistic similarities among villages, and the role of economic competition and idiosyncratic behavior as causes of stylistic variation in small scale pottery production societies.

**Keywords:** Ethnoarchaeology; Pottery production; Stylistic variation; Styles pattern

### **Introduction**

Information on patterns of stylistic variation in material culture can be employed to reach two main goals. First, to construct space-time frameworks by which data on stylistic sequences can be ordered in time and stylistic distributions identified in space. The second and more controversial goal is to explain the causes of stylistic variation encoded in design motifs (Plog 1983:125). Several ethno archaeological studies have been carried out that enrich our understanding of the second goal. They examined the causal relationship between stylistic variation, in terms of decoration, technique or form, and cultural aspects that generate these variations either at the site scale or regional scale. Studies at the site scale aim to discover the correlation between these variations and social organization in terms of residence groups, marriage networks, motor skills, and learning patterns. (Arnold 1985; Longacre 1991; Graves 1991, 1994). Regional scale studies attempt

---

\* Institute of Archeology, The University of Jordan, Amman Jordan.

to correlate stylistic variation and cultural aspects such as social group cohesion and individual identity (Wiessner 1983, 1985), expressions of world view (David *et al.* 1988), social boundaries and how these boundaries are affected by factors like social and environmental stress (Hodder 1982, Stark 2003). Regional studies of stylistic variation replaced the *simple* correlation between stylistic distributions across space (i.e., the ‘culture area’ approach) with one that seeks to understand the causes that generate these distributions.

In this paper I will use pottery decoration, as eroded by Near Eastern archaeologists, to evaluate the nature of stylistic variation and the distribution of stylistic elements across space at a regional scale. The objective is to discover the extent to which by stylistic variations are eliminated by either ecological or socio-cultural factors in small-scale pottery producing societies. That is, to define the roles of (1) ecological (e.g., topography, raw material availability) that can generate material culture distributions (2) social factors (e.g., intergroup conflict), and (3) group or individual identity consciousness. These questions have been frequently addressed by both archaeologists and ethnoarchaeologists, but unique features of this study are the small regional scale ( $\leq 240 \text{ km}^2$ ) and the limited volume of production ( $\leq 15$  pots per season).

This field study of pottery decorative style variation was carried out in Jordan on a village-by-village basis within a small region. The pottery repertoires of four villages form the data base on which decorative schema and technique have been analyzed.

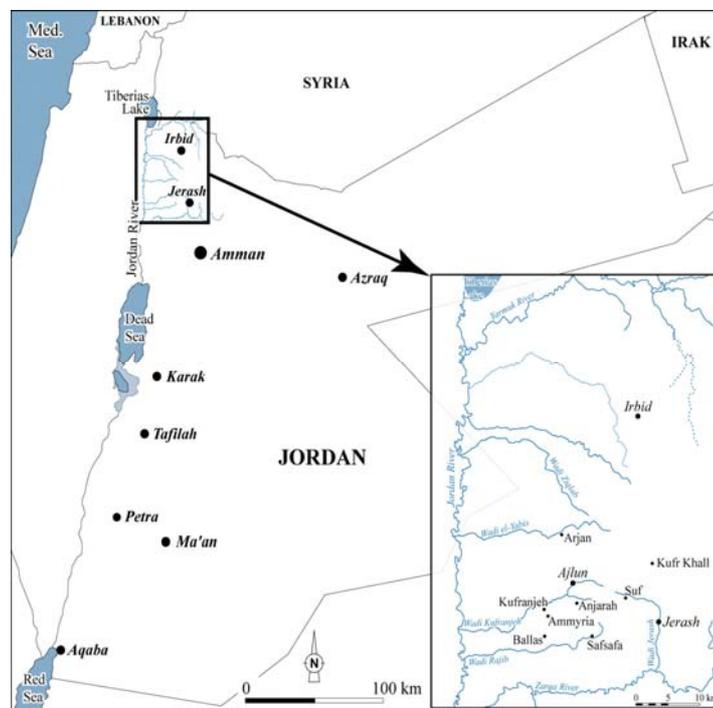
### **1- Data presentation**

During two seasons of ethno archaeological research in northern Jordan (Summer 1999 and 2000), I collected data on pottery production and use (Ali 2005). The purpose was to gather information on technological aspects of production, their social context and their correlation with the local economy. Pottery making in Jordan is on a small-scale, and is practiced seasonally, mainly during the summer for only three to four months a year. It is not a full time activity, even in the summer, because the work is interrupted by agricultural pursuits, mainly summer cultivation.

With respect to the social context of production, pottery making in Jordan is a female activity. Potters are typically women older than 50, and pottery making is not a group activity. Each potter works alone. Sometimes household members help in clay preparation and decoration, but forming is done by the individual potter. Sons and daughters sometimes aid in painting.

Pottery in all villages is produced at a household level, rather than in specialized workshops. The scale of production does not exceed 15 vessels per season and includes different forms such as water jars (mainly), cooking pots, platters and bowls. This number is subject to fluctuations. Some potters produce very little in a given year (1-3) vessels (during a visit in 2006). Only water jars (mostly), bowls, and- less frequently- platters are decorated.

Below I will focus only on decorative painted pottery observed in four villages in Jordan (Fig. 1). Manufacturing techniques, motives, frequency and distribution of motives, variation in the practices of each motif were recorded. These data will be presented first at the village scale and then comparisons between villages will be made.



