Social Scale of Mesa Verde Anasazi Kivas

William D. Lipe

Pueblo I to III Mesa Verde settlements typically have one protokiva or kiva for each block of six to nine rooms, a pattern indicative of kiva use by a relatively small and common social segment such as an extended family or minimal lineage. These ordinary small Pueblo I protokivas and Pueblo II and III kivas were probably used for both ritual and domestic activities.

Chacoan outliers in the Mesa Verde area have fewer and larger kivas, and a less regular patterning of kivas to room blocks. Kivas at Chacoan sites may have functioned at a larger scale of social integration than at Mesa Verde settlements.

At roughly A.D. 1300, approximately coincident with the abandonment of the Mesa Verde area, most Puebloans shifted from a Mesa Verde-like pattern of many small kivas to one of large plaza-oriented sites with only a few relatively large kivas. Following Steward (1937) and Adams (this volume), this suggests a larger integrative scale for kiva use, and stronger village-level organization. Continuities in kiva architecture and ritual features suggest that aspects of the religious ideology associated with earlier kivas were incorporated into the new organization.

Introduction

The model for this paper is Julian Steward's classic 1937 article entitled "Ecological Aspects of Southwestern Society." In that paper, Steward used the ratio of rooms to kivas as a measure of the scale of social integration in both prehistoric and historic Pueblo communities. He noted that from the Pueblo I through the Pueblo III periods in the San Juan drainage, the ratio of surface rooms to kivas is quite low—around five or six rooms for each kiva. Drawing on work by Prudden (1903, 1914, 1918), Fewkes (1911), and Roberts (1930, 1931, 1932, 1933), Steward suggested that the small "units," each consisting of a kiva and a few spatially associated "houses," retained their "social and ceremonial integrity" even after the "growth of communal houses" (large pueblos) in the Pueblo II period (Steward 1937:96-97). In other words, the large pueblos appear to consist of a number of the smaller unit pueblos joined together. Not until the Pueblo IV period did the ratio of rooms to kivas increase dramatically, as "political autonomy passed from the localized lineage to a wider group—the Pueblo village" (Steward 1937:102).

It was also in the early Pueblo IV period that the construction of large pueblos around plazas became common in the Rio Grande through Western Pueblo areas, although Steward did not discuss this (but see Adams’ comments in Chapter 11, this volume).

Following Prudden’s and Steward’s lead, others have pursued similar or related approaches to using architectural characteristics and spatial relationships as indicators of prehistoric Anasazi social organization (e.g., Eggan 1950; Hawley 1950; Rohn 1965, 1971, 1977; Dean 1970; Wilcox 1976; Powers et al. 1983; McKenna and Truell 1986; Lekson 1984, 1985, 1988; Adams, this volume). My purpose is to evaluate Steward’s model after 50 years’ more fieldwork, with primary emphasis on the spatial patterning of kivas and surface rooms in the central Mesa Verde Anasazi area, from the Pueblo I through Pueblo III periods, or from about A.D. 750 to 1300. I also review selected evidence from the Pueblo IV and historic periods in both the Eastern Pueblo (Rio Grande) and Western Pueblo (Zuni and Hopi) areas.

My Mesa Verde area data are drawn from published reports on excavated sites in the core portion of that culture area—that is, north of the San Juan Valley and extending from Mesa Verde in the east to the Montezuma Creek drainage in the west. This core area centers...
on the McElmo and Montezuma Creek drainages and includes the Montezuma Valley near Cortez and the Dolores Valley near the town of Dolores (Chapter 1, Figures 1 and 2). Primarily because of time limitations on my research, the San Juan Valley proper and the La Plata Valley are not included. The area had exceptionally good dry-farming potential and dense populations, numbering in the few tens of persons per km² at some times and places (cf. Schlanger 1985). My primary research questions about this area in the Pueblo I-III periods are (1) "What was the approximate size of the social group that used a kiva?" and (2) "Were there changes in the size of this group through time?" My secondary questions are (3) "Were Mesa Verde Anasazi kivas used to help integrate social groups?" and (4) "If they were, what were the integrative mechanisms?"

Other possible integrative facilities—e.g., Great Kivas, tri-wall structures, and plazas—are briefly discussed in relation to specific points, but are not treated here in a systematic way.

In order to use kiva and surface room data to infer the scale of social groups who used kivas, I made several assumptions. The first is that the size of the kiva had a more or less regular relationship to the size of the group that used it, or at least to the number of people who could physically be together in it at the same time. The same assumption holds for the sizes of surface rooms. In the paper, these assumptions are used primarily in discussing relative sizes of social groups.

Second, I assume that spatial propinquity counts for something in social interaction. That is, structures located immediately adjacent to one another are more likely to have been used by the same group than are structures located far apart, or separated from one another by other structures. This is the assumption that I believe Prudden made in 1903 when he defined the "unit type pueblo" by the recurring spatial association of a kiva, a small block of rooms, and a burial mound (Figure 1). He noted that these clusters occurred by themselves, but also formed the basic building blocks or "units" in larger Mesa Verde area pueblos. Roberts (1939a) showed how this pattern, common in the Pueblo II and III periods, developed during Pueblo I out of Basketmaker III antecedents. Morris (1939) called the Pueblo I pit structures "protokivas," in part because they occupied the same position in the site structure as kivas in the later Pueblo II and III settlements. Working in the Mimbres area, Anyon and LeBlanc (1980) also found that a single kiva or "large room" was spatially associated with many of the roomblocks that comprised Classic period Mimbres villages. They argued that each of these structures probably housed integrative activities for its roomblock group, while plaza activities helped integrate the entire community.

