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Chapter 10: The House and the Household

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A household is defined as a group of individuals who share a single residence and who cooperate on a regular basis in a number of basic economic and social activities. "The household is a social group defined on the basis of the activities it performs rather than on the basis of kin relations of its members" (Lightfoot 1994:146). Wilshusen (1988a:636) describes the distinction between the household and the dwelling unit, or house, that it occupies: "A household is the social unit that occupies a dwelling unit (house); and a dwelling unit is a sheltered and enclosed space in which domestic activities, such as food storage, processing, and consumption and child-rearing, are performed. This definition…assumes the norm of 1 household equaling 1 dwelling unit."

So, in general, the house consists of the central architectural facilities used by a household. In the ALP project area, the house consisted of a single pit structure and small, often contiguous, aboveground storage or isolated pit rooms. In association with these common architectural features, houses may also contain extramural pits, hearths, activity areas, a midden, burials, and an enclosure, and the ALP project sites contained all of these associated features. Within this basic framework, however, the ALP project sites showed notable architectural, organizational, and activity variation among houses and households. In this chapter, this variation is documented and described.

HOUSEHOLD COMPOSITION AND SIZE

One of the most comprehensive studies of Pueblo I households is Lightfoot's (1994) analysis of the Duckfoot site, a completely excavated Pueblo I hamlet just south of the Dolores River Valley. For this site, Lightfoot argued that the Pueblo I household was centered on the pit structure and comprised an extended family or extended-family-type group. This is in contrast to earlier interpretations made during the Dolores Archaeological Program (DAP) that saw multiple nuclear family households occupying surface room suites and sharing a pit structure (Kane 1984; Schlanger 1987; Varien and Lightfoot 1989). The lack of surface living rooms in the ALP project assemblage—due both to a lack of preservation and to the fact that many of the surface rooms appear to have been storage rooms rather than living rooms in this earlier period (see below)—suggests that Lightfoot's model is more appropriate than the DAP model for describing the composition of households in the Durango area. As Lightfoot (1994:158) describes,

> households at Duckfoot may have been extended-family-type households that incorporated a number of nuclear-family groups or dyads (Adams 1960)…. Through time, the size and composition of households could have changed because of the developmental cycle of domestic groups, which includes such events as marriage, birth, death, group fission, and so forth. As the size and composition of the social groups changed, the architectural configurations and the use of structures would have changed as well.

Schlanger (1987:589) notes that the average use-life of an earthen-walled pit structure (10–15 years) is approximately one-half to two-thirds of a generation (about 18–20 years) as defined by Hassan (1978). Thus, house size will be affected by the time within a household's domestic cycle (and accordingly the number of members of the household) when an old house is worn out and a new house is needed. These two factors—the variable and fluid extended-family-type composition of the early Pueblo I household and the building of new houses at various points within the domestic cycle—are expected to generate a certain range in the size of households and their houses. Functional variation of these structures may introduce yet a third cause of variable house size. Unlike the other factors, however, functional variation is expected to generate specific modes of house size.

SWCA excavated 60 Pueblo I pit structures in the project area sufficiently to record floor area and other attributes. Figure 10.1 plots the distribution of pit structure sizes in the ALP project area based on floor area, and indicates a range from about 7.5 m^2 to 42.5 m^2. Three modes are recognized as the central tendencies for structure size: small (16 m^2), medium (26 m^2), and large (40 m^2) (Figure 10.1). Small pit structures are here defined as those having a floor area between 7.5 m^2 and 21.5 m^2 (n = 23); medium pit structures range from 21.5 m^2 to 28.5 m^2 (n = 21); and large structures are greater than 28.5 m^2 (n = 16). The presence of definable modes in the distribution prompts the question: Were there functional differences among variously sized pit structures? Because the definition of the household hinges on the performance of shared activities in a dwelling, the focus of this chapter is on

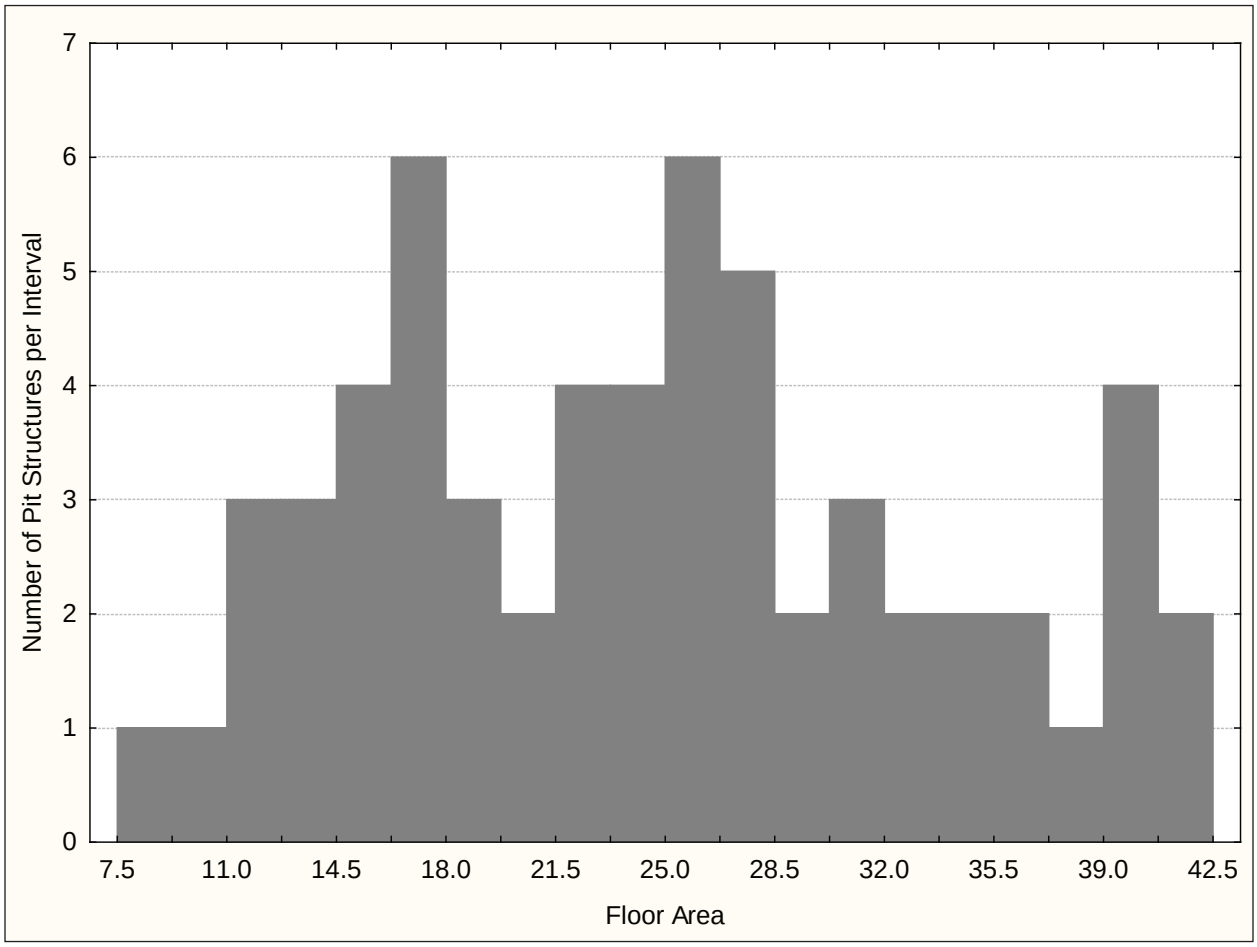

Figure 10.1. Histogram of floor area size for pit structures (n = 60) excavated by SWCA in the ALP project area.

activity variation in, and in association with, the pit structure. Architectural features of the pit structure, closing attributes, associated artifact assemblages, and associated extramural features are explored for possible variation among houses and households.

ARCHITECTURAL FEATURES OF THE HOUSE

Architectural features are those features incorporated into a pit structure at some point in its use as a dwelling. The more common features include benches, bins, conical pits, deflectors, hearths, main support post holes, mealing bins, sipapus, storage pits, stringer post holes, ventilator systems, and wing walls. A brief description of each of these feature types as defined in the excavation methods section of the ALP project research design (Potter 2006) is included below.

Bench

A bench is a raised area around the interior perimeter of a pit structure into which stringer posts are set. The bench was also used to store objects.

Bin

Bins are often found in the back corners of Pueblo I structures, although they also have been found in the front corners adjacent to wing walls. They are usually built of some combination of adobe, posts, and slabs. Bins often stand the same height as the bench, and it is not uncommon for them to be as large as 1 m in diameter. They are associated with food storage.

Conical Pit

These features are pits of a uniform inverted-cone shape. They are lined with a thin layer of clay plaster. In the ALP project area all conical floor pits were observed only at the Sacred Ridge site (5LP245) and were positioned to one side of the hearth. A ritual function for these features is inferred. This feature is not described in the excavation methods section of the ALP project research design (Potter 2006) because it was an unanticipated feature type.

Deflector

Deflectors are found in pit structures and rarely in surface structures. They are built of adobe, posts and adobe, or simply as an upright stone slab anchored into the floor. Deflectors are found between the hearth and the ventilator opening.

Hearth

A hearth is a formally constructed pit that usually shows signs of thermal use, such as oxidation. Stone or adobe plaster is usually incorporated into its construction. A hearth may incorporate clay coping around its perimeter, giving the feature a raised appearance. In the ALP project area, all pit structures contained hearths; some were coped.

Mealing Bin

Although usually found in structures, mealing bins also occur in extramural contexts. They are usually rectangular with upright slab or adobe walls and are often found with the metate in place. Pueblo I sites generally do not have formal mealing bins; they are usually found in post–Pueblo I contexts. The empty shallow pits found in many pit structures may have served a similar function.

Post Hole

A post hole is a hole that once held a post or that still contains a post remnant. Post holes are usually cylindrical and vary in depth and diameter. Main support post holes range in number from four to eight and can be set in the floor or against (or incorporated into) the bench. Rarely, main support post holes are located on the exterior of the house. Stringer post holes are part of the secondary support system and are set in the top of the bench (see Stringer Post below).

Sipapu

A sipapu is a small, usually cylindrical pit defined by its location along the primary axis of a pit structure. In general, a sipapu will be in line with the hearth, ash pit, deflector, and ventilator shaft. It may be immediately adjacent to the hearth or set farther back, closer to the back wall of the structure. Very often sipapus have been filled in with clean sand and capped. It is not uncommon for Pueblo I sipapus to be paired or to occur in multiples as a sipapu complex. Paho (prayer stick) marks may also be found in association with sipapus. Sipapus will often contain culturally modified levels of pollen.

Storage Pit

A storage pit is non-thermal feature that may or may not have a formal lining but that exhibits some evidence of having been used primarily for storage. The storage function is implied by the absence of thermal alteration, the presence of the remains of stored goods, or the pit's location in a structure or site.

Stringer Post

Stringer posts are inward-leaning timbers that supported earthen coverings of mud and brush that formed the walls of structures. They are set in the top of a bench and are usually much more numerous than main supports.

Ventilator

A ventilator is a component of a pit structure and comprises two parts: 1) a vertical shaft 0.5–1.5 m in diameter and approximately 1.5 m outside the structure and 2) a horizontal tunnel leading from the structure chamber to the base of the vertical shaft. Some pit structures in the Durango area have a bifurcated ventilator—that is, the horizontal tunnel has two openings into the structure. Most ventilators in the ALP project area had single openings, and often these openings were coped with adobe.

Wing Wall

A wing wall is feature that divides space in a pit structure. Wing walls may be constructed of posts and adobe, upright slabs, or a combination of posts, adobe, and rock. The area between the front structure wall and the wing wall was often used for storage of tools and milling equipment. It is common for wing walls to be connected to the deflector, forming a low partition across the front of the structure. Apertures are often seen in wing walls, allowing air or objects to pass through.

Frequency and Distribution of House Features

The most common pit structure feature types in the ALP project area were benches, four-post roof support systems, main support post holes set in the floor rather than set in the bench or exterior, one-hole ventilators, wing walls, and deflectors (Figure 10.2). Almost half of the structures contained sipapus and coped hearths; the remainder contained uncoped hearths. Present but rare feature types were posts set in the bench, stringer post holes, exterior posts, two-hole ventilators, and bins and pits.

Small structures generally contained fewer of each of the recorded feature types (Figures 10.3 and 10.4). The exception is the presence of the one-hole ventilator. It may have been more efficient to ventilate smaller structures with this type of system, which would have been easier to engineer and build. Though relatively rare, more two-hole ventilators were associated with medium and large structures than with smaller structures (Figure 10.3). Large structures had fewer deflectors as well, and this may relate to two-hole ventilators making deflectors redundant and unnecessary.