**Fig. (1): Map showing the location of villages mentioned in text.**

### 1- Decorative Techniques

Data on types of painted pottery was collected and the following decorative techniques were recorded. These include:

1- *Pigment*: covers external surface of a pot with slip of light red or brown. Vegetal and metallic pigments are used: organic matter derived from plant roots such as oak trees, or inorganic colorants derived from iron-rich sediments or *terra rossa soils*. Organic matter is boiled in water and, when cooled, it is applied at the pot surface by dipping a textile in the suspension. The iron rich materials are prepared by suspending them in water and the suspension is applied in the same way.

2- *Painting*: entails the use of iron-rich sediments by dissolving them in water and using a carved wood en baton or rolled textile to create a specific design.

3- *Plastic decoration*: extra clay modeled on the vessel surface. Usually it entails rope decoration.

4- *Pinching*: the rim is subjected to pinching by twisting the clay between the fingers. Otherwise, the clay rope is pinched using either fingers or the edge of a scraper.

All the preceding decorative techniques are applied before firing. However, some of them are applied at the leather-hard stage, and others (e.g., No. 3) are applied when the clay is still plastic. No special tools are required. Pigment is usually applied at the pot surface by hand. Painting is typically done with either small thin wood en objects, or a rolled textile. The same potter can use these two methods for painting.

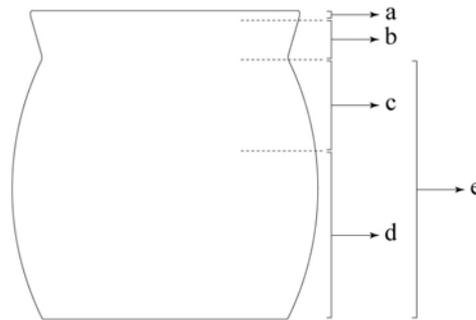
### 2- Analysis of Decorative Structure

The analysis of decorative structure is based on (1) spatial division, (2) design configuration, and (3) design elements (Friedrich 1970: 333, Rice 1987: 248-249). These three analytical aspects can be used to identify painting stages and design layout. Thus, both processes and results of painting can be studied. The process of painting consists of dividing the pot's surface into bounded areas and filling the areas defined with designs. This spatial division of the pot's surface is considered

to represent the highest level in the hierarchical organization of structure analysis (Friedrich 1970: 333-334).

### *Spatial Division of the Surface*

A pot is typically divided into (1) the rim and the bottom, which delimits the painted surface (Fig. 2), (2) the interior subdivided into the neck (Fig. 2: b), the shoulders, and the area between the shoulder and the bottom (Fig. 2: c, d). The surface is viewed as a spatial unit that has a beginning and an end. The beginning is the rim while the end is the bottom. The area between these two parts is conceptualized spatially in different ways by different potters.



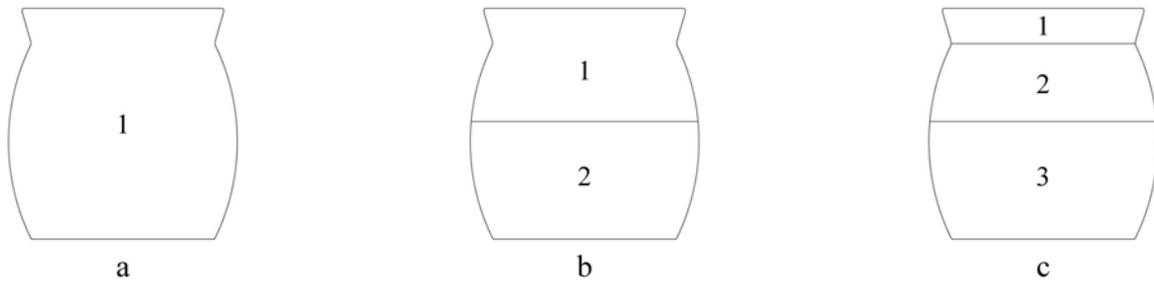
**Fig. 2: Schematic drawing of a pot showing the spatial division of its surface.**

The potters usually divide the surface horizontally, and this can be used to identify the way the surface is treated. These divisions include:

1- The area between the rim and the bottom is conceptualized as a single spatial unit. In this case, no horizontal division is made between the sub-segments of the pot (Fig 3: a).

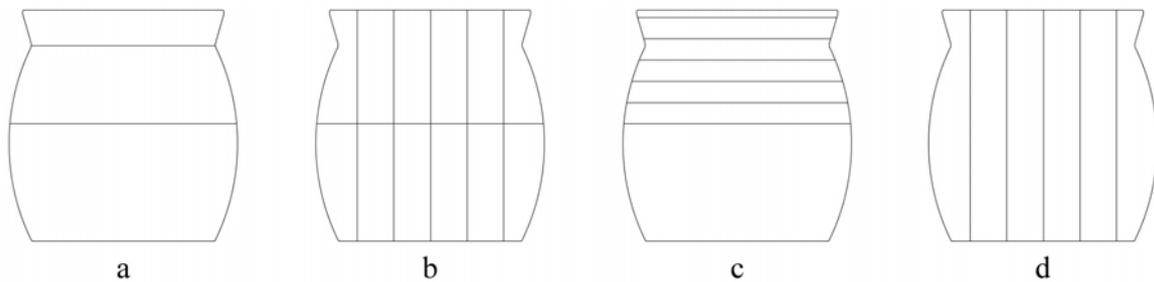
2- The area between the rim and the bottom is divided horizontally into two parts: the lower and the upper segments (Fig. 3: b). Interestingly, these two parts can be designed differently by either painting and pigment or painting on both segments.