In prehistoric pueblos, a regular spatial association between a protokiva or kiva and a small block of rooms made it possible for Steward (1937), Lekson (1988), and others to use room-to-kiva ratios as a proxy for the size of the local group integrated by a kiva. If kivas had clustered in one part of a settlement or had been distributed in a less regular way, the inference would not have been as straightforward. Close association with a particular roomblock, of course, does not preclude the possibility that a kiva was used by a non-localized group such as a sodality. But on the basis of analogy with historic Western Pueblos (Eggan 1950) I infer that kiva use by sodalities that draw their membership from across the community does not produce the regular, modular type of kiva distribution commonly seen in Mesa Verde Anasazi settlements. Instead, historic Western Pueblo sodality kivas tend to be spaced irregularly in relation to surface roomblocks, and in some cases the kivas themselves are clustered in one or a few parts of the settlement (cf. maps in Stubbs 1950 and Mindeleff 1891). At the Pueblo IV period site of Awatovi, the kivas excavated in the Western Mound were also clustered (Smith 1972).

![Figure 1: Prudden's "unit type pueblo" (after Prudden 1903:Figure 6).](image-url)
A final assumption bears more on the secondary, or "type of integration" aspect of the paper than on the main, or "social scale" aspect. This assumption is that the marked and consistent formal differences between kivas and the associated surface rooms are likely to have been rooted in some consistent functional or cognitive differences. In other words, Mesa Verde kivas did not just happen to be round, deep, roof-entered, and located south of the surface rooms as a result of normal variation in dwelling room construction. These formal differences are likely to signal some consistent differences in the activities that went on in these different types of structures, and perhaps in the meanings that the Anasazi attributed to them.

Lekson has recently questioned this assumption, or at least the version of it that always views kivas as specialized ceremonial chambers, and rooms as purely domestic (Lekson 1985, 1988). By raising these questions, Lekson has caused us to take a fresh look at the issues. I agree with most of his conclusions, except when he seems to imply that evidence of domestic activities in a kiva or protokiva precludes its having been used for integrative religious or social rituals. I think there is evidence that both domestic and ritual activities frequently took place in Mesa Verde kivas and protokivas (see also Cater and Chenault 1988 and Varien and Lightfoot, Chapter 6, this volume). Recognizing evidence of either or both kinds of activities and understanding their relationships to types and scales of integration are the central research questions regarding Anasazi kiva use.

The results of my survey of the social scale of Mesa Verde kivas are presented in Table 1. Basically, these data support Steward's model by showing that the "unit pueblo" pattern was well-established in the Mesa Verde area by late Pueblo I and continued in generally similar form through the Pueblo III period until the abandonment of the area in the late A.D. 1200s. An abundance of new field data and better chronologies have become available in the last 50 years, permitting recognition of some interesting variations on this general pattern. In addition to data from the Mesa Verde area in the Pueblo I to Pueblo III periods, I added some from Pueblo IV and from the historic Pueblos in the Rio Grande and the Western Pueblo area, just to show that Steward is still right about these periods as well. The pre-A.D. 1300 northern San Juan pattern of many small kivas incorporated in architectural "units" contrasts strongly with the Pueblo IV and Historic Pueblo pattern. Furthermore, the historic Western Pueblo sodality kiva pattern contrasts with that of the historic Eastern Pueblos, which are dominated by the larger moiety kivas. Overall, the post-A.D. 1300 kivas are larger in both the Eastern and Western Pueblo areas, and are dramatically less common relative to surface rooms, than in the Mesa Verde area from Pueblo I through Pueblo III.

### Pueblo I Period, Mesa Verde Area

The first data set in Table 1 is from the late A.D. 800s (late Pueblo I) and is derived from recent work on the Dolores Archaeological Project (cf. Breternitz et al. 1986) and at the Duckfoot Site in south-western Colorado (cf. Varien and Lightfoot, this volume). The 52 late Pueblo I pit structures/protokivas that were measured had a mean floor area of about 25 m². The large standard deviation (Table 1) is due to the presence at some Dolores area sites of occasional "oversized" pit structures, as discussed below (see also Wilshusen, Chapter 7, this volume). Typically, each pit structure (except for some of the "oversized" ones) was located just south of a small group of seven to eight rooms, which had an average total area between two and three times that of the pit structure. Several room suites, each consisting of a large front living room and two back storage rooms, can ordinarily be recognized in this group of rooms. Several such groups of rooms-with-a-protokiva are often joined side by side into a roomblock.

Dolores Project researchers inferred that each surface room suite (one front and two back rooms) was controlled by a single household, probably composed of four or five people. Each group of two or three contiguous surface room suites was occupied by an "interhousehold group"—perhaps an extended family or minimal lineage. The households in this group shared the use of the pit structure/protokiva (Kane 1983, 1984). The pit structure, which lacked direct access to long-term storage facilities, was not inferred to have been either a specialized ceremonial chamber or a separate habitation, but to have been used by the interhousehold group for both domestic and ritual activities (Kane 1984, 1986a and b; Lipe and Kohler 1984). Evidence for both types of activity are commonly found in the pit structures (Varien and Lightfoot, this volume). Features interpreted as ritual or symbolic include simple and complex sipapus, floor vaults, and certain sand-filled pits, as discussed by Wilshusen (1986, and in this volume).

Schlanger (1985) argues that, in the average "interhousehold cluster," the disparity between total front room floor area and usable pit structure floor area was too great to have permitted the pit structure to be a common sleeping area for the several households that shared it. (In pit structures, usable floor space is considerably smaller than total floor space because of the presence of a large firepit, a wingwall, often an ashpit, and numerous other floor features.) Consequently, the pit structure is not likely to have been the primary residence for the entire interhousehold group, or even
Table 1: Anasazi and Pueblo Architectural Data.