Not surprisingly, structures with larger floor areas contained more floor features, including bins, storage pits, mealing bins, sipapus, and conical pits. The extra space in larger structures may have allowed for more storage and space-demanding activities, such as maize grinding, than would have been possible in smaller

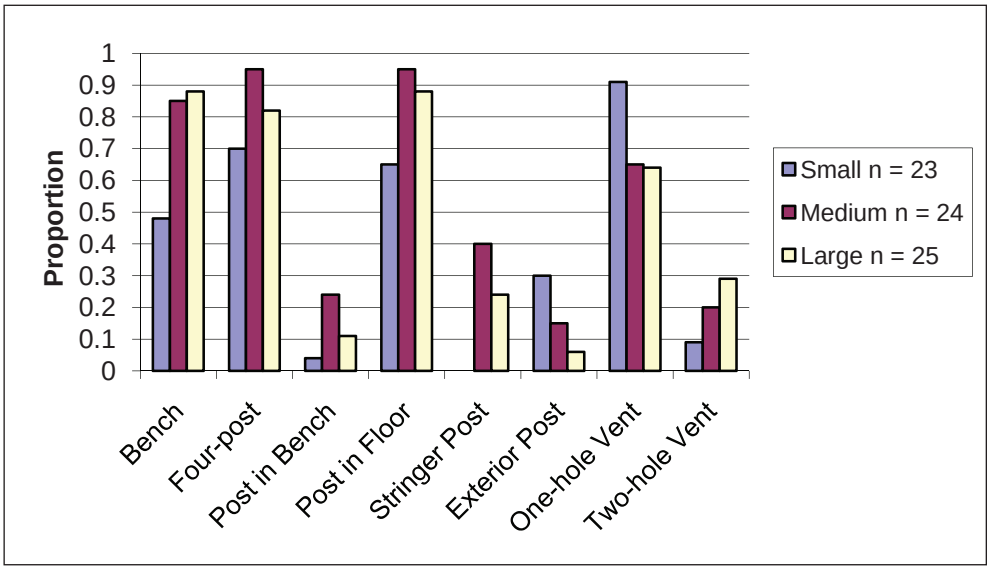

Figure 10.2. Count of pit structures containing each feature type. The presence or absence of all attributes in every pit structure could not be confirmed.

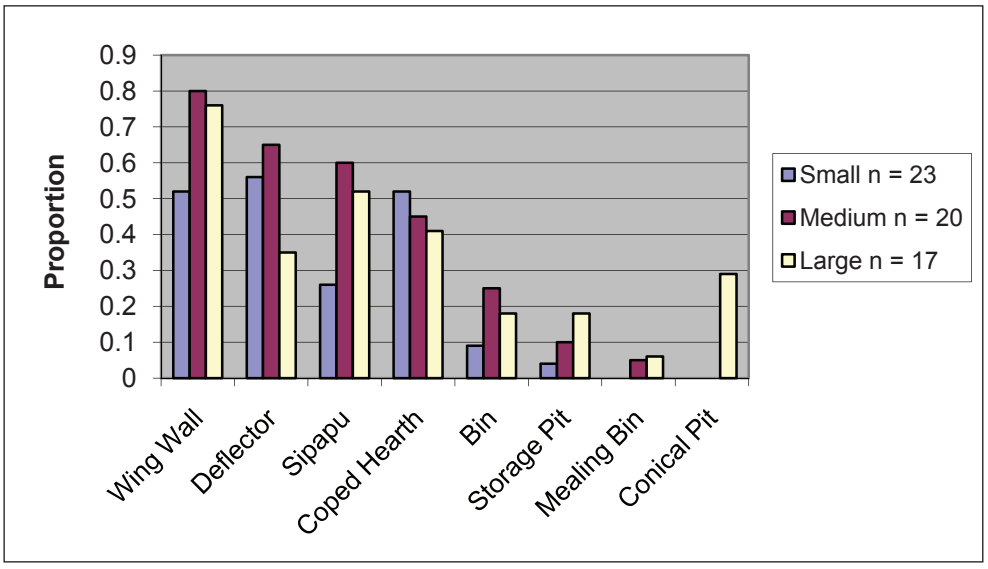

Figure 10.3. Proportions of pit structures of various sizes containing particular bench, post, and vent features.

structures. Sipapus and conical pits were most likely features related to ritual, and the association of these features with larger structures suggests that larger structures, particularly the largest structures, had ritual as well as domestic functions.

The larger floor areas also may have allowed for more space delineation inside the structure. Wing walls were present in most medium and large structures and relatively rare in small structures (Figure 10.4). Benches were more common in medium and large structures than in small structures, which would have made the roofed area of these larger structures that much greater in size. Benches also may have provided additional storage areas in these larger structures. The best preserved section of bench uncovered in the project area—that at 5LP236—contained numerous artifacts, which apparently had been stored on the bench (Chuipka et al. 2008:163–199).

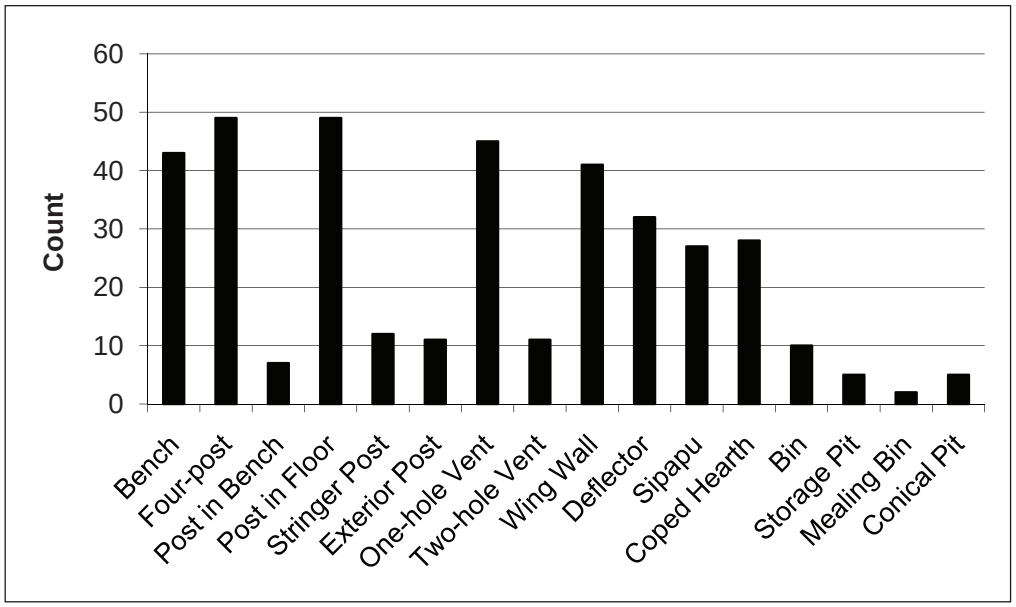

Figure 10.4. Proportions of pit structures of various sizes containing particular floor features.

Finally, large and medium structures had a four-post roof support system with posts set in the floor more often than did small structures (see Figure 10.3). Small structures, on the other hand, more often had exterior posts, and often this configuration involved more than four posts. Likewise systems involving bench-set posts, though rare, often entailed the use of more than four posts, and these were most often associated with medium and large structures (see Figure 10.3). The pattern of exterior posts associated with small structures may have been simply a matter of the floor area limitations of small structures, the result being the placement of posts outside the structure rather than inside. It also may have been a function of less energy investment in small structures and of the fact that they were not built to last as long as larger structures.

To explore connections among these feature types, a correlation analysis was conducted. Forty-nine pit structures yielded presence/absence data on every feature type included in this analysis. (If the presence or absence of any of the feature types was unknown, the structure was excluded from the analysis. This happened in 11 cases.) Table 10.1 presents correlations for the presence/absence of features in pit structures. When features were always present, as in the case of roof-support post holes, hearths, and ventilators, the different versions of these features were tallied and included in the analysis (e.g., two-hole ventilators vs. one-hole ventilators). Figure 10.5 presents the principal components analysis (PCA) scores on the first two components derived from the correlation matrix for pit structure features (Table 10.1) [1].

The values presented in Table 10.1 and the factor scores plotted in Figure 10.5 corroborate many of the observations presented above. Small structures correlated positively with one-hole ventilators and exterior posts, and negatively with most other variables. Medium structures correlated positively with benches, stringer posts, posts in the floor, and a four-post roof support system. Large structures contained mealing bins and conical pits more frequently than did medium and small structures. As expected, benches and stringer

[1] Principal components analysis (PCA) is an exploratory tool for obtaining a two-dimensional picture of complex multivariate data (Baxter 1994:48–50). PCA involves a mathematical procedure that transforms a number of possibly correlated variables into a smaller number of uncorrelated variables called principal components. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining variability as possible. The results of a PCA depend largely on how the data are scaled or standardized. The most common method of standardizing data is through the use of a correlation matrix. Thus, the plots of a PCA can be interpreted as two-dimensional approximations to the correlation matrix.

posts were highly correlated, as were four-post roof support systems and posts in the floor, and wing walls and deflectors. In addition, one of the strongest sets of correlations was among two-hole ventilators, coped hearths, and deflectors (see Figure 10.5; see Table 10.1). The possible meanings of these associations are unclear, but these features may have been functionally related somehow. Alternatively, they may have been culturally linked; that is, the people who built and occupied these structures had a culturally specific way of building their houses (see Chapter 12, Settlement Cluster Variation, for additional discussions of possible cultural variation in building techniques in the project area). Finally, conical pits, storage pits, and mealing bins were strongly correlated, all of which were correlated positively with large structures.

House Features Summary

In summary, small structures tended to have few features incorporated into them and much less capacity for storage (both in number of storage pits and bench area). Their smaller size, roofing technique using exterior posts, and lack of additional features such as wing walls and bins suggest a lack of energy investment in their construction compared to that spent on larger structures. Large structures had the most associated features, including mealing bins, storage pits, and conical pits. These structures not only appear to have received more energy investment, but some also probably played a ritual function as well as a domestic function. Finally, some highly correlated variables, such as two-hole ventilators and coped hearths, may be culturally related rather than functionally related, and may signal the presence of more than one culture group in the community. This topic is further explored in Chapter 12 and Chapter 15, Ritual, Social Power, and Identity.

CLOSURE OF THE HOUSE

Also referred to as mode of abandonment (see, for example, Varien and Lightfoot 1989:82), the closure of a house informs on the last uses of the house before it was vacated. These closure treatments include whether the house was cleaned of artifacts and how features were treated at the time of vacancy, whether the house was burned when placed into disuse as a dwelling or the timbers were salvaged for use in other structures, and whether cultural or natural deposits filled the remaining depression. How a house was treated at closure may relate to the anticipated distance and permanence of the move (Schlanger and Wilshusen 1993), the need for timbers for the construction of new houses locally, and any ritual concerns the household may have had for the structure (Wilshusen 1986). In rare cases, catastrophic closures may have occurred due to accidental burning of a house or deliberate acts of violence (LeBlanc 1999).

The following closure variables were recorded as present or absent on all 60 Pueblo I pit structures: post-abandonment (PA) burning, after-salvage (AS) burning (main support posts absent), de facto artifact assemblage on the floor, animal or human burial on the floor or in the fill, refuse in the fill, and capped floor features.

Twenty-five of the 60 pit structures (42%) were burned at closure (i.e., had post-abandonment burning) (Figure 10.6). Of these, 13 had their main support posts removed prior to the burning (or, alternatively, they were not preserved because they were not burned thoroughly enough in the closure fire). Fourteen had de facto artifact assemblages on their floors[2], which means that 46 of the pit structures (77%) were completely or mostly cleaned of artifacts when they were closed as dwellings. Burials, both human and animal, on the floor and in the fill were rare occurrences, but human burials outnumbered animal burials. Additionally, very few structures were filled with trash. Interestingly, 19 pit structures had capped floor features, indicating that care was taken in the closure of these structures.

[2] This count does not include Feature 104 at the Sacred Ridge site. This structure contained a substantial floor assemblage, but this assemblage was associated with a post-occupancy use of the structure (see Chapter 16, Paleodemography, Health, and Violence in Ridges Basin).