3- Segmentation of the pot's surface into three parts: the more complex spatial division of the pot surface including the rim and neck, the shoulder, and the interior between the shoulder and bottom (Fig. 3: c).



**Fig. 3: The different methods of pot conceptualization.**

After a general spatial division of the pot's surface is made, the next step in painting is the division of each segment into smaller ones. This entails the spatial division of each segment into fields bordered with lines and filled with designs. These lines are drawn either horizontally (Fig. 4: a and c) or vertically (Fig. 4: b). Sometimes lines are not used and, the surface of the pot is viewed as a continuous sphere (Fig. 4: d). However, the surface is always prepared to be filled with design elements in this configuration.



**Fig. 4: The division of each segments of a pot's surface into smaller units for painting.**

### ***Design Elements and Configurations***

Before presenting the analysis of design elements and layouts, configurations, it is important to address three techniques (pinching, plastic decoration and choices to pigment), because they differ by painting technique and the intended design to be achieved. Hence they will be presented separately and then the analysis of painting technique will be described.

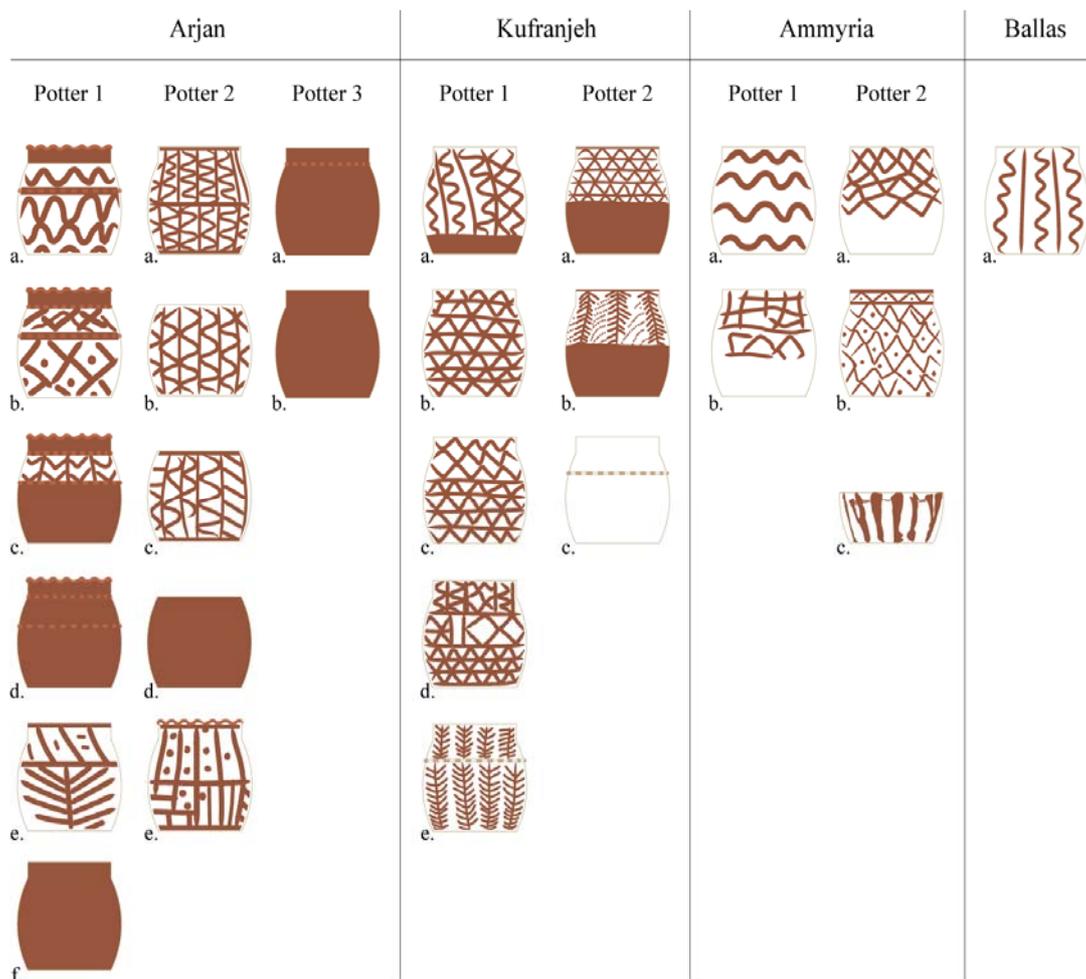
1- Pigment: no intended decorative schema is achieved by using pigment to cover the pot's surface. The result is a surface that is either light red or brown in color. Pigment is used to cover the whole surface of the pot between either the shoulder and the bottom, or the rim. Sometimes pigment is used to divide the pot into two spatial segments (usually the bottom part) and the second part filled with design.

2- Plastic decoration: clay rope appliqué at the neck of a jar or at its shoulder. This appliqué rope is then pinched with the fingers or decorated with an imprint made by the edge of a wooden scraper. Plastic decoration has not been used to form schematic shapes.

3- Pinching: the rim is mainly subjected to twisting between the fingers when the clay in the plastic stage. This technique has been observed only on the rims.

Painted designs within the spatial divisions (see above) can be classified into two levels (Friedrich 1970: 335). The first level represents design elements and the second one design configurations. Design elements refer to the "... smallest self-contained unit", while design configuration refers to the "...arrangements of design elements that are of sufficient complexity to fill a spatial division" (Friedrich 1970: 335). From primary elements the potter can create configurations that have different appearance and structure features. These can be called motive units. By motive unit I mean the abstract shape of the performed design (e.g., zigzags, diamonds, pendant triangles, steps, etc.)

