Ceramic Analysis of Veszto 20,
A Tiszapolgar Site

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The transition from the Late Neolithic (5000 to 4500 BC) to the Early Copper Age (4500 to 3900 B. C.) on the Great Hungarian Plain was marked by several very clear distinctions. While the Late Neolithic was characterized by the crystallization of three discrete cultural groups, the Tisza, theHerpaly, and the Csoszhalom, initially differentiated by their ceramic styles, the Early Copper Age saw the three groups integrating into what is referred to as the Tiszapolgar cultural group. This group occupied an area extending from the Banat region in northern Yugoslavia, across the Great Hungarian Plain, into Transylvania, and north in to Slovakia ( ). A homogenous ceramic assemblage across this area fortifies the distinction of the Tiszapolgar cultural group from other contemporaneous cultural groups in surrounding areas.

The Early Copper Age

Several changes accompany the transition from the Late Neolithic to the Early Copper Age on the Great Hungarian Plain. Most prolific in influence was the change in settlement structure. Tells and tell-like mounds dominated Late Neolithic settlement patterns with groups with groups of approximately five 30 meter multi-room longhouses grouped together and surrounded by ditches and fortifications. The Early Copper Age saw the disbursement of many of the tell settlements and a movement towards smaller, more evenly disbursed settlements consisting of just a few one-room, nuclear family oriented house structures. The shift in settlement pattern is reflected in the remains of the settlement site. The Late Neolithic settlements produces tells and tell-like mounds consisting of several meters of cultural layers as a result of thousands of years of

occupation. Early Copper Age settlement sites were occupied for much shorter durations of time and less intensely, resulting in the remaining cultural layers measuring between an average of 25 to 50 centimeters thick.

The decreased intensity of occupation of Early Copper Age Tiszapolgar sites is interpreted as a result of the increased mobility of the Tiszapolgar people, this itself seen as a result of a shift in subsistence to an integration of intensive horticulture with cattle husbandry and a continuance of agricultural traditions that had been established in the Late Neolithic (Parkinson 133).

Another difference in settlement patterns from the Late Neolithic to the Early Copper Age also supports the belief that the Tiszapolgar were more mobile. Settlements of the Late Neolithic, as previously mentioned, were primarily tells and tell-like mounds usually located at river bends for trade and defensive purposes. Often smaller single layer horizontal settlements would be located in close proximity to the tells. During the Early Copper Age settlements were all, except for a few continued tell occupations, single layered and horizontal, as well as more evenly distributed across the Plain. The Tiszapolgar expanded into new areas not previously habitated or into very sparsely populated. Exactly why this change in settlement patterns occurred has not yet been determined, but the change is consistent with the people of the Early Copper Age being more consistent than those who lived on the Great Hungarian Plain during the Late Neolithic.

Also accompanying the change in settlement patterns is the appearance of the first formal cemeteries, which were located away from the settlement sites. Burial practices

during the Late Neolithic consisted of burying the dead within the settlement sites and around them.

The overall change that encompasses and supports all of those previously mentioned is a change in the social structure that characterized the Early Copper Age Tiszapolgar culture. The social boundaries that existed appear to be more flexible and easily crossed during the Early Copper Age allowing for a more mobile people to move into and around areas of the Great Hungarian Plain which they had not previously occupied.

Tiszapolgar Ceramic Assemblage

The Tiszapolgar cultural group is defined in one respect by a distinct ceramic style that occurred rather uniformly across the Great Hungarian Plain. The Tiszapolgar ceramic assemblage was initially analyzed by Ida Bognar-Kutzian. In her analysis she identified thirteen different vessel types and later added three more to the typology. Each type was further subdivided. During his research and analysis of ceramic assemblages from excavated and surface contexts and from fieldwork conducted in the Koros-Berettyo Region of eastern Hungary, Dr. William Parkinson developed a different, less complicated classification system based upon diagnostic type (for more information see Parkinson).