Table 10.1. Pit Structure Feature Correlations Based on Presence/Absence

Pit Structure Size and Feature Type	Small	Medium	Large	Bench	Four-post	Post in Bench	Post in Floor	Stringer Post	Exterior Post	One-hole Vent	Two-hole Vent	Wing Wall	Deflector	Sipapu	Coped Hearth	Bin	Storage Pit	Mealing Bin	Conical Pit
Small	1.00	**−0.61**	**−0.45**	**−0.47**	−0.15	−0.17	−0.27	**−0.43**	0.22	0.16	−0.20	−0.28	0.10	**−0.38**	0.06	−0.27	−0.13	−0.16	−0.24
Medium	**−0.61**	1.00	**−0.43**	0.27	0.19	0.10	**0.31**	**0.30**	−0.11	−0.06	0.03	0.17	0.15	0.18	0.02	0.19	0.02	0.06	−0.23
Large	**−0.45**	**−0.43**	1.00	0.23	−0.04	0.08	−0.04	0.15	−0.12	−0.12	0.18	0.13	−0.27	0.23	−0.08	0.10	0.12	0.12	**0.52**
Bench	**−0.47**	0.27	0.23	1.00	0.15	0.22	**0.28**	**0.32**	−0.23	−0.13	**0.30**	0.27	−0.05	**0.39**	0.13	−0.07	0.20	0.12	0.18
Four-post	−0.15	0.19	−0.04	0.15	1.00	**−0.38**	**0.67**	0.08	**−0.29**	0.04	−0.08	0.15	−0.00	0.10	0.17	0.04	0.14	0.08	0.12
Posts in bench	−0.17	0.10	0.08	0.22	**−0.38**	1.00	−0.20	0.10	−0.17	−0.08	0.12	−0.06	−0.18	0.09	−0.12	−0.02	0.08	0.24	−0.11
Posts in floor	−0.27	**0.31**	−0.04	**0.28**	**0.67**	−0.20	1.00	0.08	**−0.61**	0.04	−0.08	0.28	0.12	0.22	−0.07	0.04	0.14	0.08	0.12
Stringer post	**−0.43**	**0.30**	0.15	**0.32**	0.08	0.10	0.08	1.00	0.16	−0.15	0.21	0.21	−0.03	**0.29**	0.06	−0.00	−0.18	0.14	0.20
Exterior post	0.22	−0.11	−0.12	−0.23	**−0.29**	−0.17	**−0.61**	0.16	1.00	0.25	−0.22	0.02	0.05	**−0.38**	0.01	−0.07	−0.15	−0.09	−0.13
One-hole vent	0.16	−0.06	−0.12	−0.13	0.04	−0.08	0.04	−0.15	0.25	1.00	**−0.89**	0.20	−0.21	**−0.42**	**−0.30**	−0.10	0.04	0.12	0.17
Two-hole vent	−0.20	0.03	0.18	**0.30**	−0.08	0.12	−0.08	0.21	−0.22	**−0.89**	1.00	−0.04	0.13	**0.46**	**0.42**	0.15	−0.00	−0.10	−0.15
Wing wall	−0.28	0.17	0.13	0.27	0.15	−0.06	**0.28**	0.21	0.02	0.20	−0.04	1.00	**0.41**	0.11	0.13	**0.29**	0.20	0.12	0.18
Deflector	0.10	0.15	−0.27	−0.05	−0.00	−0.18	0.12	−0.03	0.05	−0.21	0.13	**0.41**	1.00	0.05	0.19	−0.02	−0.12	−0.24	−0.04
Sipapu	**−0.38**	0.18	0.23	**0.39**	0.10	0.09	0.22	**0.29**	**−0.38**	**−0.42**	**0.46**	0.11	0.05	1.00	−0.02	0.00	−0.10	0.19	0.12
Coped hearth	0.06	0.02	−0.08	0.13	0.17	−0.12	−0.07	0.06	0.01	**−0.30**	**0.42**	0.13	0.19	−0.02	1.00	0.06	−0.06	0.00	−0.14
Bin	−0.27	0.19	0.10	−0.07	0.04	−0.02	0.04	−0.00	−0.07	−0.10	0.15	**0.29**	−0.02	0.00	0.06	1.00	0.19	−0.10	−0.14
Storage pit	−0.13	0.02	0.12	0.20	0.14	0.08	0.14	−0.18	−0.15	0.04	−0.00	0.20	−0.12	−0.10	−0.06	0.19	1.00	0.27	**0.39**
Mealing bin	−0.16	0.06	0.12	0.12	0.08	0.24	0.08	0.14	−0.09	0.12	−0.10	0.12	−0.24	0.19	0.00	−0.10	0.27	1.00	**0.32**
Conical pit	−0.24	−0.23	**0.52**	0.18	0.12	−0.11	0.12	0.20	−0.13	0.17	−0.15	0.18	−0.04	0.12	−0.14	−0.14	**0.39**	**0.32**	1.00

Note: Bolded correlations are significant at $p < 0.05$; $n = 49$.

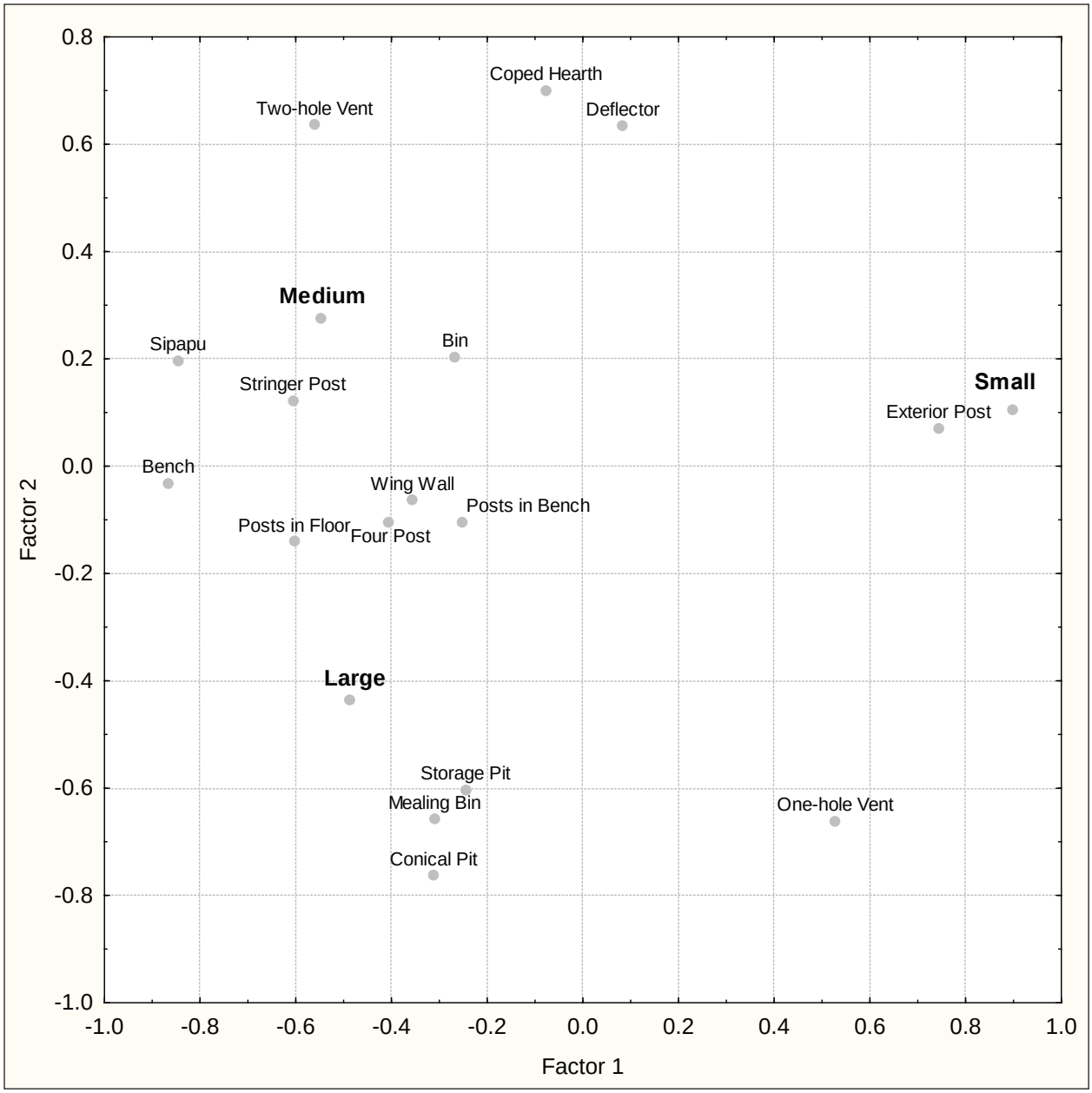

Figure 10.5. Scatterplot of scores on the first two principal components (or factors) derived from the correlation matrix for pit structure features.

Small structures exhibited fewer closure attributes than medium and large structures (Figure 10.7). They were burned less frequently, contained fewer floor assemblages and burials, and were filled with trash and had capped floor features less frequently than larger structures. Slightly more than half of the large structures were burned at abandonment. Large structures also exhibited the highest frequency of fill burials, floor assemblages, trash, and capped floor features (Figure 10.7).

A correlation analysis of the variables shows that the only significant correlation with respect to structure size is that between medium structures and human floor burials. In general, small structures exhibit negative correlations with most variables, whereas medium and large structures are positively correlated with most variables (Table 10.2). Among the variables, pit structures with post-abandonment burning and after-salvage burning are highly correlated, which is not unexpected given that those pit structures burned after salvage compose a subset of the pit structures that received post-abandonment burning. Animal burials in the fill and floor are highly correlated, suggesting that the process of including animals in the closing of the structure continued well after the house was no longer used as a domicile. And interestingly, human floor burials and floor artifact assemblages co-occur significantly, suggesting either that the floor assemblages comprised burial items or that both the body and the items were haphazardly left in place when the structure was closed, perhaps as a part of a violent act (Figure 10.8; Table 10.3).

Capped floor features are positively correlated with post-abandonment burning (Figure 10.8), suggesting that most post-abandonment burning was part of the same careful closing process that motivated people to cap the floor features. In other words, most post-abandonment burning does not appear to have been accidental or part of a violent act. If it were, we would expect floor features, including main support post holes, in burned structures to remain uncapped and a more significant positive correlation between the occurrence of floor assemblages and burning (Figure 10.8; Table 10.3).

In summary, the closure variables recorded for pit structures suggest that most structures were carefully cleaned of artifacts before they were vacated. Although just under half of the structures were burned at abandonment, those that were burned exhibited capped floor features more often than not, indicating a planned and careful closure of the structure. Small structures were less often associated with burning, capped features, and artifact floor assemblages, and they appear to have been the most haphazardly treated at the time of closure.

Medium structures had the most occurrences of human skeletons on the floor and more floor assemblages. Large structures were most often purposefully burned at abandonment, even when their main support posts had been salvaged and their floor features had been capped. In other words, of all pit structure size classes, large structures underwent the most planned and labor-intensive closure process.

ARTIFACTS ASSOCIATED WITH HOUSES

Floor Artifact Assemblages

Less than a quarter of the structures contained de facto floor artifact assemblages, that is, floor assemblages that were probably not altered substantially as part of the vacancy process (see Figure 10.7). The ones that did contain de facto assemblages, however, allow for some assessment of the variation in activities conducted in the structures. This section compares the relative frequencies of artifact categories that can be associated with specific activities in these structures (Table 10.3). For this portion of the analysis, an attempt was made to count pottery vessels as whole or partially whole vessels rather than simply as sherds. Thus, a reconstructible vessel was counted as a single item regardless of the number of sherds that went into its reconstruction. Also, sherds of a single vessel type (e.g., Rosa Black-on-white bowl) point-located together on a house floor

were counted as a single vessel, even if they did not ultimately refit. Furthermore, in addition to heavy- and light-duty scrapers, used flakes were counted as flaked stone scrapers for this analysis. Finally, awls made from artiodactyl bones were counted both as awls and as artiodactyl bones.

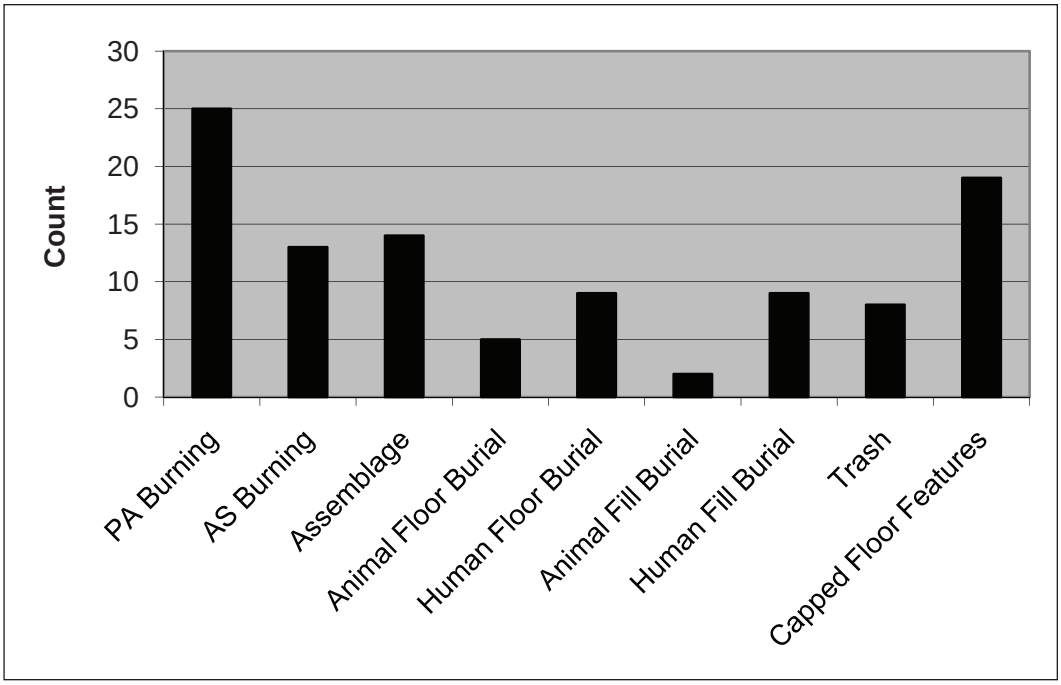

Figure 10.6. Count of pit structures exhibiting the presence each closure attribute. The presence or absence of each attribute was noted in all 60 fully excavated pit structures. PA burning = post-abandonment burning; AS burning = after-salvage burning (main support beams absent).