Sometimes, the surface exhibits combinations of different primary elements but the result in terms of motive units might be used to differentiate among potters, on the one hand, and to measure the degree of interaction among potters, on the other. However, the so-called secondary design elements have been found to be of less significance to measure the degree of interaction between potters (see below).



**Fig. 5: Comparison between different stylistic performances among potters.**

In sum, the analysis of design structure used here starts from the conceptualization of the pot's surface in terms of spatial divisions, the layout of the frame in which the design will be placed, the identification of the primary elements, their configurations and finally the shape of the motive unit built up by both primary elements and configurations.

### 3- The Practice of Decorative Techniques (Fig. 5)

The technique performance and design structure analysis will form the basis for measuring stylistic variation. The intent is to identify the stylistic similarities and differences among potters operating in the same village and between villages.

## Variation in Decorative Techniques at the Village Scale

At each village, pots can be classified into two main groups: plain pots and decorated pots. I focus here only on the latter, but plain pots can also be differentiated based on their technical surface features (Ali 2005). The design structure of each potter (her style) is analyzed and then compared with that of other potters at the village in order to reveal the stylistic variation among them.

### 1) Arjan

At the village of Arjan, the products of three potters have been analyzed. The four decorative techniques mentioned above have been observed. Differences however, are evident in:

1- The frequency of pigment technique. All decorative pots showed that pigment technique is more often practiced here than elsewhere in the study area. The three potters have the knowledge and skill of this technique (Table 1) and they use either organic or inorganic pigments.

2- Variation in the performance of painting technique: two of the three potters are accustomed to practice painting technique. That is, technique can be considered part of their style. The two potters using this technique differ from each other in the painted design. Differences can be identified with respect to: (a) conceptualization of the pot surface, in terms of spatial divisions. Potter 1 divided the pot's surface into three horizontal segments (Fig. 5), whereas Potter 2 divided the pot's surface into two horizontal segments (Fig. 5), (b) how each spatial segment is divided into smaller ones: Potter 1 marked each small segments by horizontal lines, whereas Potter 2 used vertical lines to define smaller segments, (c) the nature of primary elements: whereas Potter 1 used wavy lines, diamond shapes and their configuration in horizontal patterns, Potter 2 used (>) element and its configurations vertically.

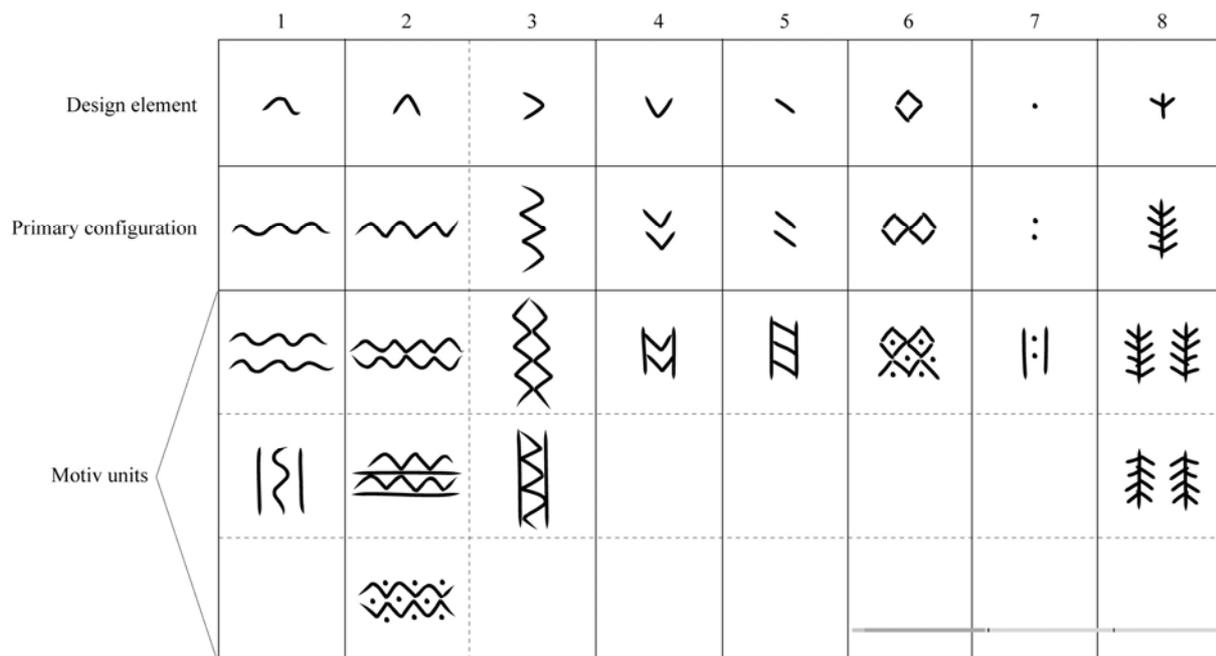
3- Plastic decoration: the use of a clay rope as a decorative element was observed in the products of Potters 1 and 3. None of Potter 2's products were decorated with plastic decoration.

4- Pinching technique: usually applied at the pot's rim. Observed in the products of potter 1 more frequently than in those of the other two potters. The

same type of pot, water jars, was made by all these potters, but Potter 1 did not use the pinching technique.