<table>
<thead>
<tr>
<th>Anasazi and Pueblo Samples</th>
<th>KIVAS</th>
<th>ROOMS</th>
<th>ROOMS TO KIVAS</th>
</tr>
</thead>
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<td></td>
<td>Total Floor Area (m²)</td>
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<td>Mean Floor Area (m²)</td>
</tr>
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<td>M.V. Anasazi: 1000–1150 (P II)</td>
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<td>9</td>
<td>20.6</td>
</tr>
<tr>
<td>M.V. Anasazi: 1150–1300 (P III)</td>
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<td>56</td>
<td>12.3</td>
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<tr>
<td>Hopi and Acoma: 1948</td>
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<td>45.4</td>
</tr>
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<td>Eastern Pueblos: 1948</td>
<td>2,197</td>
<td>27</td>
<td>81.4</td>
</tr>
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</table>

Notes on sources for Table 1.

Mesa Verde Anasazi, A.D. 850–900. Data on pit structure floor areas is from 48 Dolores Archaeological Project pit structures measured by Richard Wilshusen (personal communication 1988), and from four Duckfoot Site pit structures measured by Mark Varien and Ricky Lightfoot (personal communication 1988). Data on surface room areas and ratios of room counts to pit structures are from Dolores Archaeological Project data summarized by Wilshusen (1985). This latter sample overlaps with, but is not identical to, the sample from which the Dolores Project pit structure floor area measurements were obtained. This is because not all the surface rooms associated with the 48 pit structures were excavated or yielded suitable floor area measurements; nor were floor area measurements from all the pit structures associated with the surface room sample.

Mesa Verde Anasazi, A.D. 1000–1150. All data are from published site maps; kiva and surface room floor area measurements were made by electronic planimeter. Sites and components used in this analysis were: Alkali Ridge Site 3, Site 5 (late component), Site 7 (Pueblo II component), Site 9, Site 11 (late component), Site 12 (early component), Site 12 (late component) (Brew 1946); Badger House, Mancos Phase component (Hayes and Lancaster 1975); Big Juniper House, Component D (Swannack 1969); Dominguez Ruiz (Reed 1979); Ewing Site, Units 1–6 (Hill 1985); Mesa Verde Site 1 (O’Bryan 1950); Mesa Verde Site 16, Unit Pueblos No. 1 and 2 (Lancaster and Pinkley 1954); Mesa Verde Site 102, Pueblo II component (O’Bryan 1950); Mesa Verde Site 866 (excluding protokiva) (Lister 1966); Mesa Verde Site 875, First and Second Villages (Lister 1965); Mesa Verde Site 1086 (Lister 1967); Mesa Verde Site 1088, early and late components (Lister and Smith 1968); Mesa Verde Site 1104 (Lister and Breternitz 1968); Mesa Verde Site 1914 (Hewett 1968); Mustoe Site, Pueblo II component (Gould 1982); Wood Rat Knoll (roomblock and Kiva 2 only) (Nickens 1977).

Mesa Verde Area “Chaco Outliers,” A.D. 1050–1150: All data are from published site maps; kiva and surface room floor area measurements were made by electronic planimeter. Sites and components used in this analysis were: Escalante Ruin (excluding Kiva B) (Hallasi 1979); Lowry Ruin, fourth addition (Martin 1936), and Wallace Ruin, Chacoan occupation (Bradley 1988b). My choice of Martin’s fourth addition as representing the maximum size of Lowry Ruin in “Chacoan” times is based on my reading of the architectural and ceramic evidence he presents (Martin 1936). Also, tree-ring dates from Lowry (Robinson and Harrill 1974; Ahlstrom et al. 1985) indicate that most of the building at Lowry took place in the very late A.D. 1000s and early 1100s, a period when most of the Chacoan sites north of the San Juan appear to have been built.

Mesa Verde Area Anasazi, A.D. 1150–1300. All data are from published site maps; kiva and surface room floor area measurements were made by electronic planimeter. Sites and components used in this analysis were: Alkali Ridge, Site 1 (Unit 1) and Site 6 (Brew 1946); Badger House, Mesa Verde Phase occupation (Hayes and Lancaster 1975); Beartooth Pueblo (Martin 1930); Cannonball Ruin, South Pueblo (Morley 1908); Green Lizard Site, West Unit (Huber and Bloomer 1988); Grinnell Site (Luebben 1983); Herren Farm Ruin, Unit III (Martin 1929); Hoy House (Nichkins 1981); Mancos Canyon Site 4 (Reed 1958); Mesa Verde Site 34 (excluding Kiva II) (O’Bryan 1950); Mesa Verde Site 499, Second Village, Stage 3 (Lister 1964); Mesa Verde Site 1926 (Birkedal 1968); Mug House, Component C (Rohn 1971); Mustoe Site, Pueblo III component (Gould 1982); Nancy Patterson Village, Pueblo III household Unit (Thompson et al. 1986); Sand Canyon Pueblo, 100, 200, 300, 500, and 1200 blocks (Bradley 1986, 1987, 1988a); Spruce Tree House (Fowkes 1909); Sun Point Pueblo (Lancaster and Van Cleave 1954).

Hopi, A.D. 1300–1600. Kiva floor areas are those published by Smith (1972:105) from excavated kivas at Awatovi and Kawaika-a in northeastern Arizona. The room-to-kiva ratio is based on Smith’s (1971, 1972) reports of work in the Western Mound at Awatovi. A large, roughly cross-shaped excavation was
to have been seasonally used as the group’s primary residence in the winter. As can be seen in Table 1, however, the differences between total surface room and pit structure floor areas are not so great as to preclude further argument, though I do think Schlanger is right. The lack of direct access from the pit structure to the surface storage rooms indicates that the pit structure probably was not the primary residence for an additional household, but that it was shared by the households based in the surface roomsuites. In any case, the typical Pueblo I pit structure/protokiva appears to have been a standard element in the set of facilities used by a relatively small-scale group consisting of several co-residential, economically cooperative households, probably related as an extended family or minimal lineage.