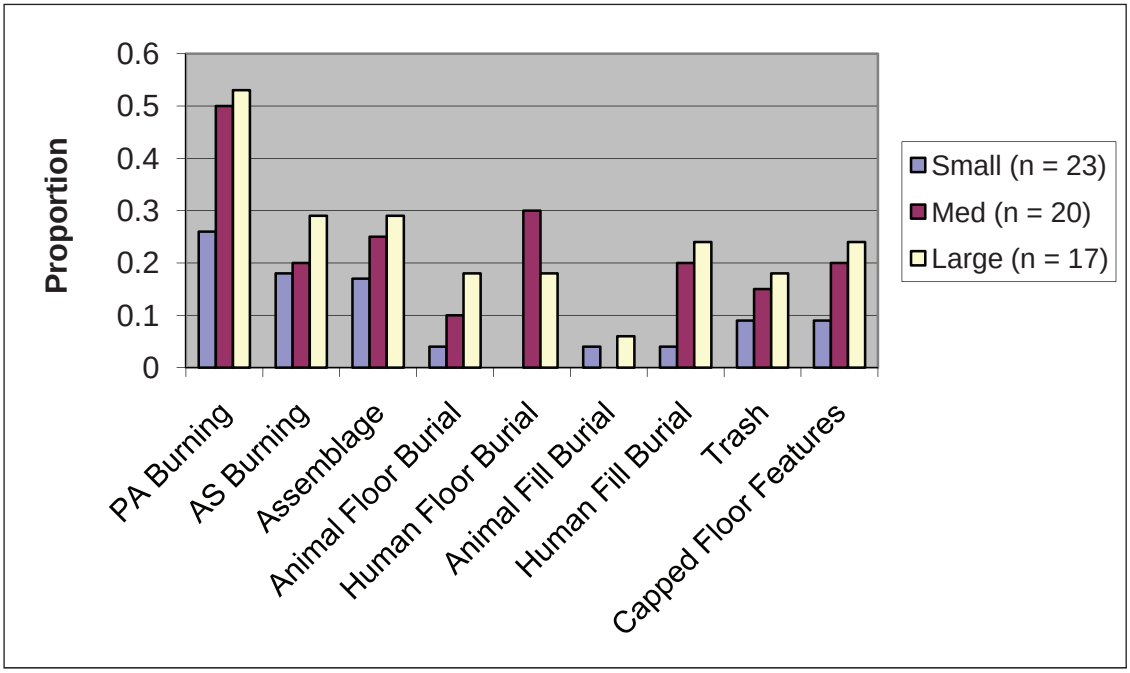

Figure 10.7. Proportion of pit structures of various sizes exhibiting particular closure attributes. PA burning = post-abandonment burning; AS burning = after-salvage burning (main support beams absent).

Table 10.2. Pit Structure Closing Attribute Correlations Based on Presence/Absence

	Pit Structure Size			Closing Attribute								
	Small	Medium	Large	PA Burning	AS Burning	Artifact Assemblage	Animal Floor Burial	Human Floor Burial	Animal Fill Burial	Human Fill Burial	Trash-filled	Capped Floor Features
Small	1.00	**−0.56**	**−0.50**	−0.25	−0.08	−0.17	−0.11	**−0.33**	0.04	−0.24	−0.11	−0.17
Medium	**−0.56**	1.00	**−0.44**	0.12	−0.03	0.14	0.04	**0.30**	−0.13	0.10	0.03	0.06
Large	**−0.50**	**−0.44**	1.00	0.14	0.12	0.03	0.08	0.05	0.09	0.15	0.08	0.12
PA Burning	−0.25	0.12	0.14	1.00	**0.29**	0.13	−0.01	0.21	−0.16	−0.07	0.07	**0.26**
AS Burning	−0.08	−0.03	0.12	**0.29**	1.00	−0.18	−0.16	−0.11	−0.10	0.01	0.15	0.20
Artifact assemblage	−0.17	0.14	0.03	0.13	−0.18	1.00	−0.01	**0.35**	−0.10	−0.11	−0.09	−0.13
Animal floor burial	−0.11	0.04	0.08	−0.01	−0.16	−0.01	1.00	−0.13	**0.28**	0.04	0.24	0.03
Human floor burial	**−0.33**	**0.30**	0.05	0.21	−0.11	**0.35**	−0.13	1.00	−0.08	0.22	−0.03	−0.06
Animal fill burial	0.04	−0.13	0.09	−0.16	−0.10	−0.10	**0.28**	−0.08	1.00	**0.44**	−0.07	−0.08
Human fill burial	−0.24	0.10	0.15	−0.07	0.01	−0.11	0.04	0.22	**0.44**	1.00	0.25	−0.06
Trash-filled	−0.11	0.03	0.08	0.07	0.15	−0.09	0.24	−0.03	−0.07	0.25	1.00	0.09
Capped floor features	−0.17	0.06	0.12	0.26	0.20	−0.13	0.03	−0.06	−0.08	−0.06	0.09	1.00

Notes:

Bolded correlations are significant at $p < 0.05$; $n = 60$.

PA burning = post-abandonment burning.

AS burning = after-salvage burning (main support beams absent).

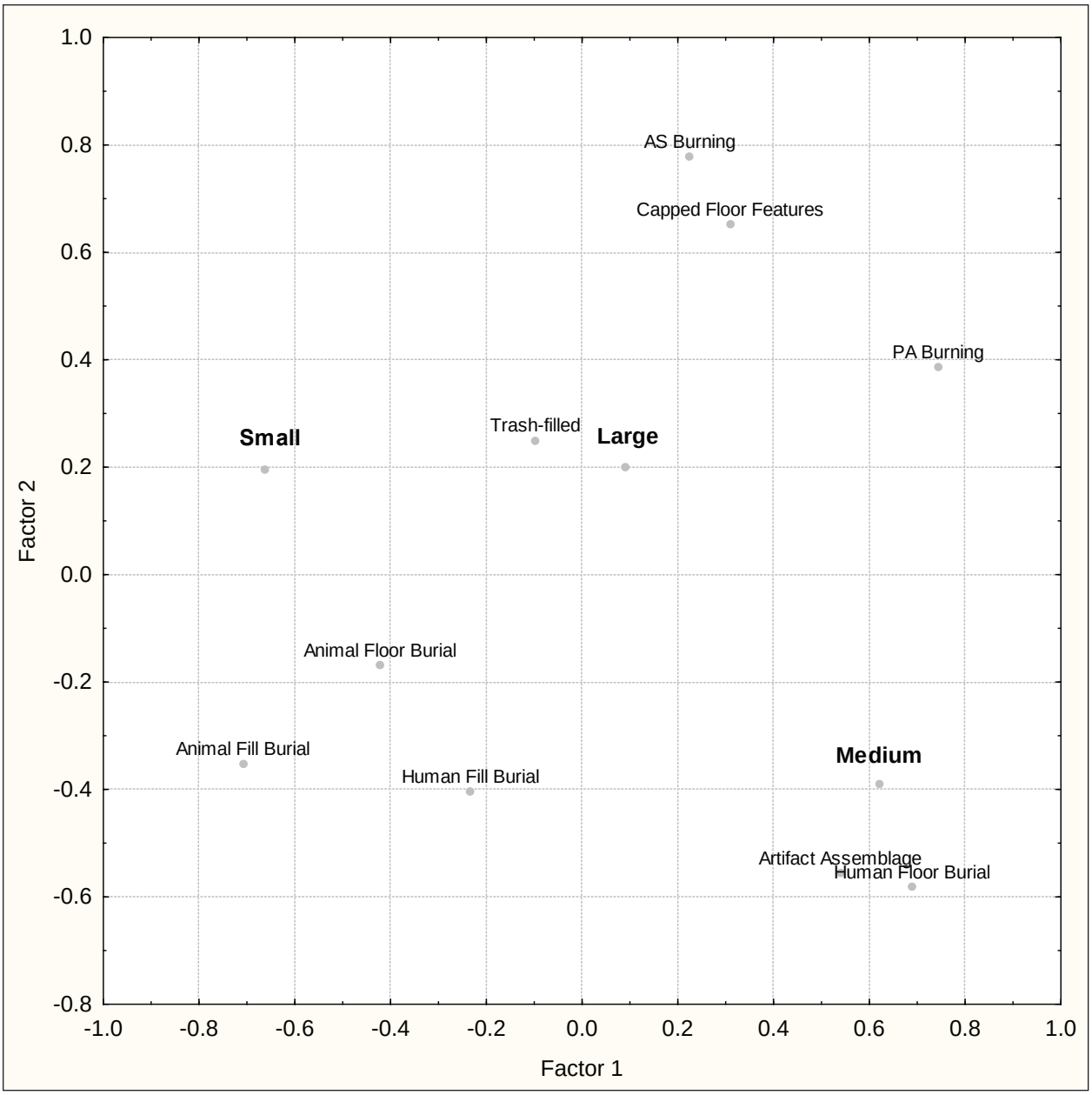

Figure 10.8. Scatterplot of scores on the first two principal components (or factors) derived from the correlation matrix for pit structure closing attributes.

Table 10.3. Artifact Categories Used in Household Activity Comparison and Primary and Secondary Uses of Each Artifact Category

Artifact Category	Primary Use	Secondary Use
Axe	Chopping wood	Weapon
Maul	Quarrying and shaping building stone	Possible weapon
Projectile point	Hunting	Weapon
Core/hammerstone	Producing flaked stone tools	
Flaked stone scraper	Cutting and scraping, especially processing of hunted game	Plant cutting, bone or wood working
Ground stone tool	Grinding plants, especially maize	
Pecking stone	Sharpening grinding tools	Shaping building stone
Bone awl	Sewing clothing and baskets	
Grayware jar	Cooking vessel	Storage vessel
Bowl	Serving prepared foods	
Seed jar	Storing liquids and seeds	
Lagomorph	Food	Clothing and tools
Artiodactyl	Food	Clothing and tools
Turkey	Food	Clothing and tools
Polishing stone	Polishing clay and plaster	
Pipe	Ceremony	

Source: Adapted from Potter and Ortman (2004:176–177).

Artifact types associated with Pueblo I pit structure floor assemblages can be categorized as rare, common, and abundant. Most of the artifact types are rare, and these include axes, mauls, projectile points, pecking stones, seed jars, lagomorph and artiodactyl remains, polishing stones, and pipes (Figure 10.9). This suggests that, in general, the activities associated with these items were performed on a less frequent basis—in these contexts—than those associated with more common artifact types. Thus, wood chopping, the quarrying and shaping of stone, hunting, the sharpening of grinding tools, the storage of liquids and seeds, the consumption of rabbits and deer, the polishing of floors and pottery, and ceremonial smoking appear to have been rare activities inside most houses. This is probably an over-simplification, of course. Projectile points, for instance, are not expected to be commonly associated with house floors because they were used almost exclusively outdoors. Thus, households may have participated in hunting activities but their floor assemblages may not reflect this activity. Likewise, animal remains were most likely cleaned out of most houses on a fairly regular basis, substantially reducing their presence on the floor of the house.

More common artifacts on house floors were cores/hammerstones, flaked stone scrapers, bone awls, and bowls, suggesting that flaked stone tool production and maintenance, the processing of animal carcasses, sewing and weaving, and food serving commonly occurred in most houses (Table 10.4). The most abundant artifacts were ground stone tools, grayware jars, and turkey remains (see Figure 10.9). (It should be noted that the abundant turkey remains were associated with two houses at 5LP237 [Table 10.4]). These data suggest that food cooking and storage and the grinding of maize were the most frequent activities conducted in Pueblo I houses.

A correlation analysis of the variables suggests some interesting associations (Figure 10.10; Table 10.5). Small structures are positively correlated with projectile points, flaked stone scrapers, pecking stones, lagomorph and turkey remains, and all of the pottery categories. Medium structures had bone awls and artiodactyl bones on their floors. And large structures contained axes, mauls, and pipes.

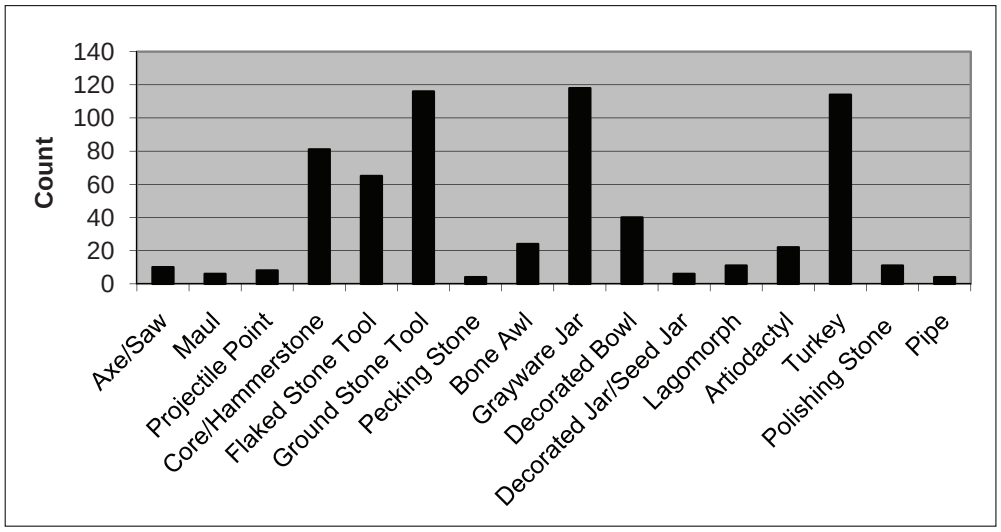

Figure 10.9. Pueblo I pit structure floor assemblage composition, all floor assemblages combined.