**Table (1): The frequency of performance of each decorative technique at Arjan.**

<i>Decorative Techniques/ Potter Number</i>	<i>Pigment</i>	<i>Painting</i>	<i>Plastic Decoration</i>	<i>Pinching</i>
<i>Potter 1</i>	Common	Middle	Common	Frequent
<i>Potter 2</i>	Common	Common	Rare	Rare
<i>Potter 3</i>	Common	Rare	Middle	Rare



**Fig. 6: Structural Analysis of Decorative Styles.**

## 2) Kufranjeh

The products of two potters (named Potter 1 and 2) at Kufranjeh were studied. They have in common the practice of two main techniques: pigments (technique 1) and painting (technique 2). Painting is the most common technique (Table 2); however, a combination of painting and pigment was also observed. With respect to painting design there is intensive interaction between the two potters, esp. with regard to craft learning. Both share the same concept of surface spatial division. The surface is divided into two horizontal segments, and each segment is in turn subdivided into horizontal smaller ones bordered by horizontal lines. The main primary elements used are (□ and □) and its configurations. Less frequently, Potter 1 uses vertical wavy lines as a primary element.

**Table 2: The Frequency of Performance of each Decorative Technique at Kufranjeh.**

<i>Decorative Techniques/ Potter Number.</i>	<i>Pigment</i>	<i>Painting</i>	<i>Plastic Decoration</i>	<i>Pinching</i>
<i>Potter 1</i>	Rare	Common	Rare	Absent
<i>Potter 2</i>	Common	Common	Middle	Absent

## 3) Ammyria

Like Kufranjeh, the products of two potters at Ammyria were studied. Only the painting technique has been observed (Table 3). Both potters at Ammyria share the conceptualization of the pot's surface as a single unit. Differences have been observed in the primary elements used to fill the surface. Wavy lines are favored by Potter 1, whereas Potter 2 uses diamond shapes and its configuration as primary decorative elements. No horizontal lines divided the pot's surface. Vertical lines were used by both potters to decorate small pots such as bowls or platters.

**Table 3: The Frequency of Performance of Each Decorative Technique at Ammyria.**

<i>Decorative Techniques/ Potter Number.</i>	<i>Pigment</i>	<i>Painting</i>	<i>Plastic Decoration</i>	<i>Pinching</i>
<i>Potter 1</i>	Rare	Common	Rare	Absent
<i>Potter 2</i>	Rare	Common	Rare	Absent

#### 4) Ballas

The products of a single potter were studied at Ballas. Pottery products were dominated by the painting technique. Painting was used to produce (1) parallel vertical lines with the space in between them filled with irregular zigzag lines, (2) vertical lines inside open forms such as platters and bowls. As in Ammyria, the pot's surface has been conceptualized as a single spatial unit.

In addition to the above mentioned villages, observations were made on the products of one potter at the village of Anjarah. Most of the pots produced were plain; only in a few cases was plastic decoration applied to the pot (especially on water jars).

#### Regional Variation of Decorative Techniques

The above mentioned villages are distributed in the area between wadi el-Yabis (recently el-Rayan) and wadi Rajib (Fig. 1). This area comprises 240 km<sup>2</sup> stretching ca. 15 km from north to the south and 16 km from west to east. The topography of this area is mountainous reaching an altitude of 1000-1200 m above sea level. Besides wadi Rajib and el-Yabis, this area is intersected by the wadi Kufranjuh. The three wadis run from east to west and end in the Jordan Valley.

The spatial distribution of these villages across the area between wadi el-Yabis and Rajib is significant. Just one village is located between wadi el-Yabis and wadi Kufranjuh, whereas the other villages are located between wadi Kufranjuh and Rajib. Thus a natural boundary exists, (wadi Kufranjuh), which generates two village clusters. One cluster consists of Arjan, and the second one consists of Kufranjuh, Ammyria and Ballas. The distance between these villages is also a significant factor in measuring the intensity of interaction among them. The

maximum distance between the villages is between Arjan and Ballas (15 km), and the minimum (2 km) is between Kufranjeh and Ammyria (Table 4).

The content of the study area, the spatial distribution of the villages and the distance between them would be the basis on which stylistic variation can be eliminated. This can be evaluated based on the decorative techniques practiced, and the analysis of design structure. Thus it should be possible to spatially separate the design structures to examine the nature of their segregation.

**Table 4: The Lineal Distance between Different Villages Mentioned in the Text.**

	<i>Arjan</i>	<i>Kufranjeh</i>	<i>Ammyria</i>	<i>Ballas</i>	<i>Anjarah</i>
<i>Arjan</i>	0				
<i>Kufranjeh</i>	11	0			
<i>Ammyria</i>	13	2	0		
<i>Ballas</i>	15	4	2.5	0	
<i>Anjarah</i>	10	6	5	7.5	0

*a) Practices of Decorative Techniques*

Although the study area is ca. 240 km<sup>2</sup>, there are variations in terms of decorative technique. In the area between wadi Kufranjeh and el-Yabis (cluster 1), pigment, painting, plastic and pinching techniques have been documented. However, between wadi Kufranjeh and Rajib (cluster 2) painting, pinching has not been recorded. Moreover, pigment technique is less commonly practiced in cluster 2 than in cluster 1 and has not been used to cover the pot's entire surface. It can also be said that painting is more commonly practiced in cluster 2 than other techniques.

*b) Painting Design Comparison*

We assumed the presence of two clusters separated by natural boundary, wadi Kufranjeh. The stylistic variation between these two clusters will be evaluated based on the design structure discussed above.