Each Late Neolithic cultural group that came to collectively form the Early Copper Age Tiszapolgar cultural group (the Tisza, the Herpaly, and the Csoszhalom) had their own unique ceramic assemblage which differentiated them from other cultural groups. They were consistently characterized by a high degree of variability in stylistic patterning, a consequent result of the three cultural groups occupying the area. The Early

Copper Age finds a homogenous looking Tiszapolgar ceramic assemblage occurring across the same area. The ceramics "generally lacked the incised decoration and painting that characterize Late Neolithic assemblages throughout the Great Hungarian Plain" (Parkinson 356).

Several attributes exist which are used to characterize and define Tiszapolgar ceramics. Lug decoration, also referred to as "noses" or "knobs", is found on nearly every Tiszapolgar vessel type. The assemblage is also characterized by the presence of pedestal bases on several vessel types, mostly open forms that functioned for serving and presentation of food. In The Social Organization of Early Copper Age Tribes on the Great Hungarian Plain Parkinson notes that "the number and size…" of pedestal-based vessels "…varies from site to site in a random or unrecognizable manner. Hence, as a high-visibility stylistic variable, the relative occurrence of pedestal bases may be indicative either of individual stylistic variation or perhaps of functional differences between the settlements" (370).

While the presence of decoration does not occur as frequently during the Copper Age as in the Late Neolithic, it does occur, most frequently as dotted or linear incised patterns. The most common pattern found is that of two dotted parallel lines or in diamond shaped groups. Feathered, crosshatched, V- and inverted V- shaped, and circled groups are also found. Often a white incrustation made of crushed snail shells is found in association with the incised decoration, with the incised decoration acting as an attachment for the incrustation. Plastic decoration, where pieces and shapes of ceramic are attached to the vessel prior to firing for decorative purposes, is also found in

Tiszapolgar ceramics. A “false-rope” plastic decoration is one of the most common forms.

Ceramic Analysis

The analysis of ceramic assemblages is employed in archaeological research for several reasons. From a vessel’s function to the time period to which the vessel dates to, much information can be incoded in ceramic stylistic attributes. Determining the function of ceramic vessels may aid in determining the function of the area in which the vessel was found, This information can be used in establishing spatial boundaries and in determining areas of certain economic activity. Analysis and comparison of stylistic attributes of assemblages can also provide insight into what cultural processes were occurring at the time of the vessel’s synthesis, the degree of social interaction on both small, local levels to larger, regional levels, and can further provides insight into the political economy, social structure, and technological level of the group of people who made the ceramics.

Ceramics are excellent sources of material for establishing and building a chronology for the Great Hungarian Plain, as well as many other areas of the world because ceramic vessels tend to be used extensively, if to varying degrees, by many groups of people for similar purposes. Because each group may utilize a different technology in ceramic production and a different style in decoration, ceramic vessels provide a great deal of variability set upon a consistent basis that can be analyzed and compared. This information can be used to establish the past lifeways of cultural groups.

Ceramics are extremely useful because they tend to be of durable consistencies. While they may break rather easily, the broken fragments (sherds) preserve very well in

the ground, as is evidenced by the thousands of sherds recovered from the excavations at Veszto 20 and Korosladany 14 from this year (2001) and last summer (2000). While most of the sherds were very small and quite broken, enough of the sherds were adequate in size and preservation for successful analysis to be complete.

Typological Analysis of the Veszto 20 Assemblage

The only group of ceramics included in this analysis is those from the summer 2000 and 2001 excavations at the Tiszapolgar settlement at Veszto 20. All of the ceramics retrieved from the four test pits during the 2000 excavation season are included as well as approximately _____ sherds from the Block 2 excavation from the 2001 season. Some ceramics from B2, B3, and the ceramics from the Korosladany 14 site could not be included in this analysis due to time constraints. It is important to note that because the ceramics from B3 (2001 season) are not included in the analysis, a bias in the data and in its interpretation has most likely been created. As such, the results and interpretations presented below should not be taken as correct or true, only as an analysis of the work completed as of yet.