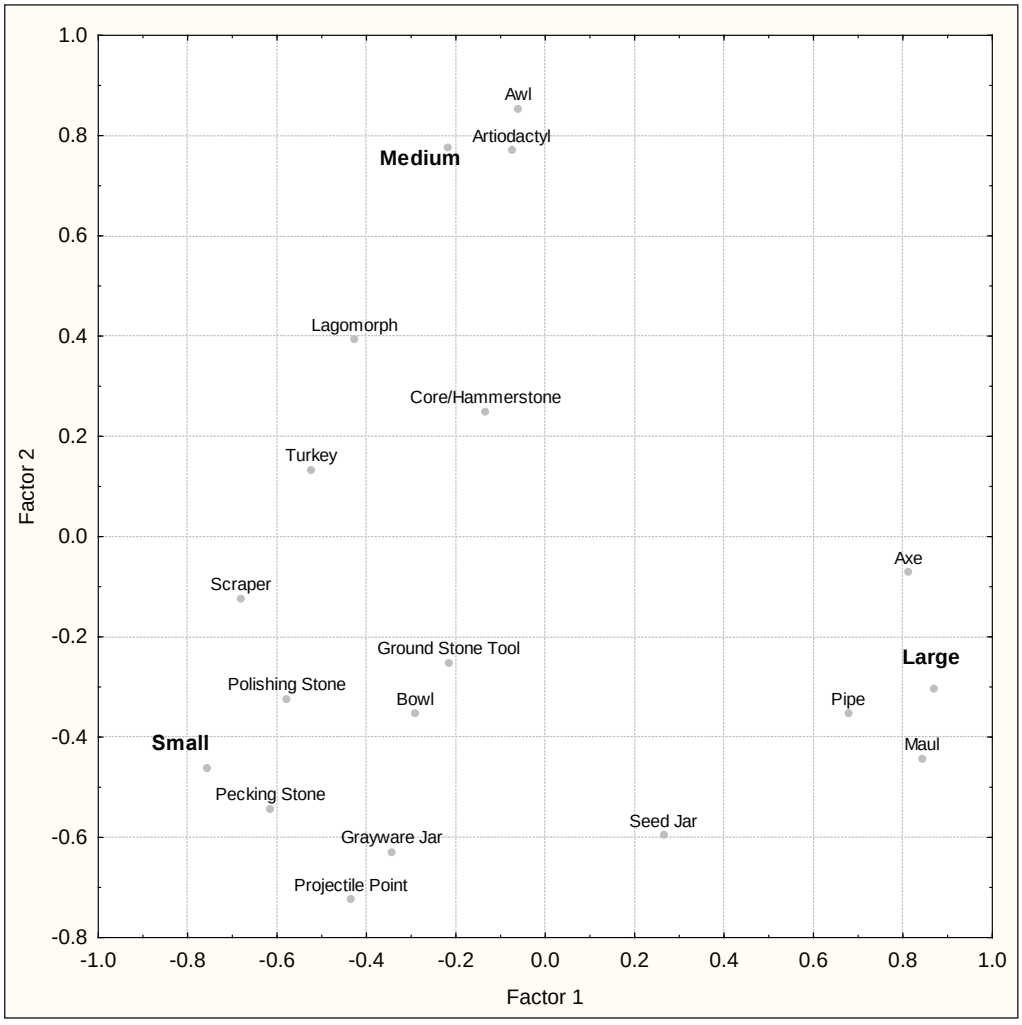

Figure 10.10. Scatterplot of scores on the first two principal components (or factors) derived from the correlation matrix for pit structure floor assemblages.

Table 10.4. Counts of Artifacts Associated with Floor Assemblages from Pueblo I Pit Structures

Site Number–Feature Number	Artifact Type															
	Axe	Maul	Projectile Point	Core/ Hammerstone	Flaked Stone Scraper	Ground Stone Tool	Pecking Stone	Bone Awl	Grayware Jar	Bowl	Seed Jar	Lagomorph	Artiodactyl	Turkey	Polishing Stone	Pipe
5LP237–3	2	0	0	19	7	9	0	7	8	0	0	2	4	1	0	0
5LP237–2	1	0	1	3	3	6	0	0	3	3	0	0	1	32	3	0
5LP237–4	0	0	0	2	13	9	0	1	1	4	0	4	1	78	0	0
5LP187–5	0	0	0	1	1	15	1	1	6	1	0	0	1	0	1	0
5LP187–1	1	1	5	6	8	13	1	0	19	3	3	2	2	1	1	1
5LP241–6	0	0	2	16	10	7	2	2	24	2	0	0	1	0	2	0
5LP2026–3	0	0	0	2	0	4	0	1	16	5	0	0	2	2	0	0
5LP536–1	0	0	0	3	1	1	0	2	7	6	0	0	2	0	1	0
5LP244–15	0	0	0	4	4	7	0	5	2	2	1	2	3	0	1	0
5LP246–2	1	0	0	6	6	21	0	1	12	8	0	0	1	0	1	0
5LP236–3	0	0	0	1	2	4	0	0	2	0	0	0	0	0	0	0
5LP245–134	2	2	0	5	4	8	0	1	7	3	0	0	1	0	1	0
5LP245–83	0	1	0	6	4	8	0	2	0	1	0	1	2	0	0	2
5LP245–58	3	2	0	7	2	4	0	1	11	2	2	0	1	0	0	1
Total	**10**	**6**	**8**	**81**	**65**	**116**	**4**	**24**	**118**	**40**	**6**	**11**	**22**	**114**	**11**	**4**

Table 10.5. Pit Structure Floor Assemblage Variable Correlations Based on Artifact Counts

Pit Structure Size and Artifact Type	Small	Medium	Large	Axe	Maul	Projectile Point	Core/ Hammerstone	Flaked Stone Scraper	Ground Stone Tool	Pecking Stone	Bone Awl	Grayware Jar	Bowl	Seed Jar	Lagomorph	Artiodactyl	Turkey	Polishing Stone	Pipe
Small	1.00	−0.47	−0.47	−0.31	−0.16	0.55	0.12	**0.59**	−0.10	0.50	−0.15	0.39	0.26	0.23	0.37	−0.05	0.35	0.16	−0.04
Medium	−0.47	1.00	−0.56	−0.09	−0.44	−0.21	0.00	−0.34	−0.01	−0.11	0.42	−0.15	−0.22	−0.19	0.01	0.48	−0.04	0.19	−0.36
Large	−0.47	**−0.56**	1.00	0.38	**0.58**	−0.32	−0.11	−0.21	0.11	−0.36	−0.28	−0.22	−0.02	−0.02	−0.36	−0.43	−0.29	−0.33	0.40
Axe	−0.31	−0.09	0.38	1.00	**0.69**	0.02	0.38	−0.03	0.05	−0.24	0.11	0.14	−0.09	0.39	−0.11	0.10	−0.16	−0.07	0.14
Maul	−0.16	−0.44	**0.58**	**0.69**	1.00	0.11	0.02	−0.10	−0.09	−0.12	−0.22	0.06	−0.14	0.48	−0.14	−0.14	−0.22	−0.20	**0.55**
Projectile point	**0.55**	−0.21	−0.32	0.02	0.11	1.00	0.19	0.38	0.20	**0.60**	−0.27	**0.60**	−0.02	**0.68**	0.16	0.02	−0.07	0.35	0.24
Core/hammerstone	0.12	0.00	−0.11	0.38	0.02	0.19	1.00	0.44	0.07	0.37	**0.63**	0.46	−0.28	0.02	0.10	0.49	−0.25	0.04	0.04
Flaked stone scraper	**0.59**	−0.34	−0.21	−0.03	−0.10	0.38	0.44	1.00	0.33	0.35	0.14	0.20	0.02	0.09	**0.70**	0.06	**0.56**	0.04	−0.02
Ground stone tool	−0.10	−0.01	0.11	0.05	−0.09	0.20	0.07	0.33	1.00	0.22	−0.06	0.15	0.25	0.07	0.13	−0.05	−0.01	0.10	−0.00
Pecking stone	0.50	−0.11	−0.36	−0.24	−0.12	**0.60**	0.37	0.35	0.22	1.00	−0.12	**0.68**	−0.19	0.17	−0.11	−0.16	−0.18	0.40	−0.03
Bone awl	−0.15	0.42	−0.28	0.11	−0.22	−0.27	**0.63**	0.14	−0.06	−0.12	1.00	−0.11	−0.30	−0.14	0.35	**0.85**	−0.19	−0.21	−0.12
Grayware jar	0.39	−0.15	−0.22	0.14	0.06	0.60	0.46	0.20	0.15	**0.68**	−0.11	1.00	0.24	0.35	−0.26	0.01	−0.36	0.21	−0.06
Bowl	0.26	−0.22	−0.02	−0.09	−0.14	−0.02	−0.28	0.02	0.25	−0.19	−0.30	0.24	1.00	−0.08	−0.12	−0.13	0.15	0.17	−0.24
Seed jar	0.23	−0.19	−0.02	0.39	0.48	**0.68**	0.02	0.09	0.07	0.17	−0.14	0.35	−0.08	1.00	0.22	0.13	−0.17	−0.07	0.44
Lagomorph	0.37	0.01	−0.36	−0.11	−0.14	0.16	0.10	**0.70**	0.13	−0.11	0.35	−0.26	−0.12	0.22	1.00	0.41	**0.64**	−0.32	0.09
Artiodactyl	−0.05	0.48	−0.43	0.10	−0.14	0.02	0.49	0.06	−0.05	−0.16	**0.85**	0.01	−0.13	0.13	0.41	1.00	−0.21	−0.19	0.09
Turkey	0.35	−0.04	−0.29	−0.16	−0.22	−0.07	−0.25	**0.56**	−0.01	−0.18	−0.19	−0.36	0.15	−0.17	**0.64**	−0.21	1.00	0.03	−0.18
Polishing stone	0.16	0.19	−0.33	−0.07	−0.20	0.35	0.04	0.04	0.10	0.40	−0.21	0.21	0.17	−0.07	−0.32	−0.19	0.03	1.00	−0.30
Pipe	−0.04	−0.36	0.40	0.14	0.55	0.24	0.04	−0.02	−0.00	−0.03	−0.12	−0.06	−0.24	0.44	0.09	0.09	−0.18	−0.30	1.00

Note: Bolded correlations are significant at $p < 0.05$; $n = 14$.

This suggests, at least, that more animal-carcass processing occurred in small structures, and that more ceremonial smoking of tobacco occurred in large structures. Correlated variables include axes and mauls, suggesting either an overlap in classification or a common use for these morphologically similar items; cores/hammerstones and bone awls, suggesting that flaked stone tool production and sewing often occurred in the same structures; flaked stone scrapers and lagomorph and turkey remains, indicating that most flaked stone scrapers were used to process animal carcasses; and artiodactyl remains and bone awls, which is not surprising given that all of the awls in this analysis were made from artiodactyl bones. A less easily interpretable correlation occurred between pecking stones, projectile points, and grayware jars.

In sum, significant differences were apparent in the floor assemblages of small, medium, and large structures. Small structures exhibited the most diverse array of activities associated with them, including animal hunting and processing, sharpening grinding tools, and food serving, storing, and cooking. Medium structures were associated with sewing clothes and baskets and with artiodactyls. And large structures frequently were the locus of maize grinding and tobacco smoking. The following section broadens the analysis of household artifacts to include all artifacts found in association with each household, including those recovered from fill, midden, and extramural features.

Other Artifact Assemblages

Forty-one Pueblo I sites or loci in the ALP project area yielded substantial artifact assemblages. Many of these sites contained more than one house, and the artifact assemblages of these frequently were not easily separable (e.g., when houses shared a midden) and were therefore combined. Sacred Ridge was divided into nine habitation loci, many of which contained more than one house. For this analysis these loci are treated the same as sites. Moreover, pit structure size is not considered in this section because many of the sites and loci with multiple pit structures contained structures of more than one size class.

Table 10.6 presents the counts of major artifact classes by site. To simplify the analysis, jars of all types were combined, as were bowls. Unlike the floor assemblage analysis above, in this analysis ceramic counts are sherd counts rather than numbers of reconstructible vessels. Finally, mauls were excluded from this section due to their absence in most site assemblages.

To explore patterning among the artifact variables and cases presented in Table 10.6, a correspondence analysis[3] was conducted on the data. Figure 10.11 is a scatterplot of the first two dimensions of the analysis. In this plot, each dot represents a single case (site or locus). Two well-defined clusters of cases are indicated on either side of the 0.0 point along Dimension 1. This suggests that two distinct sets of activities (as represented by the various associated artifact categories) were emphasized at Pueblo I habitation sites.

[3] Correspondence analysis (CA) is a multivariate technique that employs a chi-square statistic on contingency-table cell values (usually counts) to produce components or "dimensions" (Baxter 1994). Dimensions may be thought of as summary variables, and each analysis produces as many of these summary variables as are needed to account for the total variation in the assemblage. The first two, however, account for the largest proportion of that variation, and, by plotting these on a two-dimensional scatterplot, that variation can be explored visually. In general, the closer variables and cases are to each other on the plot, the more highly correlated they are in the assemblage(s); the farther apart, the less correlated they are. This method has several advantages over other exploratory methods of data examination. First, the use of counts (rather than percentages) and row and column marginals to generate the coefficients circumvents problems of calculating percentages with very small sample sizes (cells are weighted appropriately based on sample size) as well as the closed-sum problem that arises when using percentages. Second, CA generates coefficients for both cases and variables, allowing the researcher to display each on the same scatterplot and thereby observe visually which variables are causing the correlations among cases. And finally, CA is a multivariate technique that allows for the comparison of many cases and variables at once in order to tease out patterns among them. It is important to note that CA is purely an exploratory method and does not provide a test of significance in any of its calculations.