1) *The Conceptualization of the Pot's Surface in Terms of Spatial Division.*

The evaluation of this aspect between the villages showed that it ignores the natural boundary. There are similarities between two potters at Arjan and the other potters in terms of the spatial division of the pot's surface. These similarities are expressed in terms of seeing the surface as either consisting of one spatial unit (as at Ammyria and Ballas, and Potters 2 and 3 at Arjan). Furthermore, Potter 2 at Arjan shares a similar concept of surface division with Potters 1 and 2 at Kufranjeh in seeing the surface as consisting of two spatial segments. So at this level of design structure, wadi Kufranjeh cannot be a factor in segregation among potters of Cluster 1 and 2. However noteworthy difference have been observed between Potter 1 at Arjan and the two potters at the same village, and potters in villages beyond the wadi Kufranjeh. The division of the spatial segments into smaller ones reveals segregation between the two clusters. At the broader scale, there is a tendency for horizontal division of the spatial segments at one village of cluster 2, while there is a preference for vertical division of spatial segments in cluster 1. Even Potter 1 at Arjan divided the spatial segments horizontally although they differ from others in cluster 2 with respect to width (>15 cm, and mainly three major smaller segments, by potters in cluster 2; these smaller segments range between 10-15 cm).

So we can conclude that the method of segmentation of the pot's surface into smaller units can be a factor of segregation between the two clusters.

2) *Primary Elements and Element Configurations.*

The primary elements and their configurations transcends village units. The diamond shape occurs in both clusters 1 and 2. But as primary element it has been rendered differently in term of its size and density. In cluster 1 the diamond shape element is drawn with large thick, lines, whereas in cluster 2 (fig.6) it is rendered with small, thin lines. Although, potters use the same element in both clusters, they can be differentiated from one another by how the element is interpreted. Furthermore, the two clusters can be differentiated by the use of different elements such as (□) and (◇) and their configurations from the ones in cluster 1, which is characterized by (>) element.

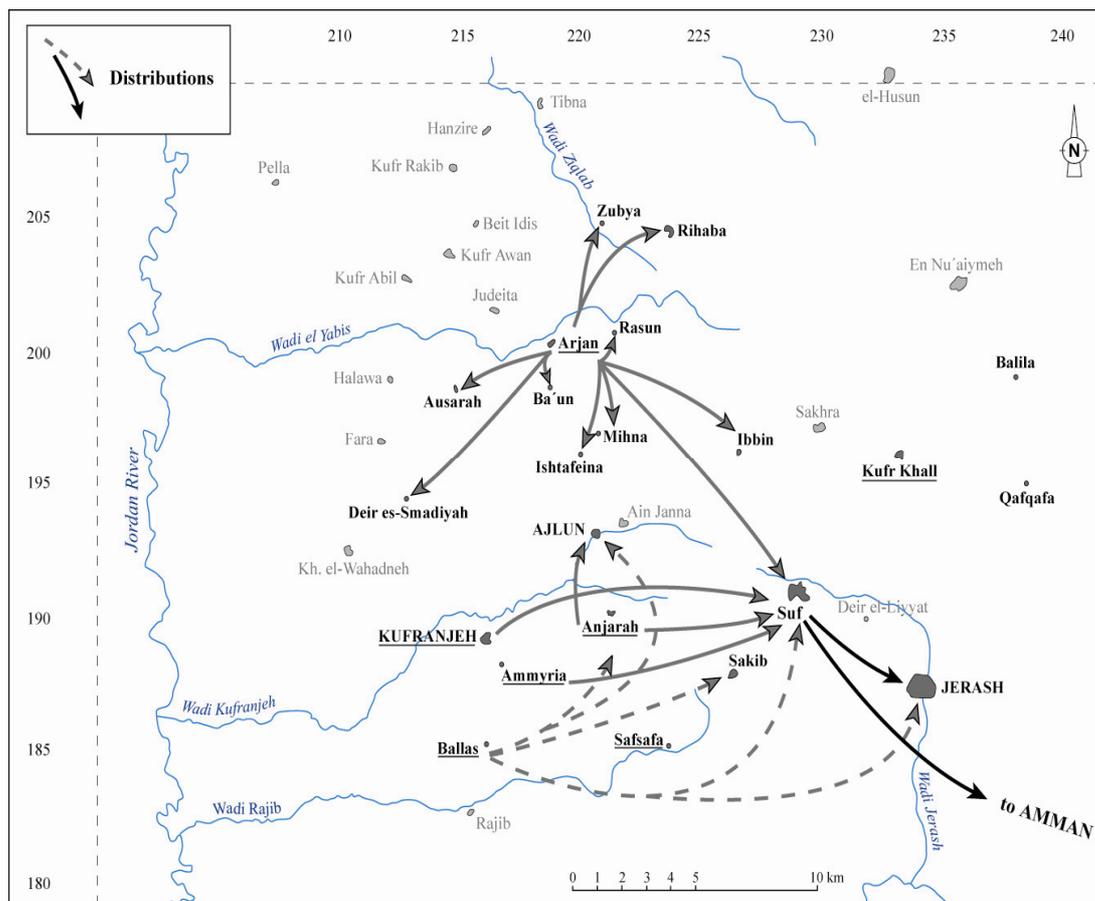
It can be said that primary elements and their configurations can be useful analytical aspects of design structure segregation.