Analysis of ceramics began with separating all of the retrieved sherds into diagnostic and non-diagnostic groups. Diagnostic sherds are those which include some type of attribute which allow for information about the vessel the sherd was once a part of to be drawn. Diagnostic sherds include rims, bases, or sherds with decoration on them. Non-diagnostic sherds, which usually come from the body of the vessel and do not have any stylistic or functional implications, are separated and not included in the analysis.

Methodology

The diagnostic sherds were assessed and described using the Ceramic Analysis Form designed by Dr. Parkinson for his doctoral dissertation research. The form is a collection and list of specific variables that collectively compromise a basis for qualitative and quantitative measurements to be recorded in a standardized form. The development and use of the Ceramic Analysis Form is vital because it provides a consistent and defined classification system from which analytical results can be replicated. This criterion is essential in conducting scientific research and producing accurate results and interpretations.

The variables included on the Ceramic Analysis Form have been determined to be important characteristics of the ceramic sherd because they can be analyzed to build a data set. The data set can then be analyzed by various methods depending what questions are being asked. Variables on the Ceramic Analysis Form include vessel type, maximum width of sherd, sherd weight, external finish, decoration type, and which block and unit the sherd was excavated in, and specific variables related to diagnostic type (example given: rim thickness, rim diameter, part of base, shape of lug).

The data set used in this analysis was compromised of 1,501 records from the Veszto 20 site, including all of Block 1 from 2000 (a 2 meter by 2 meter test pit), Blocks 2 and 3 (2 meter by 2 meter test pits), and Block 4 from 2000 (also a 2 meter by 2 meter test pit), which because it only contained bone and ceramics was determined to be a midden last year. Also included in the analysis are the diagnostic ceramics from excavation units 2-44 through 2-100 of Block 2 from this year's excavation.

Statistical Analysis

The statistical program JMPIN 3.2.1 was used for the analysis of certain ceramic variables chosen from the Ceramic Analysis Form. Variables were chosen on the basis that they, when compared, graphed, and manipulated with the JMP program, would yield information about the Veszto 20 site. While any variable can be analyzed using JMP, not all provide interesting or important results. The purpose of this analysis was to determine if any patters occur within the site as a whole and between the four excavated areas. Certain variables proved be more useful than others in determining what was occurring ceramically at the site.

I found JMP most useful for creating charts and graphs for comparing the variables chosen to be analyzed. The program provides much statistical information about the assemblage being analyzed and a battery of tests can be run on these numbers. Percentages of certain attributes present expected recovery, and deviation from the expected recovery can all be calculated, and these are the figures I used for analytical purposes. The statistical results produced by JMP are then interpreted to determine and hypothesize the social, political, economic, and chronological implications of what occurred at Veszto 20 during its occupation.

Results of Analysis

The purpose of this analysis is to attempt to determine what occurred at the Tiszapolgar site of Vestzo 20 during its occupation by analyzing the ceramic assemblage recovered through excavation. To accomplish this goal particular attributes were chosen

for analysis to create data sets which I believed would be able to be interpreted into what was occurring at Veszto 20.

The primary goal was to identify any trends that were occurring across the site and also to identify trends occurring within each excavated block. While Blocks 2,3, and 4 each yielded considerable sample sizes, Block 1 only yielded approximately 50 diagnostic sherds. As such, the results from analysis of Block 1 were not statistically significant, and for all intensive purposes will not be included in the results listed below. Only the results from Blocks 2, 3, and 4 are included in interpretation.

To determine if any pan-site patterns existed I compared what was occurring block by block in reference to specific variables of the ceramic assemblage. I looked at comparisons of variability in diagnostic type, in decoration, in vessel types, in vessel mouth, in external finish, in lip shape, in base type, in lug shape, in lug profile, in lug piercing and in rim thickness within each block to determine if there were any overall trends occurring at the site. Some of the comparisons did not yield any useful information. Overall, it appears that many of the variables analyzed are statistically proportionate for Block 2 and block 4, and that they are often significantly different from block 3. While this does not hold true for all variables, it occurs often enough for a trend to be discerned.