Table 10.6. Counts of Artifacts Associated with Pueblo I Sites, and with Loci (L) at Sacred Ridge (5LP245)

Site	Number of Houses	Axe	Projectile Point	Core/ Hammerstone	Flaked Stone Scraper	Ground Stone Tool	Pecking Stone	Bone Awl	Grayware Jar	Bowl	Seed Jar	Lagomorph	Artiodactyl	Turkey	Polishing Stone	Pipe
5LP185	3	20	24	182	280	117	15	14	1,387	900	36	317	58	12	18	3
5LP187	4	36	17	107	102	102	6	5	602	338	21	29	17	63	13	4
5LP236	2	0	2	41	44	16	0	1	201	114	7	0	2	0	3	1
5LP237	4	2	16	109	218	47	3	17	255	210	2	196	2	164	4	3
5LP238	1	5	4	30	243	10	0	0	67	82	2	2	0	3	2	3
5LP482	1	5	1	22	6	2	4	2	64	44	1	3	0	0	5	1
5LP503	2	0	1	22	34	4	1	3	64	32	0	173	4	0	3	1
5LP174	2	1	1	5	17	5	1	0	41	25	0	0	0	0	1	0
5LP176	1	6	3	39	90	11	3	3	130	140	10	23	10	0	1	0
5LP177	2	10	13	63	22	61	9	24	413	501	9	128	30	326	3	1
5LP178	1	0	0	10	12	15	1	7	26	17	2	19	2	0	0	0
5LP179	1	3	4	33	34	25	4	4	370	289	4	43	3	3	2	0
5LP239	1	1	3	33	11	43	6	5	216	350	11	69	9	10	6	0
5LP240	1	27	12	20	101	11	5	6	329	249	22	22	10	5	5	0
5LP241	1	0	6	68	67	29	4	10	482	261	8	43	7	0	6	1
5LP242	1	8	12	67	67	67	4	9	297	387	9	22	16	0	10	0
5LP630	1	0	0	2	7	8	0	0	5	9	0	0	1	0	0	0
5LP243	1	5	1	74	43	33	3	2	212	88	3	3	2	0	9	0
5LP634	2	5	1	38	16	18	8	2	284	109	0	5	1	75	5	1
5LP184	3	14	17	75	204	66	2	8	283	172	9	57	2	10	3	1
5LP244	2	1	9	39	164	25	1	12	271	212	2	44	17	2	2	1
5LP246	3	1	5	29	141	46	1	0	186	102	2	5	4	0	4	7
5LP248	3	0	0	8	43	8	0	0	53	20	4	1	1	0	0	1
5LP510	1	3	1	15	55	18	0	0	13	7	0	1	0	0	1	0
5LP511	3	5	2	60	142	20	0	0	133	67	1	4	1	1	5	2
5LP536	1	5	4	20	23	2	1	2	107	197	2	13	2	1	3	0
5LP549	1	1	1	14	15	3	0	1	15	3	0	3	1	0	0	0
5LP614	1	0	0	1	19	1	0	0	5	7	0	23	2	1	1	0
5LP2026	3	9	13	55	72	110	11	17	1,211	794	57	192	27	23	11	3
5LP2091	1	0	6	19	12	33	3	1	92	79	0	20	2	5	2	1

Table 10.6. Counts of Artifacts Associated with Pueblo I Sites, and with Loci (L) at Sacred Ridge (5LP245) (continued)

Site	Number of Houses	Axe	Projectile Point	Core/ Hammerstone	Flaked Stone Scraper	Ground Stone Tool	Pecking Stone	Bone Awl	Grayware Jar	Bowl	Seed Jar	Lagomorph	Artiodactyl	Turkey	Polishing Stone	Pipe
5LP2088	1	3	5	19	6	8	0	0	11	19	0	5	0	0	0	0
5LP2089	1	2	1	3	5	6	0	0	3	9	0	1	1	0	1	0
5LP245 L1	2	1	1	24	59	37	1	3	93	65	0	24	5	0	1	0
5LP245 L2	2	9	4	22	40	17	0	2	97	71	3	35	20	4	1	0
5LP245 L3	2	6	35	84	369	29	3	8	212	293	10	120	152	4	5	2
5LP245 L4	2	8	21	78	261	67	1	11	264	362	20	60	26	32	0	0
5LP245 L5	2	6	9	43	274	29	0	19	132	225	21	175	12	6	0	3
5LP245 L6	1	2	4	23	42	9	2	3	73	85	3	36	7	2	0	1
5LP245 L7	2	9	14	98	571	100	6	26	483	519	20	96	34	162	1	12
5LP245 L8	2	2	10	52	214	20	3	8	225	218	10	43	12	29	0	3
5LP245 L9	2	12	24	79	454	36	6	12	352	361	24	134	29	15	5	4

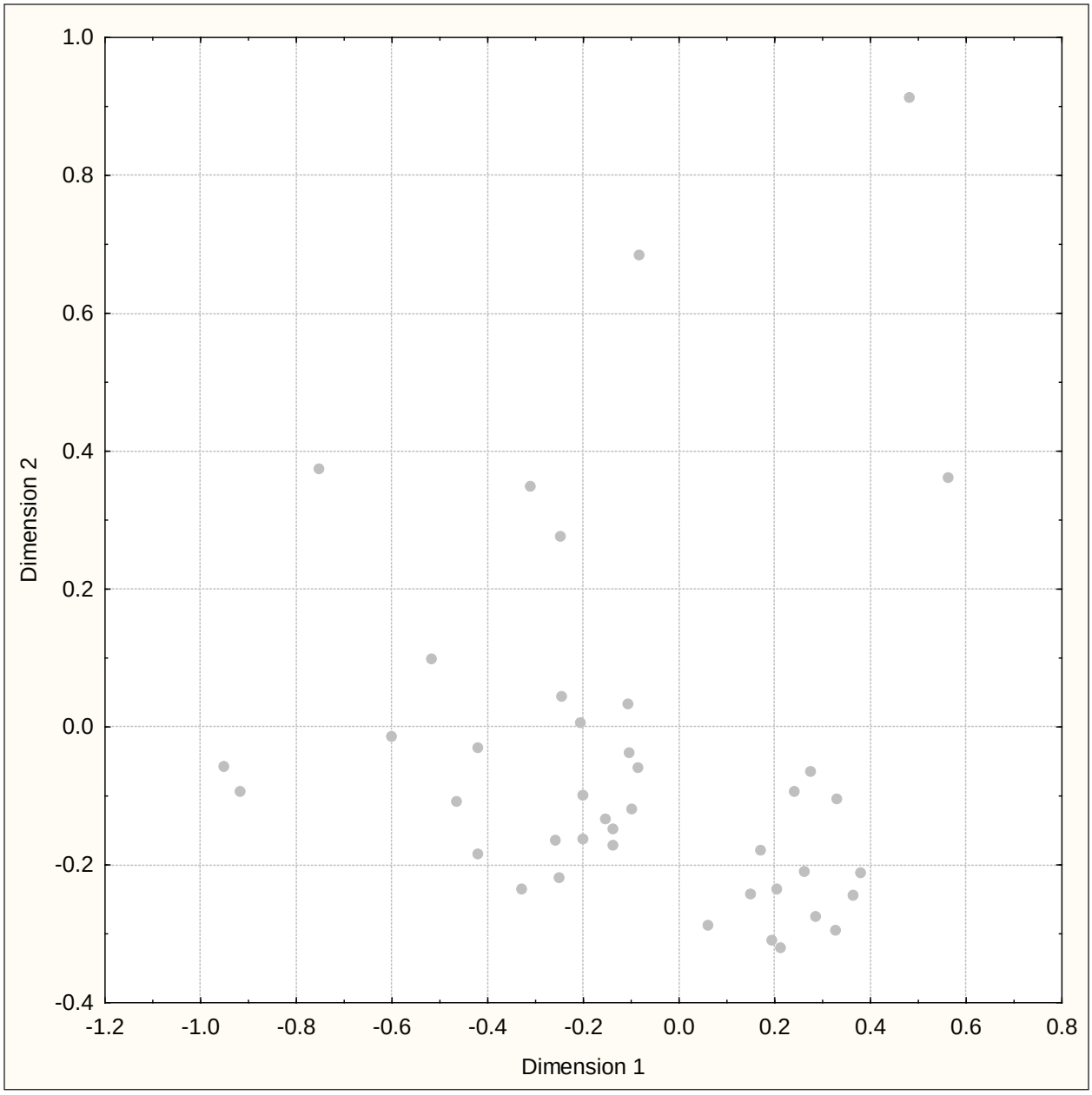

Figure 10.11. Scatterplot of the first two dimensions of a correspondence analysis performed on the count data in Table 10.6. Each dot represents a single case (site or locus). Note two clusters of cases on either side of the 0.0 point along Dimension 1.

Figure 10.12 plots the variables in this analysis and shows which artifacts are causing the clustering of cases seen in Figure 10.11. The cluster to the right of the 0.0 point along the x axis is most closely correlated with jars and bowls, pecking and polishing stones, ground stone tools, axes, and seed jars—many of the items used in everyday domestic activities, especially cooking, processing, and storing maize, and producing and using pottery. The items to the left of the 0.0 point, on the other hand, are all related to hunting, processing hunted game, manufacturing stone tools (many of which were ostensibly for the processing of hunted game), and ritual. These items are flaked stone scrapers, projectile points, cores/hammerstones, the remains of hunted game, and pipes (see Figure 10.12). This is not to say that maize grinding and cooking did not occur at these sites as well, but rather, the activities represented by the various artifact categories were differentially emphasized among the households in the project area. The fact that the cases are clustered so tightly and that the variables causing the clustering are behaviorally related to such a degree argues for the strength and behavioral significance of the pattern.

Dimension 2 of the case plot (the y xis) (see Figure 10.11) appears to separate out a few of the cases based on the high frequency of turkey bones in their assemblages (see Figure 10.12). The frequency of turkey bones is actually a problematic variable because some of the high counts associated with various sites are due to one or a few turkey burials that severely elevate the bone counts of this species, even though only one or a few individuals may be represented. This is not the case with lagomorphs or artiodactyls, which were not interred as turkeys sometimes were. When turkey-count as a variable is eliminated from the analysis, the clustering and separation of cases on either side of the 0.0 point along the x axis is even stronger (Figure 10.13).

In summary, patterning exhibited by total artifact assemblages suggests two distinct sets of activities associated with Pueblo I households—one that emphasized the cooking, serving, and processing of maize, and the production and use of pottery, and one that emphasized the production and use of stone tools, the hunting and processing of fauna, and ritual. These patterns are examined in greater detail in Chapter 12 through an assessment of the spatial distribution of these activities throughout the project area.

EXTRAMURAL FEATURES

Many of the activities conducted by the Pueblo I household occurred outside yet still in the vicinity of the main domicile. These activities involved the construction and use of extramural features. Nine extramural feature types were common on habitation sites in the ALP project area: enclosures, thermal pits, non-thermal pits, surface rooms without hearths, surface rooms with hearths, pit rooms without hearths, pit rooms with hearths, middens, and inhumations (Table 10.7). The following section defines and discusses each of these feature types.

Enclosures

Referred to as stockades in the excavation methods section of the ALP project research design but hereafter referred to as enclosures, this type of feature is defined as

> [an alignment] that surrounds a habitation. Stockades were constructed of upright posts and vary in robustness. Some appear to have been built of posts up to 30 cm in diameter, while others appear to have been built of brush. The presence of burned adobe suggests that some may have also been mudded. They are generally visible as post hole alignments or linear smears of charcoal and adobe. (Potter 2006:89)

Although much less common, cobble aprons or rings are also considered enclosures. These features were between 0.5 m and 2.0 m wide and were made of unshaped gravels, cobbles, and light refuse, and had little or no depth. They often surrounded the pit structure and associated surface rooms.

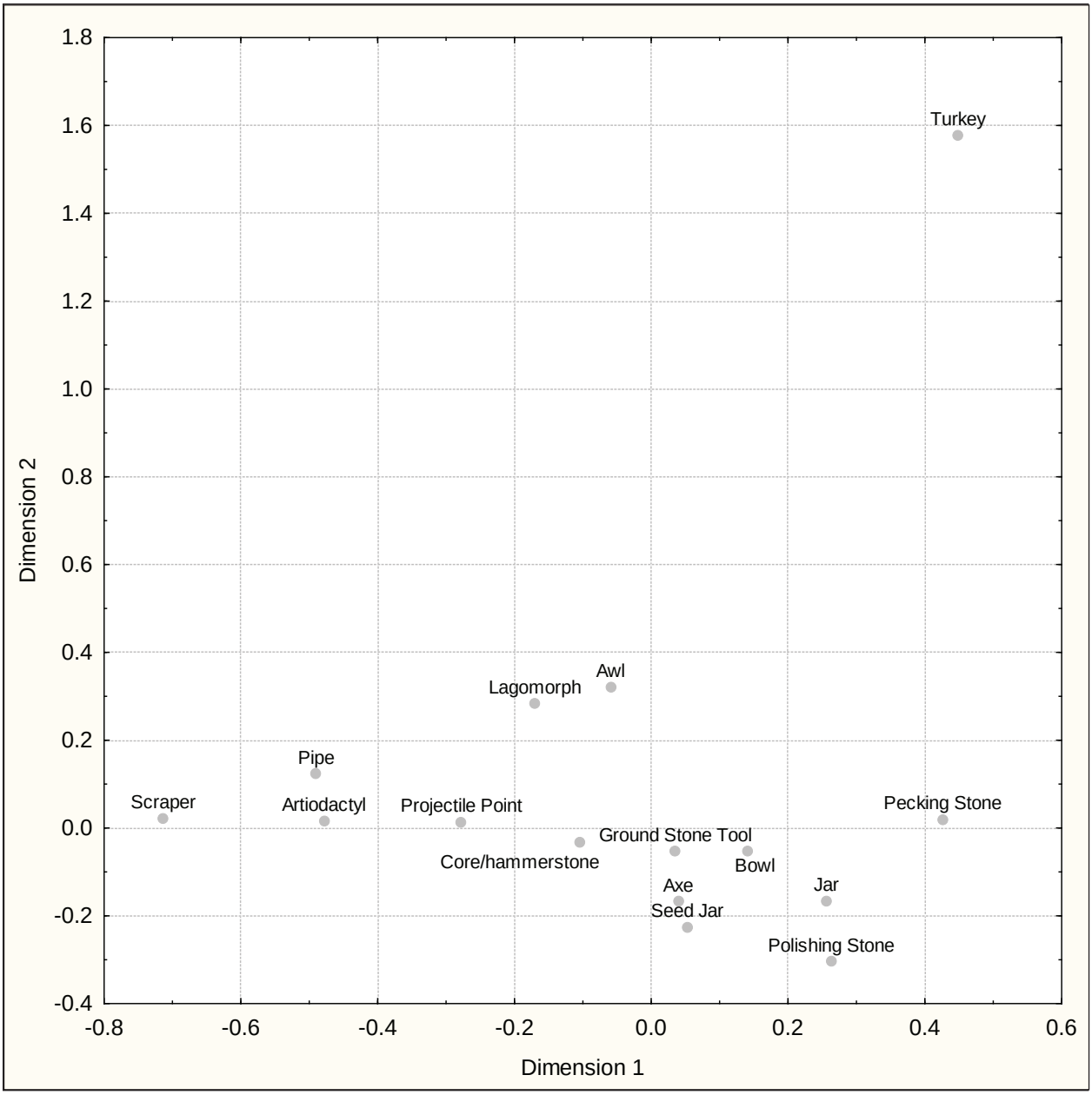

Figure 10.12. Scatterplot of the first two dimensions of a correspondence analysis performed on the count data in Table 10.6. Each dot represents a single variable (artifact category). Note the various artifact types on either side of the 0.0 point along Dimension 1, causing the clustering of cases seen in Figure 10.11.