With respect to motive unit comparisons, the two clusters can be clearly separated. Cluster 1 is dominated by large diamond shapes and vertical chevrons, whereas in cluster 2, horizontal chevrons and smaller diamonds prevail.

#### **4 The Spatial Distribution of Decorative Techniques**

Understanding the context of pottery consumption is as important as the context of production especially when we focus on the social dimensions of style. Style distributions can shed light on how style expresses social identity, as a measure of the level of social conflict and of the nature of relationships among different social groups. As mentioned above, pottery production in the study area is small scale and it is practiced at the household level. The context of consumption is either within the village local, or by other nearby villages (Fig. 7). Within-village consumption is less frequent, whereas most of the products are consumed by nearby villages or by middlemen. The mechanism of distribution is of significance here. It consists of direct procurement of the pots from the potters themselves; there is no concept of market to sell the product. Middlemen distribute the pots beyond their loci of production. However, the different modes of procurement did not affect the pots' styles.

A quick look at the distribution map (Fig.7) shows that pots from all villages nearby can be found in one site, the town of Suf. Suf is where most of middlemen reside. Hence at this town one would expect to find a mix of styles. Another finding is that style pots Arjan did not cross the wadi Kufranjuh, which means that the wadi can be regarded as natural border that impeded interaction between the two clusters.



**Fig. 7: The Spatial Distribution of Pottery in Northern Jordan.**

## 6. Discussion

In the pages above, I present the decorative techniques practiced at four villages in north Jordan. These techniques have been discussed in terms of their performance at intra-and inter-village scales, their design structure, and the means by which stylistic variation can be measured. Next, I evaluate the extent to which decorative techniques and performance can shed light on social contexts of production, especially by small scale household potters, and the extent to which stylistic variation can be of social significance at the regional scale.

Evaluation of the concept of style has helped us to understand the messages a style can convey (Wobst 1977, Carr and Neitzel 1995, Wiessner 1983, 1985). Style has been identified as a means of non-verbal communication that encodes messages, among their social group identities (*emblemic* style) or individual

identities (*symbolic style*) (Wiessner 1983: 285, 1985: 161). At the macro-scale of interpretation, stylistic variation can be a measure of the degree and intensity of interaction among social groups or reflect social boundaries. Such boundaries can be reinforced in times of economic or environmental stress (Hodder 1982). At the micro-scale of interpretation, stylistic variation within a social group can convey information about individual identities, class, social learning patterns, and motor habits. In material culture studies, these interpretations have been evaluated mostly through pottery decoration styles. The extent to which decorative styles can be used as non-verbal communication or convey socio-cultural messages has been rejected by some scholars. Deal (1998), for example, has pinpointed the difficulty of using decorative schema for studying the social context of production, especially when the production is small scale. Instead, technological as well as morphological indices are thought to be more informative on social entities or units of production. Clearly we need more studies on small scale societies to evaluate the extent to which style, as decorative schemata, can shed light on social unit cohesion, inter-social unit relations, and individual variation, and explain the causes that generate stylistic variation at the regional scale.

Starting at the micro-scale, it has been shown that potters in Jordan in the same village can produce and use different decorative techniques. More than one style is used by each potter and they cannot be attributed to different production units. At the same time, decorative techniques can be used to classify the decorated pottery assemblage at the village scale and to compare these with other villages. Each technique is interpreted differently and with different levels of know-how and skill. One example from Arjan can explain such a relationship. Painting technique is practiced by two out of three potters because it demands more expertise and hence involves a different set of motor skill than, for example, pigment technique (for on technique as a social phenomenon see Lemonnier 1986, 1993; Gosselain 2000; Gelbert 2000; Pfaffenberger 1992).

There is a positive correlation between learning pattern and decorative technique. Potters learning the craft acquired the decorative technique used in surface decoration and the spatial conceptualization of this surface, and design

structure. The best example in the current study is at the village of Kufranjeh (Potters 1, 2).

One more point is concerned with the relationship between scale of production and decorative painted pottery. As mentioned above, usually each potter produces not more than 10-15 pots per season, and even this number can be reduced to one or two pots. The scale of production affects, to a large extent, the design structure, esp. painting structure. By analyzing the decorative schema of one potter across two seasons we notice variation in the performance of the same decorative schema. There was no standardization of decorative design even by the same potter. However, we can say that there was a general conceptual framework that the potters started from with respect to the concept of decoration. This can be called, after Wiessner (1983), *symbolic* style. However, there is also design structure produced on a single occasion that reflects an individual potter's idiosyncratic style (fig...).

In village-to-village comparisons, stylistic variation reflects both socio-cultural and natural factor. Two main decorative clusters (1 and 2) were identified, by comparison of decorative structures at the level of spatial divisions, design elements, design configurations and motive units. The two clusters are separated by a natural boundary 'the wadi Kufranjeh' which plays a role in limiting the spatial distribution of design structures. This has been exhibited by comparing the painting structure practiced by the potters at Arjan with the ones at Kufranjeh. The wadi Kufranjeh, inhibits social interaction between the two groups. In this case stylistic variation between the two clusters cannot be attributed to social or cultural factors, but rather to natural ones.

To which extent can socio-cultural factors cause stylistic similarities and differences? The stylistic similarity between Kufranjeh and Ammyria is of special interest. These two towns are just 2 km apart. Potters at these two villages do not pertain to the same kinship units. The causes of the similarities are economic ones. Activities like cultivation of cereals, olives or herding require the seasonal occupations of household units nearby the village. The movement of household members opens up the chances of inter-social contact, and the observation of others' pottery products. This is a likely cause of copying and influence of the

decorative designs of the potter from Kufranjeh by the potter of Ammyria. It should be also mentioned that this seasonal movement can spur the adoption of pottery forming techniques (Ali 2005). Thus, economic practices that require spatial movements can affect the degree of social interaction. This factor is of special importance in explaining the stylistic similarities among small scale pottery production societies.