Wilshusen (1985, 1986, and in this volume) and Kane (1986 a and b) have also made a convincing case that some Pueblo I pit structures were loci for ritual activity that served groups larger or more influential than the ordinary extended family. Such pit structures tend to be larger than ca. 25 m², and some are much larger—up to ca. 60 m². This size variation accounts for the large standard deviation for Pueblo I pit structure floor areas in Table 1. These larger pit structures are located in village-sized settlements rather than in hamlets, and they have more elaborate ritual features and less evidence of domestic economic activities than the smaller “ordinary” pit structures. However, their overall floor plan is generally just a larger version of the typical late Pueblo I pit structure, though relatively more space is devoted to ritual features. A few of these pit structures that have elaborate ritual features are only average in size, but most are “oversized.” Wilshusen (1986 and in this volume), Orcutt and Blinman (1988), Kane (1986 a and b) and Lipe et al. (1988) have interpreted these pit structures as being the loci for activities that promoted social control and effective group decision-making under conditions of increased population density and settlement size.

Inferences of social scale remain fuzzy, but it is assumed that ritual activities associated with these “special” pit structures affected a considerably larger group than would be true for a “standard” pit structure. The special ritual features in the former type of facility may have helped provide ideological validation for claims of influence and authority made by particular individuals, families or associations. The generally larger size of these structures would also have permitted larger groups to use them, though not at the scale of an entire village population (or even of a large room-block). For instance, these pit structures may have been used for integrative activities such as hosting members of other residential or kin groups, or people from other villages, at ceremonies or feasts. Blinman (Orcutt and Blinman 1988; Blinman 1988 and Chapter 8 in this volume) presents ceramic evidence for a “potluck” type of feasting at “U-shaped roomblocks” in the large villages. The largest and most ritually specialized pit structures excavated in the Dolores area occur with this distinctive type of roomblock at McPhee Village (Kane and Robinson 1988), the area’s largest late Pueblo I community.

The “oversized” pit structures discussed above are not to be confused with Great Kivas, which also occur in Dolores area Pueblo I settlements (cf. Lightfoot 1988; Lightfoot et al. 1988). These structures are much rarer and larger than the oversized pit structures and do not appear to be consistent, in a general way, with data from the Galisteo Basin (Nelson 1914), Gran Quivira (Hayes et al. 1981) and other large Pueblo IV sites in the Eastern Pueblo area, as reported in Stuart and Gauthier (1981).

Notes on Sources for Table 1 (continued).

carried out in the Western Mound, and all kivas and rooms encountered were excavated (Smith 1971:Figures 3 and 4). Three kivas and approximately 80 rooms that were occupied late in the history of the mound were excavated (Smith 1971:Figure 4; Smith 1972). This places them early in the Pueblo IV period. Altogether, 24 kivas were excavated at Awatovi (Smith 1972), as well as several hundred rooms (Smith 1972:7). Judging by the amount of area excavated and the fact that the "sequentially numbered" rooms at Awatovi reached at least No. 908 (Smith 1972:66), the ratio of approximately 27 rooms per kiva derived from the Western Mound data is probably quite conservative.

Hopi, 19th Century. Kiva floor areas were calculated from linear measurements of 15 kivas made at the Hopi villages by Stephen and reported by Mindeloff (1891:136).

Hopi and Acoma, 1948. Data are from planimeter measurements by Nick Scaoles of maps in Stubbs (1950), based on 1948 aerial photos. Hopi settlements measured were Walpi, Mishongnovi, Shipaulovi, and Shongopovi. Precise room counts cannot be made from Stubbs' maps because some sections of these pueblos are multiple-storied, and the floor plans of upper and lower stories may differ. Also, not all room walls extend through the roof level, even in upper stories or single story sections. The room counts that are given were made by Dohm (1987), based only on the room walls that showed at roof level. Consequently, these are counts of minimum numbers of rooms; the actual counts must be somewhat higher.

Eastern Pueblos, A.D. 1300–1600. The data for the room-to-kiva ratio are from Steward (1937), who obtained them from surface counts made by Hewett at five sites on the Jemez Plateau (Hewett 1906; the sites are Tsiihege, Tsankawi, Otwi, Yapashi, and Kotiyi). The ratio derived from these sites appears to be consistent, in a general way, with data from the Galisteo Basin (Nelson 1914), Gran Quivira (Hayes et al. 1981) and other large Pueblo IV sites in the Eastern Pueblo area, as reported in Stuart and Gauthier (1981).
not show a clear spatial association with specific roomblocks; they may even be spatially separate from habitation sites. Their floor plans and features are quite different from those of the oversized pit structures. It seems likely that Great Kivas housed different kinds of activities and functioned at a larger scale of integration than the oversized pit structures.

**Pueblo II Period, Mesa Verde Area**

Apart from these two kinds of larger and more problematic pit structures, the typical late Pueblo I configuration conforms quite well to Prudden’s modular or “unit type pueblo” construct, even though he based his observations on Pueblo II and III settlements (cf. Roberts 1939a). The Pueblo II and III patterns are also generally similar to those of the Pueblo I period (Table I). Probably there is continuity of both population and culture in the study area during the 400 to 500 years in question. The paucity of data from the A.D. 900s may cast some doubt on this assumption, however. Hayes (1964) reports that sites of the Ackmen Phase, which should include the A.D. 900s, are the most numerous of any phase on Wetherill Mesa, but elsewhere in the central Mesa Verde area, few sites dating to the tenth century have been identified, excavated, or reported. Whether this is a result of low population during this period or of sampling bias is not clear at this point, though I suspect the former. If so, some of the changes in architecture and site layout between Pueblo I and II could be associated with new immigration into the area in the A.D. 1000s. In any case, I was unable to compile an adequate data set from the central Mesa Verde area for the 900s, so in Table I, my Pueblo II data are from sites dating A.D. 1000 to 1150.