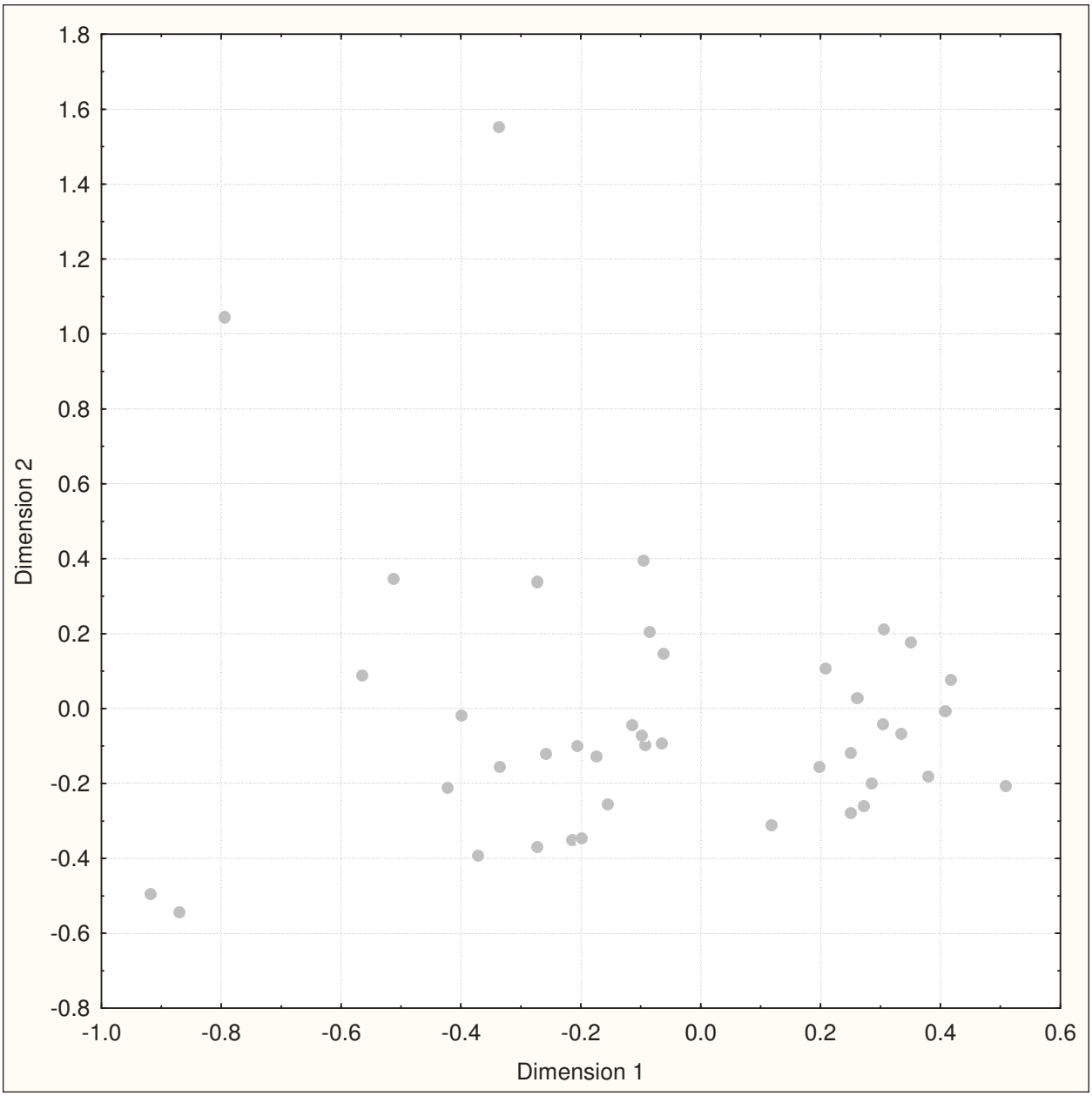

Figure 10.13. Scatterplot of the first two dimensions of a correspondence analysis performed on the count data in Table 10.6, excluding the variable turkey. Each dot represents a single case (site or locus). Note the two clusters of cases on either side of the 0.0 point along Dimension 1.

Table 10.7. Counts of Extramural Features Associated with Pueblo I Sites, and with Loci (L) at Sacred Ridge (5LP245)

	Feature Type								
Site	Enclosure	Thermal Pit/ Hearth	Non-thermal Pit	Surface Room without Hearth	Surface Room with Hearth	Pit Room without Hearth	Pit Room with Hearth	Midden	Inhumation
5LP174	0	0	0	0	0	0	0	0	0
5LP176	1	1	0	0	0	0	0	1	3
5LP177	2	6	0	4	0	0	2	1	18
5LP178	0	3	0	4	0	0	0	0	0
5LP179	1	4	0	1	0	1	0	2	1
5LP239	1	4	0	0	1	0	0	2	5
5LP240	1	0	2	1	0	0	0	1	1
5LP241	1	0	2	1	0	0	0	1	1
5LP242	2	3	1	1	0	2	0	0	3
5LP243	0	5	0	4	0	1	0	2	1
5LP630	0	7	0	1	0	0	0	1	0
5LP634	1	3	0	4	1	0	0	1	0
5LP185	0	8	18	0	0	4	0	0	20
5LP187	2	20	5	5	2	0	0	2	3
5LP236	0	2	1	0	0	0	0	2	0
5LP237	1	11	1	0	0	0	0	0	8
5LP238	0	3	2	0	0	0	0	1	1
5LP482	0	1	0	0	0	0	0	1	0
5LP503	0	0	0	0	0	0	0	1	1
5LP184	1	11	11	4	2	1	1	2	5
5LP244	0	8	5	3	2	0	1	4	2
5LP246	0	1	4	0	0	3	0	1	4
5LP248	0	0	1	0	0	0	0	1	6
5LP510	0	1	1	0	0	0	0	0	0
5LP511	0	1	0	10	0	2	0	0	3
5LP536	1	1	0	9	1	0	0	1	0
5LP549	0	0	1	3	0	0	0	0	0
5LP614	0	0	10	8	0	0	0	0	0
5LP245 L1	1	1	1	6	1	0	0	0	1
5LP245 L2	0	2	3	1	1	0	0	0	0
5LP245 L3	2	1	0	1	0	0	0	1	14
5LP245 L4	0	0	1	2	0	0	0	1	2
5LP245 L5	0	3	1	0	0	1	0	1	2
5LP245 L6	0	1	0	1	0	0	0	0	3
5LP245 L7	1	0	4	0	0	1	0	2	1
5LP245 L8	1	3	2	0	0	0	0	1	1
5LP245 L9	1	3	1	4	1	1	0	1	9
5LP2026	1	3	1	3	1	0	0	1	0
5LP2088	0	0	0	1	0	0	0	1	0
5LP2089	0	0	0	2	1	0	0	0	0
5LP2091	1	1	0	0	0	0	0	1	0
Total	**23**	**122**	**79**	**84**	**14**	**17**	**4**	**38**	**119**

Thermal Pits

These are pits that show signs of thermal use, including formal hearths, slab-lined pits, roasting pits, pits with burning, and fire pits. With the exception of those interpreted as kilns (n = 3), their primary function is assumed to be for food cooking. Thermal pits located in pit structures, surface rooms, or pit rooms are not included in this category.

Non-thermal Pits

These are pits with no evidence of oxidation or use as a thermal pit. They include borrow pits, storage pits, and refuse pits. Post holes may also be considered non-thermal pits, but these were excluded from this analysis of extramural features. Non-thermal pits located in pit structures, surface rooms, or pit rooms are not included in this category.

Surface Rooms

These features generally originate at the prehistoric ground surface level, or slightly below the surface. Most had walls built of posts covered with adobe and were footed on unshaped cobbles or sandstone slabs. Floors were often unprepared, although some rooms were floored with slabs or had a floor of adobe and wood. Surface rooms may be isolated or contiguous. Surface rooms with hearths were considered more likely to have been habitation rooms. Surface rooms without hearths were most likely storage rooms or processing rooms, or both. If the presence or absence of a hearth was not determined for a surface room due to damage by previous excavations or looting, a lack of preservation, or a lack of excavation by SWCA, the feature was not included in this analysis of extramural features.

Pit Rooms

Pit rooms are semi-subterranean rooms that may be slab lined. They may be isolated or occur in noncontiguous arcs. In contrast to surface rooms, pit rooms have depths more than 30 cm below the prehistoric surface. Pit rooms with hearths are considered more likely to have been habitation rooms. Those without hearths were most likely storage rooms or processing rooms, or both. If the presence or absence of a hearth was not determined for a pit room due to damage by previous excavations or looting, a lack of preservation, or a lack of excavation by SWCA, the feature was not included in this analysis of extramural features.

Middens

Middens are the formal trash areas of a site and usually located south or east of a pit structure. Most Pueblo I sites in the Durango area have thin sheet middens with little or no depth. Trash-filled habitation features were not included in this category.

Inhumations

Inhumations are defined as the deliberate deposit of a human body, whether buried in a pit or laid on the floor of a structure. Many Pueblo I inhumations involved burial in a pit with grave goods. This feature type does not include isolated or processed human remains (remains that have been intentionally crushed, cut, burned, and broken by a human being into small fragments at or soon after the time of death), and it should be noted that the feature type refers to the context of inhumation rather than the interred individual. Thus, inhumations may contain the remains of more than one individual. For the purposes of this analysis, individuals intentionally placed in structure fill or on structure floors are considered inhumations.

Frequency of Extramural Features

Figure 10.14 presents the frequency distribution of extramural features by type across the project area. The most common feature types were thermal pits and inhumations. Non-thermal pits and surface rooms without hearths were also fairly numerous. Middens were less numerous overall, but they were present at the majority (68%) of sites (Figure 10.15). Enclosures also were not numerous overall, but were present at about 45 percent of sites (Figure 10.15).

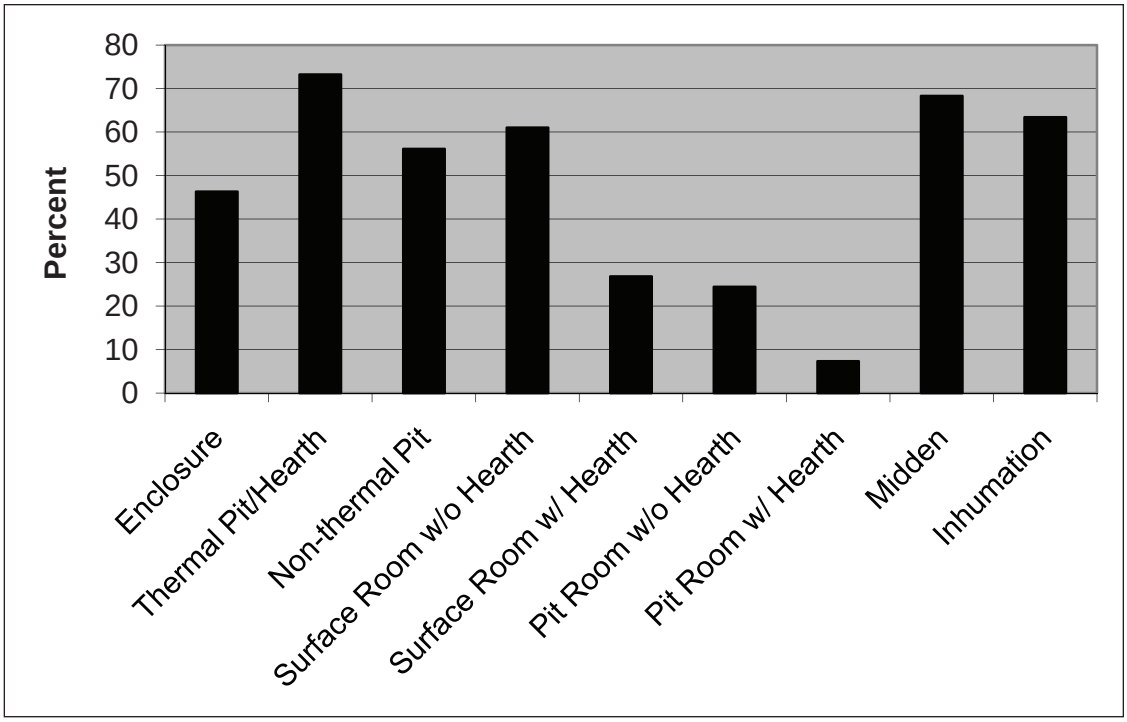

Figure 10.14. Total counts of extramural features by type in the project area.