Vessel Type

There were 753 records which correlated vessel type and block number. Block 4 displayed the most variability in vessel types, including at least one of each possible vessel. This result is conclusive with the theory that block 4 was a midden deposit. Because it is a deposit for trash and thrown-out objects, most likely over a long period of

time, it would be expected that all different kinds of vessels would be represented in block 4. Block 4 also had the largest percentages of vessels, which are not commonly, found across the rest of the site, such as cups (66.7%) and strainer pieces (75%).

Block 2 contained 45.8% of the bowls in the sample. Block 3 and Block 4 were closer in distribution of percentage of bowls, 22.9% and 22.8% respectively. Both Block 2 and 4 each had 2 large-open bowls. Open vessels appear to account for larger percentages of the total sample for each block from Blocks 2 and 4. This may be significant also in those blocks 2 and 4 contained more open-mouthed vessels, because open-mouthed vessels are used for serving and presentation. This may also be an indication that food serving and communal eating was occurring more often in Block 2, or that the habitators of Block 2 were making more open-mouthed vessels.

The distribution of pots between blocks exhibited the most unusual trend. Block 1 yielded 1%. Block 2 yielded 32.3%. Block 3 yielded 28.5%. block 4 yielded 38.2%. While the proportions look fairly evenly distributed between blocks 2, 3, and 4, the expected yield showed that block 2 yielded many less pots than expected by a standard deviation of –18.797, block 3 yielded more pots than expected by a standard deviation of +7.3, and Block 4 yielded many more pots than expected with a standard deviation of +14.9. The broad range in standard deviation indicates that something peculiar was occurring in regards to pot use and disposal. If the theory that block 4 is the midden associated with block 2 is correct, then one explanation for the larger than expected numbers of pots in block 4 and lower than expected numbers in block 2 may be explained by the fact that pots were the vessels primarily used for cooking activities. Constant exposure to high temperatures and repeated heating and cooling would cause the pots to

wear more quickly than other ceramic vessels and deteriorate in a shorter time. As such, pots would be disposed of more readily than other vessels. This would attribute to a larger percentage of pots than expected to be present in block 4.

Block 2 yielded 42.55% of the pedestal vessels, very near to the expected yield. Block 3 yielded 32.98%, more than expected, and Block 4 yielded 17.02%, considerably less than expected.

Decoration

The variability in decoration of vessels from Veszto 20 appeared rather similar across the site. No striking similarities or differences between the blocks were apparent, except that block 2 produced 33 of the 41 (total) possible combinations of both incised and incrusted decoration. This may be explained as a result of stylistic differences attributable to different makers of the ceramic vessels in block 2 from block 3. The difference may also be an indication that block 2 may be a chronologically earlier or later structure than Block 3. The lack of incised and incrusted sherds from Block 4 may be attributable to the fact that vessels decorated with incision and incrustation were more highly valued, used less intensely, and preserved more consciously than non-decorated "utilitarian" vessels and hence they would not be disposed of as much. The number of pierced sherds is very similar in blocks 2 and 4 (28 and 22 respectively), while there were only 13 pierced from block 4. This can be correlated to the fact that considerably less pedestalled vessels occur in block 4. That the number of pierced sherds is roughly the same, but that the total number of sample size from block 2 and 3 are so different indicates that proportionately there are more pedestalled vessels coming from block 3. In actuality a much larger number of pedestalled vessels does come from block 3 than expected, which may account

for the higher frequency of piercing as decoration. Also to note is that considerably fewer than expected lugs were recovered from block 2. This may be indicative of stylistic differences in decoration between the manufacturers of the vessels from each associated area. It may indicate that the vessels from each unit fulfill different functional purposes. I would check for pierced status of lugs per frequency of vessel type for block for further insight into the significance of this variable. The frequency of lug use may also indicate a chronological difference between he two house structures associated with each block.