The data that do exist, however, indicate to me a rapid shift at about A.D. 900 from the square Pueblo I protokiva with wingwalls and numerous floor pits to the round Pueblo II kiva with a relatively uncluttered floor. More or less round structures, with some “transitional” characteristics such as vestigial wingwalls, occur in the very late A.D. 800s or early 900s in the Mesa Verde area—e.g., Pit Structure 32 at Grass Mesa in the Dolores area (Lipe et al. 1988), and Structure 2 at the Ute Canyon Site in Mancos Canyon (Gillespie 1976). The period around A.D. 900 was one of rapid depopulation of the Dolores area, and substantial population shifts seem to have occurred elsewhere in the Mesa Verde area at about this time, as well as a movement away from large villages and large roomblocks to smaller settlements and settlement units. Speculatively, in this turbulent period a rapid selection for different modes of integrative symbolism, ritual activities, or domestic activities may be somehow reflected in the architectural change from protokiva to kiva. On the other hand, there is also a clear continuity through this time in specific ritual features, in the underground character of the kiva and in the orientation, size, and spatial structure of the pit structure and surface room unit. In the Mesa Verde area, the period A.D. 900–1050 is one where truly “more work needs to be done.”

Compared with the square Pueblo I protokivas, the Pueblo II post–A.D. 1050 pit structures referenced in Table I are uniformly round in plan and usually have well-developed benches, pilasters, and a southern recess at bench level. In other words, they display the classic characteristics of Mesa Verde kivas. Both the surface rooms and the kivas have smaller floor areas than in Pueblo I (5.8 m² vs. 8.3 m² for rooms, and 13.3 m² vs. 24.9 m² for kivas—see Table 1), though the ratio of total room area to total kiva area is similar. The amount of room space per pit structure is substantially less in Pueblo II, however (38.0 m² vs. 62.8 m²). Some of the difference may be due to poor archaeological visibility of surface rooms in the Pueblo II period—these sometimes were made of jacal, which may have little archaeological expression. Furthermore, if Pueblo II rooms were made of masonry, they often were robbed of stones by later inhabitants of nearby settlements. Also, a number of fairly early reports were consulted, and it may be that a unit’s total habitation area was less likely to be documented prior to the development of “settlement archaeology.”

The decrease in mean pit structure floor size between Pueblo I and II may be related to “uncluttering” the floors. Unlike Pueblo I protokivas, Pueblo II kivas lack wingwalls and have relatively few floor pits and other features, though they do tend to have rather large banquettes and southern recesses. These areas, which are not present in Pueblo I protokivas, were not included in the Pueblo II kiva floor area measurements because they generally do not appear to have been suitable sitting or sleeping places. On the other hand, they would have been useful for getting equipment and supplies off the floor and temporarily out of the way. Recent excavations at Sand Canyon Pueblo by the Crow Canyon Archaeological Center have demonstrated that pottery vessels, stone axes, bone awls, and other portable items were often kept on these banquettes (Bradley 1986, 1987, 1988a).

As in the Pueblo I protokivas, many of the Pueblo II kivas have probable ritual features, such as sipapus and floor vaults, that do not occur in the surface rooms. My impressions are that evidence could be assembled to support the same interpretation made for the Pueblo I structures—that the Pueblo II kiva was the locus for religious rituals which primarily served to help integrate a small group of co-residential households. Whether the change in kiva shape, size, and floor features is related to more specialization for religious rit-
ual, or to the exclusion of some people (e.g., women [Gillespie 1976]), or to neither of these changes, is not clear. I think that Pueblo II kivas may well have functioned like Pueblo I protokivas—that they continued to be loci for both domestic and ritual activities by several households that had other, more separate facilities in the roomblock, including long-term storage facilities (cf. Cater and Chenault 1988). What is needed for the Pueblo II and III periods is detailed comparative studies of associated surface rooms and kivas that combine analyses of architectural, feature, and assemblage evidence. Varien and Lightfoot’s analysis (this volume) deals only with the Pueblo I period, but shows what can be accomplished with a systematic treatment of these kinds of data.

Typical Pueblo I protokivas and Pueblo II kivas appear to have functioned primarily to integrate small social groups, on the order of several households. Did any of the Pueblo II kivas operate at a larger social scale, as claimed for some Pueblo I pit structures? I can’t answer that at this point, but I did note while doing the survey that the largest Pueblo II kivas (in the size range of 20 to 30 m²) tended to be isolated, or at least not in normal propinquity to a specific small block of surface rooms; they also appear to have more elaborate floor features. These might perhaps be analogous to the oversized pit structures of the Pueblo I Dolores Valley villages. This possibility needs to be investigated by larger-scale, more detailed studies of settlement structure and the distribution of features than have been done to date.

I also had no Pueblo II data from settlements as large as the late Pueblo I villages in the Dolores area. Such settlements may exist, but they are not well-represented in the literature reporting on excavations. There were clusters of hamlet-sized settlements which undoubtedly comprised communities (Rohn 1977; Hill 1985), but they are not aggregated tightly enough to be obvious villages. A lower degree of aggregation may have lessened the need for tight social control and for group decision-making—that the in the late Pueblo I period may have promoted the intensification of religious ritual and the development of integrative facilities with elaborate ritual features. Also in the late Pueblo II period, “Chacoan great houses” may have provided facilities that focused larger-scale integrative activities.