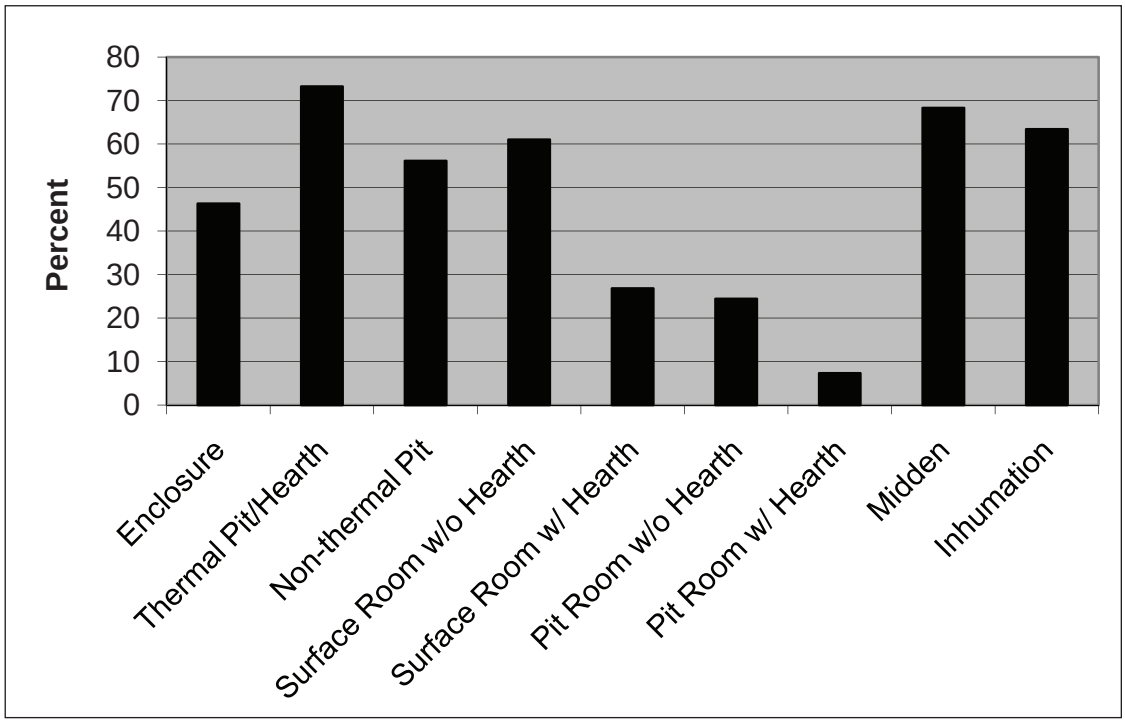

Figure 10.15. Percentages of Pueblo I habitation sites with each extramural feature type present.

Most cooking activities not associated with the pit structure occurred in extramural contexts, rather than in surface rooms or pit rooms. The vast majority of surface rooms and pit rooms did not contain hearths, and thus they are interpreted as primarily storage facilities. Over half of the sites contained surface rooms without a hearth, whereas only a quarter of the sites had surface rooms with hearths (Figure 10.15). Surface rooms were also much more numerous than pit rooms (Figures 10.14 and 10.15). Finally, the large number of sites with non-thermal extramural pits suggests that storage occurred not only in pit structures and surface rooms but also in extramural contexts.

Activity Variation among Surface Rooms and Pit Rooms

As indicated above, it is generally assumed that surface rooms and pit rooms containing hearths were likely the locus of habitation and common domestic activities such as cooking. Rooms without hearths, on the other hand, were more likely storage rooms. It is also possible, however, that rooms without hearths were places for daily domestic activities, such as maize grinding, that did not require a hearth but that may have been better achieved in an enclosed and protected space. To assess this possibility, this section explores the artifact assemblages associated with surface rooms and pit rooms with and without hearths. The analysis here uses only a few of the major artifact categories to explore possible activity variation among these feature types; these are grayware jars, bowls, seed jars, ground stone tools, flaked stone scrapers (including used flakes), and cores/hammerstones. Ceramic vessel counts are sherd counts rather than reconstructible vessel counts. (Note that the behavioral correlates for these various artifact types are presented in Table 10.3.)

Table 10.8 presents the counts of artifacts by site and room feature type, and includes only those cases that yielded artifact assemblages. Table 10.9 is matrix of correlations among the feature and artifact types as listed in Table 10.8. Interestingly, surface rooms without hearths, by far the most numerous room feature type (see Figure 10.14), correlated positively with cores/hammerstones and ground stone tools, indicating that flaked stone tool production and maize grinding occurred in at least some of these features. Seed jars also correlated positively with surface rooms without hearths, confirming a storage function for some of these rooms. Much less common, surface rooms with hearths exhibited no positive correlations with any of the artifact types, due ostensibly to their having been cleaned of artifacts during their use—and just prior to their closure—as habitation structures (Table 10.9).

Like surface rooms without hearths, pit rooms without hearths appear to have functioned both as storage facilities and as enclosed spaces for activities not requiring a hearth. This feature type correlated most positively with bowls, jars, and seed jars, all suggestive of storage. (The high bowl frequency may be from the storage of these items; it does not seem likely that food serving would have been conducted extensively in non-habitation or non-ritual contexts.) In addition, however, these features exhibited positive correlations with cores/hammerstones and flaked stone scrapers, all suggestive of common domestic activities. Pit rooms with hearths, on the other hand, were positively correlated with cooking jars and ground stone items, items associated with common domestic activities (see Table 10.9).

Table 10.8. Counts of Artifacts Associated with Surface Rooms and Pit Rooms (with and without hearths) at Pueblo I Sites and Loci (L) at Sacred Ridge (5LP245)

Site	Feature Type				Artifact Type					
	Surface Room without Hearth	Surface Room with Hearth	Pit Room without Hearth	Pit Room with Hearth	Bowl	Grayware Jar	Core/ Hammerstone	Flaked Stone Scraper	Ground Stone Tool	Seed Jar
5LP177	4	0	0	0	59	71	22	5	22	2
5LP177	0	0	0	2	34	120	3	3	7	1
5LP179	0	0	1	0	2	8	0	0	3	0
5LP179	1	0	0	0	20	61	6	2	2	1
5LP239	0	1	0	0	11	17	1	0	1	0
5LP240	1	0	0	0	17	50	2	5	1	2
5LP242	0	0	2	0	18	28	0	0	3	0
5LP243	4	0	0	0	2	6	2	0	1	0
5LP243	0	0	1	0	52	120	28	5	6	3
5LP634	4	0	0	0	15	36	3	4	1	0
5LP634	0	1	0	0	0	4	0	0	0	0
5LP185	0	0	4	0	45	55	6	13	0	4
5LP187	5	0	0	0	24	14	22	9	9	2
5LP187	0	2	0	0	14	12	7	3	10	0
5LP184	4	0	0	0	24	49	17	28	7	1
5LP184	0	0	1	0	13	39	2	10	0	1
5LP244	0	2	0	0	7	19	4	18	1	0
5LP244	1	0	0	0	0	1	0	4	0	0
5LP244	0	0	0	1	6	3	0	0	0	0
5LP511	3	0	0	0	3	5	1	10	1	1
5LP511	0	0	1	0	4	8	3	6	2	1
5LP536	0	1	0	0	2	2	2	3	0	0
5LP549	2	0	0	0	2	0	1	1	1	0
5LP614	1	0	0	0	1	1	0	5	0	0
5LP245 L1	1	0	0	0	5	6	1	7	2	0
5LP245 L2	0	1	0	0	3	1	2	1	1	0
5LP245 L2	1	0	0	0	0	10	0	1	1	0
5LP245 L5	0	0	1	0	13	3	4	9	0	1
5LP245 L7	0	0	1	0	63	57	19	94	5	0
5LP245 L9	4	0	0	0	65	72	10	79	0	6
5LP245 L9	0	0	1	0	146	116	21	139	2	6
5LP2026	0	1	0	0	0	0	0	1	0	0
5LP2026	3	0	0	0	50	98	4	2	2	1
5LP2089	1	0	0	0	0	0	0	1	0	0

Table 10.9. Surface Room and Pit Room Assemblage Variable Correlations Based on Counts in Table 10.8

	Feature Type			
Artifact Type	Surface Room without Hearth	Surface Room with Hearth	Pit Room without Hearth	Pit Room with Hearth
Bowl	0.09	−0.24	0.29	0.03
Grayware jar	0.08	−0.29	0.21	0.31
Core/hammerstone	0.29	−0.16	0.13	−0.11
Flaked stone scraper	0.01	−0.14	0.17	−0.09
Ground stone tool	0.34	−0.00	−0.09	0.11
Seed jar	0.19	−0.29	**0.36**	−0.05

Note: Bolded correlations are significant at $p < 0.05$; $n = 34$.

SUMMARY: ADDRESSING THE RESEARCH DESIGN

The main goal of this chapter has been to characterize the Pueblo I house and household in the ALP project area and to address some of the more basic questions about households posed in the research design (see Chapter 7, Pueblo I Research Questions). This final section repeats those questions and offers some brief responses, summarizing much of the patterning noted above.

What is the architectural expression of the early Pueblo I household in the Durango area?

Following Lightfoot (1994), the early Pueblo I household appears to have consisted of a single, extended-family-type group that occupied a single pit structure as its main domicile. The composition and size of these household groups varied considerably in the Ridges Basin community. Associated with this main domicile were often a number of surface rooms or pit rooms, or both, the vast majority of which did not contain hearths and operated both as storage rooms and as enclosed spaces for tasks not requiring a hearth. In addition, numerous extramural hearths and roasting pits were associated with these architectural structures, indicating that much of the domestic activity of the household occurred just outside the pit structure.

The substantial differences in the frequency and distribution of features, closure attributes, and floor artifact assemblages among small, medium, and large pit structures suggest some functional variation among the various house size categories. Large structures, for example, in some cases appear to have had a ritual as well as a domestic function. This argues against a strict correlation between house size and household size—large houses may not always represent large households.

Did each household perform the same range of activities, or was there some level of socioeconomic interdependence among households in a settlement cluster or community?

The data presented in this chapter suggest some variation and clustering of activities among households. In particular, some households exhibited high frequencies of artifacts related to everyday domestic activities, especially the cooking, processing, and storage of maize, and the production and use of ceramic vessels. Others exhibited inordinately high frequencies of items related to hunting, the processing of hunted game, the manufacture of stone tools (many likely used for the processing of hunted game), and ritual. These items include flaked stone scrapers, projectile points, cores/hammerstones, the remains of hunted game, and pipes. It is possible that this dichotomy represents some level of activity specialization among households. This dichotomy will be further explored in Chapter 12 to determine if there is a spatial pattern, or clustering, of these or other activities. In addition, possible economic interdependence and specialization of household production, including possible ceramic production variation among households, is examined in greater detail in that chapter.

What do surface rooms represent functionally?

A small percentage (15%) of surface rooms and pit rooms contained hearths and functioned as habitation rooms. Rooms without hearths functioned either as storage rooms or as enclosed spaces in which to conduct tasks not requiring hearths, such as grinding maize, producing stone tools, and processing animal carcasses. Pit rooms without hearths may have been used more consistently than surface rooms without hearths as storage facilities; this may be, however, simply a function of the small number of pit rooms relative to surface rooms.

Were all pit structures domestic, or were ritual functions associated with some?

Large structures appear to have functioned as ritual structures significantly more often than did medium and small structures. Large structures (those with a floor area greater than 28.5 m^2) stood out in many respects: They contained more floor features than did small and medium structures; were the only size class to contain conical floor pits (a possible ritual feature); were closed more carefully and systematically than were small and medium structures; contained the most animal burials on the floor and in the fill; were burned post-abandonment most often; and had tobacco pipes in the floor assemblage more consistently than did small and medium structures. The distributions of these structures and their attributes throughout the project area are further discussed in Chapter 11, Settlement Clusters, and in Chapter 12.

What do artifact assemblages associated with room and pit structure floors tell us about the function and use of those features?

De facto floor assemblages were rare in the project area. Most pit structures were cleaned prior to or as part of their closing, including those that were burned when closed. The few intact floor assemblages that were recovered indicate differences among small, medium, and large structures. Small and medium structures contained the most diverse floor assemblages. Large structures frequently were associated with floor assemblages containing maize-grinding implements and tobacco pipes.

Assemblages associated with surface room floors suggest that these features had at least three functions: as storage; as enclosed work areas for domestic tasks not requiring a hearth, such as maize grinding and flaked stone tool production; and, least common of all, as habitations.

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