Frequency of decoration type by vessel type appeared consistent across the site. Anywhere from 81-91% of open-mouthed vessels were not decorated from each block. Occurrence of lug decoration varied from 2.6% to 17% (in bowls of block 1), but occurred consistently around 5% for most vessels. This figure does not account for the actual frequency of lug decoration since many of the lugs analyzed were not attached to any other diagnostic sherd. Lug decoration is in fact well known to occur on most Tiszapolgar pottery. The numbers only indicate that lugs are preserved in association with other diagnostic sherds consistently in all blocks. I believe this occurs because lugs are plastic decoration attached to the vessel after formation but prior to firing, and as such, they are quite susceptible to breaking off, most likely more often in certain places than others. The similarity in lug frequency I believe indicates that lugs are being preserved in similar places on vessels across the site due to their location on the vessel.

The frequency of pedestal decoration is very consistent between blocks and in comparing the frequency of block to the frequency for the entire site. No decoration occurred on 37.5% to 48.39% of the pedestalled vessels and piercing occurred on 25% to

35.48%. Piercings usually occur on all pedestal bases at a much higher frequency. I think that the overall consistency in decoration frequencies amongst each block and across the entire site would be expected and is attributable to the makeup of the Tiszapolgar ceramic assemblage.

Base Type

There were 305 matches for comparing base types by block. Blocks 2 and 4, again, displayed very similar frequencies of flat base occurrence (38% and 34.6% respectively). Block 2 had the highest occurrence of hollow bases, including both straight and flaring. Hollow straight bases were evenly distributed between blocks 2 and 3, while block 3 has 41% of the hollow flaring bases.

Lugs

Lugs provide a wealth on information in establishing chronology, functionality in vessel use, and in determining stylistic differences, because they occur on almost every vessel type of the Tiszapolgar assemblage and because they are one vessel attribute which preserves very well. Comparisons of lug cross section and lug shape between the clocks of Veszto 20 yielded some interesting results.

When comparing the cross section of lugs (round, ovate, square, and rectangular), Blocks 2 and 4 exhibited very similar distributions between them. Block 2 accounted for _____% of the ovate sample, while block 4 accounted for _____%. Block 2 accounted for _____% of the round sample, while Block 4 accounted for _____%. Block 3had similar proportions of ovate (19%) and round (15%) lug frequencies. Both blocks 2 and 4 had very few occurrences of square or rectangular lugs. Block 3 on the other hand accounted for 50% of rectangular lug occurrence for the total assemblage. Block 2

yielded 33% and block 4 yielded 16.7%. Overall, lugs from blocks 2 and 4 were predominantly round or ovate in cross section with very few occurrences of square or rectangular, while in Block 3 the frequencies of ovate, rectangular, and round lug cross sections was more evenly distributed.

Comparison of lug shape between blocks displayed a similar pattern to the comparison of lug cross section between blocks. Frequency of occurrence of lug shapes is very consistent for blocks 2 and 4. Round lugs accounted for 34.11% of block 2 and 40.22% of block 4; semi-pointed for 40.31% of block 2 and 45.65% of block 4; beaked accounted for 3.88% of block 2 and 2.17% of block 4. Pointed lugs were the only inconsistent variable for lug shape between blocks 2 and 4, with 21.7% coming from block 2 and 11.96% from block 4. Lug shape from block 3 was compromised of 50.9% by semi-pointed and 47.3% was round. There were no beaked lugs and only one pointed lug. This pattern of similarity between blocks 2 and 4 is consistent for both lug shape and cross section, with the frequencies for block 3 being considerably different from both blocks 2 and 4. While this pattern may be attributable to difference in manufacturing practices and aesthetic preferences, I believe that the differences may be indicative of a chronological difference in occupation of the two structures associated with the blocks.

Summary

Ceramic analysis is an important practice in archaeology because ceramics are found so widely spread in the archaeological record and because they are often fairly well preserved. The results of ceramic analysis can be used to construct timelines and to determine what occurred at the site. From the data collected and from my interpretation, I believe there is a distinct difference between blocks 2 and 4 and block 3. I believe that

the difference may be chronological, but perhaps the difference could be that the buildings functioned for different purposes. Continued analysis of the ceramics retrieved from the 2001 excavation, and future excavations will hopefully be able to answer the question and may prove this theory to be true or false.