The third data set in Table 1 is called “Chaco Outliers” (Powers et al. 1983) and includes data from only three sites in the study area—Escalante Ruin (Hallasi 1979); Wallace Ruin (Bradley 1974, 1988b); and Lowry Ruin (Martin 1936). Though contemporary with the other late Pueblo II sites, these Chacoan sites are architecturally distinctive. They contrast with nearby contemporaneous settlements in having a compact, pre-planned layout, multiple stories, much more substantially built masonry walls, kivas included within the roomblock, larger kivas, larger rooms, and a higher ratio of rooms to kivas. A Chacoan-style Great Kiva is present at Lowry Ruin, and Great Kivas also appear to be associated with several unexcavated Chacoan outliers in the study area (e.g., Yucca House, Casa Negra, and the Ansel Hall site).

In the San Juan Basin to the south of the study area, the contrasts between Chacoan great houses (Lekson 1984; Powers et al. 1983) and surrounding sites are even more pronounced. The great houses generally incorporate formal plaza areas, have few but relatively large kivas, and have a room-to-kiva ratio that varies widely from one great house to the next. The great houses do not appear to be simple aggregates of room suite-kiva units, although parts of some sites perhaps show this pattern (cf. Lekson 1984). At Chaco Canyon and elsewhere in the San Juan Basin, the contemporaneous small sites associated with the great houses have kiva sizes and room-to-kiva ratios resembling those of late Pueblo II sites in the Mesa Verde area (McKenna and Truell 1986; Powers et al. 1983). In fact, my impression is that the overall distribution of Chaco outliers is rather well-correlated with the overall distribution of Anasazi settlements having formally distinctive small kivas located in unit type pueblos.

I think that many or most of the Chacoan great house kivas in the San Juan Basin and in the Mesa Verde area played a different, and probably larger-scale, integrative role than kivas in the associated small sites. It is also difficult to make a case, on the basis of spatial patterning, that most great house kivas are parts of a unit-pueblo-like facility used by an extended family or other small-scale social segment within the great house.

The three southwest Colorado Chacoan outliers included in Table 1 differ less profoundly from their surrounding settlements than do the great houses in the San Juan Basin. Nevertheless, these three Colorado Chacoan sites have larger kivas, larger rooms, a higher ratio of rooms to kivas, and a much greater ratio of room space to kiva space than contemporaneous non-Chacoan sites in the area. These differences suggest to me that the Chacoan kivas functioned at a larger social scale than the kivas of typical late Pueblo II Mesa Verde area settlements.

**Pueblo III Period, Mesa Verde Area**

The fourth data set in Table 1 is from Mesa Verde sites dated to the A.D. 1150–1300 period (Pueblo III). The hamlet-sized settlements so common in the Pueblo II period persist in the study area, but in addition there are a number of very large, village-sized settlements that include from one hundred to several hundred surface
rooms and numerous kivas (Rohn 1983). Some of these are as large or larger than the major late Pueblo I villages such as McPhee. Among the largest Pueblo III settlements in the study area are the Yellowjacket Site (Lange et al. 1986); Sand Canyon Pueblo (Figure 2) (Bradley 1986, 1987, 1988a); Goodman Point Ruin (Figure 3) (Fewkes 1919); the Lancaster or Clawson Ruins (Martin 1929); the Bug Mesa or Monument Ruins (Leh 1942), the Mud Springs or Toltec Ruin (Holmes 1878; Fewkes 1919), and the large cliff dwellings, such as Long House (Cattanach 1980) and Cliff Palace (Fewkes 1911). Little excavation has been done in the open sites; an exception is Sand Canyon Pueblo, where the Crow Canyon Archaeological Center is carrying out an excavation program (Adams 1985; Bradley 1986, 1987, 1988a).

The indices employed in Table 1 do not suggest a departure from the prevailing unit pueblo pattern during the Pueblo III period in the central Mesa Verde area. Also, Rohn’s detailed analysis of Mug House (1965, 1971) at Mesa Verde National Park showed that “kiva groups” existed and were relatively small at this site late in the 1200s. In the study area as a whole, Pueblo III kivas and rooms are slightly smaller than those in Pueblo II, though this may be due to the crowding of structures in the cliff dwellings that were common in this period. The ratios of rooms to kivas, and of room area to kiva area, rise somewhat when compared with Mesa Verde Pueblo II, and room space per kiva increases slightly.

The relatively low standard deviation for Pueblo III kiva sizes stems from the rarity of either very large or very small kivas in the data set. Thus, oversized kivas comparable to the large Pueblo I protokivas discussed above have not been found, even at the larger sites. As noted above, however, there has been little excavation at the very large open sites.

Great Kivas appear to be rare during the Pueblo III period in the central Mesa Verde area, although large walled courtyard spaces at Long House (Cattanach 1980) and Fire Temple (Fewkes 1921; Cassidy 1960) in Mesa Verde National Park have floor vaults and other features often associated with Great Kivas (Vivian and Reiter 1960). Circular Great Kiva depressions also

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**Figure 2**: Plan map of Sand Canyon Pueblo (5MT765). Excavated areas shown in heavy lines; other wall lines based on surface mapping.
occur at the Goodman Point and Yellowjacket Sites, but it is conceivable that these belong to a late Pueblo II occupation, rather than to the post–A.D. 1150 component that appears to account for the greatest intensity of occupation at these two sites.

Other Pueblo III structures that may have served as public architecture with integrative functions are D-shaped bi-walled structures, including “Sun Temple” (Fewkes 1916; Rohn 1977), located close to Cliff Palace at Mesa Verde National Park, and a similar but unexcavated structure at Sand Canyon Pueblo.

Also present in some probable Pueblo III contexts (e.g., at the Mud Springs Ruins complex) are circular-plan tri-wall structures (Holmes 1878; Vivian 1959) which may have served in some ways as integrative facilities. However, some if not all may date to the early A.D. 1100s rather than to the Pueblo III period as defined here (Lekson 1983; Kane 1986a:384-385).