### **Conclusion**

This study has shown some of the difficulties inherent in using decorative schemata as indicators of social group cohesion when we deal with small scale pottery production. It also indicates that individual variation can cause stylistic variation even if pots are produced in the same season. Moreover, this study emphasizes the importance of economic practices requiring movement as a factor in explaining the similarity between potters and did not just categorize the similarities as social a factor in themselves. These conclusions indicate that pottery is not used Jordanian the potters to mark social boundaries (at least in the study area), but that natural boundaries can affect spatial distributions of style. The wok might be of use for stylistic analysis of Neolithic Levantine pottery, because of the similar scale of (household) production, relatively simple stylistic designs and similar economic practices.

### **Acknowledgments**

I would like to thanks Drs. S. Pollock and M. Benz for commenting on the draft of this paper. My special thanks also go on Mrs. C. Ali-Kohlmayer for helping in figures preparations.

## References

- Ali, N. 2005. *The Development of pottery technology from the late sixth to the fifth millennium BC in northern Jordan. Ethno- and archaeological studies: Abu Hamid as a key site*. Oxford: BAR International Series 1422.
- Arnold, D. 1985. *Ceramic theory and cultural process*. Cambridge: Cambridge University Press.
- Arnold, P. J., III. 2000. Working without a net: recent trends in ceramic ethnoarchaeology. *Journal of Archaeological research* 8: 105-133.
- Carr, Ch. and Neitzel, J. (eds.) 1995. *Style, Society and Person: Archaeological and ethnological Perspectives*. New York and London: Plenum Press.
- David, N., Sterner, J. and Gavua, K. 1988. Why pots are decorated. *Current Anthropology* 29: 365-89.
- Deal, M. 1998. *Pottery ethno-archaeology in the central Maya highlands*. Salt Lake City: University of Utah Press.
- Friedrich, M. 1970. Design structure and social interaction: Archaeological implications of an ethnographic analysis. *American Antiquity* 15 (3): 332-343.
- Hodder, I. 1982. *Symbols in Action: ethno-archaeological studies of material culture*. New York: Cambridge University Press.
- Gelbert, A. 2000. *Etude ethnoarchéologique des phénomènes d'emprunts céramiques*. Ph.D Thesis, Université de Paris X, Paris.
- Gosselain, O. 2000. Materializing identities: An African perspective. *Journal of Archaeological Method and Theory* 7: 187-217
- Graves, M. W. 1991. Pottery production and distribution among the Kalinga: a study of household and regional organization and differentiation. In *Ceramic Ethnoarchaeology*, W. Longacre (ed.), pp. 112-43. Tucson: University of Arizona Press.
- . 1994. Kalinga social and material culture boundaries: a case of spatial convergence. In *Kalinga ethno-archaeology: expanding archaeological method and theory*, W. Longacre and J. Skibo (eds.), pp. 13-49. Washington, DC: Smithsonian Institution Press.
- Kramer, C. 1985. Ceramic ethno-archaeology. *Annual Review of Anthropology* 14: 77-102.
- Lemonnier, P. 1986. The study of material culture today: toward an anthropology of technical systems. *Journal of Anthropological Archaeology* 5: 147-186;
- Lemonnier, P. (ed.). 1993. *Technological choices: Transformations in material culture since the Neolithic*. Routledge: London and New York.
- London, G.  
 ———. 1991. Ethno-archaeological Evidence of Variation in Cypriot Ceramics and Its

- Implications for the Taxonomy of Ancient Pottery. In: *Cypriot Ceramics: Reading the Prehistoric Record*, Barlow, J., Bolger, D. and Kling, B. (eds.) pp. 221-35. Philadelphia: Leventis Foundation and University Museum.
- . 2000. Continuity and Change in Cypriot Pottery Production. *Near Eastern Archaeology* 63 (2): 102-110.
- Longacre, W.
- .1991. Ceramic ethno-archaeology: an introduction. In: *Ceramic ethno-archaeology*, W. Longacre (ed.), pp. 1-10. Tucson: University of Arizona Press.
- Mershen, B. 1985. Recent hand-made pottery from Northern Jordan. *Berytus XXXIII*: 75-87.
- Pfaffenberger, B. 1992. Social anthropology of technology. *Annual Review of Anthropology* 21: 491-516.
- Plog, St. 1983. Analysis of style in artifacts. *Annual review of anthropology* 12: 125-142.
- Rice, P. 1987. *Pottery Analysis: a source book*. Chicago: University of Chicago Press.
- Stark, M. 2003. Current issues in ceramic ethno-archaeology. *Journal of Archaeological research* 11(3): 193-242.
- Wiessner, P. 1983. Style and social information in Kalahari San projectile points. *American Antiquity* 48: 253-276.
- .1985. Style of isochrestic variation: a replay to Sackett. *American Antiquity* 50: 160-166.
- Wobst, M. 1977. Stylistic behavior and information exchange. In: Papers for the Director: Research Essays in Honor of James S. Griffin, edited by C.E. Cleland. University of Michigan, Museum of Anthropology, Anthropological Papers, 61. Ann Arbor, pp. 317-342.

\*

---

//

\*

//

- -