Pueblo IV type formal rectilinear plazas enclosed on three or four sides by roomblocks do not appear in Pueblo III (or earlier) sites in the study area. Several of the large, late, open pueblos do have informally bounded open areas that may have served as small plazas (e.g., Sand Canyon Pueblo—see Figure 2). At some Pueblo III sites in the study area (e.g., Yellowjacket, Goodman Point [Figure 3], Lancaster Ruin), the numerous roomblocks run east–west and are arranged in parallel series. The spaces between the rows of roomblocks may have functioned as plazas, as they do in some of the similarly-arranged historic Hopi villages (cf. Stubbs 1950).

Recent excavations by the Crow Canyon Archaeological Center promise to shed some light on integrative facilities and modes of integration in the thirteenth century, just prior to the abandonment of the Mesa Verde area. Recent work at the Green Lizard Site (Figure 4) (Huber and Bloomer 1988) has demonstrated that Prudden units are alive and well in the A.D. 1200s in the study area (also see Gould 1982; Lister 1964; O’Bryan 1950). Near the Green Lizard site is the much larger
Sand Canyon Pueblo (Figure 2), which appears to date between approximately A.D. 1240 and 1280, and may actually have been occupied only between 1250 and 1280. This site is enclosed by a wall and has at least 90 kivas, 300 to 400 rooms, 17 towers, and a D-shaped bi- or tri-walled structure similar to Sun Temple. There is also at least one informal plaza on the western side of the site. The multiplicity of kivas contrasts strongly with the pattern displayed by large villages during the Pueblo IV period in both the Eastern and Western Pueblo areas. This feature of site structure appears to link Sand Canyon Pueblo with the earlier pattern of aggregated unit modules displayed by other large Pueblo I through Pueblo III settlements in the study area, rather than with the general Pueblo IV pattern.

However, only three of the six blocks of kivas and rooms excavated so far at Sand Canyon Pueblo (Bradley 1986, 1987, 1988a) conform closely to a unit type pueblo model, in the sense of exhibiting a well-defined cluster of both large and small rooms associated with a specific kiva. The three other excavated kiva-and-room groups have yielded architectural configurations and feature data that do not fit this model as well. For example, in the “100 Block” (Bradley 1986, 1987), kiva space is very high in relation to room space, and it is difficult to make a case that any of the small associated surface rooms were habitation or living rooms; they appear more likely to have been storage rooms associated with the kivas.

A glance at the Sand Canyon site map (Figure 2) also indicates some other departures from the segmental configuration expected under the “aggregated-unit pueblo” model. In particular, the concentration of large kivas on the west side of the site is striking, as is the scarcity of surface rooms associated with them. Caution should be used in extrapolating surface depression diameter to kiva size, however. Recent excavations by Bradley in a large depression in the “1000 Block” in the northeast part of Sand Canyon Pueblo have shown that the size of the mapped depression there relates to the size of the courtyard area into which an average-size kiva is set.

Nonetheless, the spatial patterning of architecture elements at Sand Canyon Pueblo suggests that these large “west side” kivas may not have been part of standard habitation units used by a few households. In
other words, it seems possible that some may have been used by groups who did not reside in the immediately adjacent rooms. Ceremonial associations or other sodality type groups who drew membership from several residential units may have used them. Another possibility is that some kivas at Sand Canyon were used by groups that lived in the smaller settlements, such as Green Lizard, that were dispersed around Sand Canyon Pueblo.

The D-shaped tri-wall structure and the informal plazas at the site must also have played roles in social integration. Sand Canyon is much larger than other excavated late thirteenth-century Mesa Verde sites reported in the literature (including Cliff Palace). It may also have been a central site in a dispersed community of Pruudden-unit habitations such as Green Lizard. As in the Pueblo I case discussed earlier, an increased need for social control and orderly decision-making in a context of increased community size and population density could have resulted in the "promotion" of some kivas to use in larger scale social integration.

**Pueblo IV and Historic Period**

The "unit type pueblo" pattern, one of small kivas closely associated with specific small blocks of habitation and storage rooms, continued in the Mesa Verde area until the very late A.D. 1200s, when this region was abandoned along with the other remaining populated portions of the Four Corners area. The unit pueblo pattern was also present over much of the remainder of the Pueblo III period Tusayan and Kayenta area. The unit pueblo pattern was also present in the central Mesa Verde area, but it did not survive long, if at all, after A.D. 1300, even in areas that continued to be populated. Instead, it was rapidly replaced by a pattern of larger settlements with few kivas. These Pueblo IV period settlements generally were oriented around plazas (see Adams, this volume).

In the Rio Grande or Eastern Pueblo area, some sites dating to the middle or late A.D. 1200s appear to be single or aggregated unit type pueblos, with room-to-kiva ratios in approximately the same range as in the Mesa Verde area (Stubbs and Stallings 1953; Timothy A. Kohler, personal communication). Whether these sites were built by migrants from the Mesa Verde area is not clear, and the pattern does not appear to have a great deal of time depth in the area. At about A.D. 1300 the room-to-kiva ratio increased greatly in the Eastern Pueblo area (see Table 1), concurrent with the formation of much larger pueblos that were laid out around plazas. Early in Pueblo IV, there was some use of an oval settlement plan (cf. Hayes et al. 1981; Hewett 1938), but this gave way to rectilinear plans, often with multiple plazas (e.g., Hewitt 1906; Nelson 1914). I did not have time to measure the floor areas of Pueblo IV kivas and rooms in the Rio Grande area, but my impressions are that the kivas are generally rather small, and certainly not as large as the typical moiety kivas dominant in nineteenth and twentieth century Rio Grande villages (Table 1; Stubbs 1950). Many Pueblo IV sites also appear to have a few small kivas rather than two large ones—i.e., more like historic period Taos than historic period Santa Clara (Stubbs 1950). Most reports on the larger Pueblo IV sites either date to the early twentieth century and do not provide very detailed internal site chronologies, or they present only surface mappings of rooms and kivas. Consequently, it is difficult to tell how many rooms and kivas were actually in use at a given time. The room-to-kiva ratios are so markedly different from the Pueblo I–III Mesa Verde ones, however, that these problems do not affect the contrast that can be drawn between these two sets of data.

In the Zuni portion of the Western Pueblo area, the small kiva-and-unit pueblo pattern was established well before the Pueblo III period (Woodbury 1979; Zier 1976; Roberts 1931, 1932, 1939b). In this area, the shift to large plaza-oriented sites and a radical decrease in the numbers of kivas relative to rooms also occurred about A.D. 1300 (Woodbury 1979; Kintigh 1985).

Moving farther west, it is my impression that in the Tusayan and Kayenta areas, prior to A.D. 1300, the small kiva-and-unit pueblo pattern was present but more variable in expression than in the central Mesa Verde area or the upper San Juan drainage as a whole. Pueblo II and III period Tusayan and Kayenta area kiva architecture also tends to be less formal and distinctive than in the Mesa Verde area. The Kayenta area appears to have been abandoned by the very late A.D. 1200s, contemporaneous with the final abandonment of the Mesa Verde area. Populations in the Tusayan (Hopi) area swelled at about the same time, and large, plaza-oriented villages with few kivas had largely replaced earlier settlement forms by A.D. 1300 (Adams, this volume). Adams traces the development of this community pattern to antecedents in the Upper Little Colorado-Mogollon Rim area in the mid- to late 1200s.

To the southeast, in the Mimbres area of New Mexico, Anyon and LeBlanc (1980) date the appearance of plaza-oriented pueblos to the Classic Mimbres period, which they place at A.D. 1000–1150. They also note that subterranean kivas and "large rooms," to which they assign a ritual/integrative function, appear during this same period. There apparently is no more than one of these structures per roomblock, and some roomblocks have none.

Thus, the Mimbres area displays a pattern of large villages oriented around plazas, with a low ratio of kivas to rooms, well before these settlement characteristics become common in Pueblo sites farther north. The principal exceptions are some of the Chacoan great...
houses of the period A.D. 1050–1150 in the San Juan Basin. Chacoan plazas, however, are located to the south or in "front" (Reed 1956) of a single roomblock, rather than between or surrounded by roomblocks, as is the case with Mimbres, Little Colorado, and Pueblo IV Anasazi settlements. Hence, Chacoan site layout continues to follow the basic Anasazi settlement plan that was dominant from Pueblo I through Pueblo III (Reed 1956). Functionally, however, the appearance of plazas in either type of settlement layout probably indicates an investment in ceremonies or other public activities that helped integrate people at the community or supra-community level.

Summary and Conclusions

Although some Pueblo I–III Mesa Verde protokivas and kivas may have served relatively large social units, most appear to be associated with quite small-scale ones, probably at the level of a few co-residential and economically cooperative households. Unlike nearly all surface rooms, Mesa Verde protokivas and kivas commonly have architectural and floor features that can be interpreted as serving ritual and symbolic ends, probably in the context of a religious ideology. Here I would include not only sipapus and floor vaults but the subterranean or pseudo-subterranean character and the roof entries of the kivas themselves. The myth of original emergence from an underworld or underworlds is universal and important in historic Pueblo mythology (Dozier 1970: 203-204). It seems likely that this myth is also quite old and prehistorically widespread. I do not find it surprising that the material symbols of this central myth underwent some changes in form and in architectural contexts during nearly 1500 years of prehistory and history. What is striking is how much continuity in form has been maintained through time (see Wilshusen, this volume). It is also understandable that these symbols came to be incorporated into the social context in somewhat different ways at different times. They may have served primarily small-scale groups before A.D. 1300, and primarily larger groups after that date.

From Pueblo I through Pueblo III the maintenance of powerful religious symbols and rituals by an extended family or other small co-residential unit may have helped make this unit not only economically but also ideologically self-sufficient. Socioeconomic organization based on the strength of these relatively small units may have promoted the well-documented flexibility of northern Anasazi settlement and adaptation.

In the drier western part of the Mesa Verde area outside the Mesa Verde-McElmo core area, the basic unit of Anasazi settlement appears to have been even smaller—the individual household rather than the kiva group (Jennings 1963; Lipe 1970: Matson, Lipe and Haase 1988), so there is nothing intrinsic or inevitable about unit pueblos. Even the extended family is a potentially fissionable unit that requires some mechanism of integration (cf. Johnson and Earle 1987). The small protokiva or kiva appears to have played an important integrative role for groups of this scale in the more productive and densely-settled portions of the Mesa Verde area during the Pueblo I through Pueblo III periods.

It appears likely that at least some Pueblo I–III period Mesa Verde kivas served groups larger than, or at least different from, an interhousehold unit. Sodality organizations such as medicine or dance societies could have been housed in such structures. Alternatively, an interhousehold group that wished to increase its influence over community or intercommunity affairs might have used a larger, more elaborate kiva in conjunction with ceremonious hosting of key individuals from other groups. Use of religious as well as social rituals in these contexts would have provided supernatural sanction for such efforts.

In addition to housing some types of religious rituals, the Pueblo I–III Mesa Verde kiva also must have contributed to social integration through its role as a jointly constructed and jointly used facility for certain domestic/economic activities shared among households. It may also have been a place where visitors from other interhousehold units or from other communities could be given hospitality, and where such guests and their hosts could exchange gifts of food or other materials (also see papers by Blinman and by Plog, this volume).

The small kiva/unit pueblo/modular aggregate pattern was very common in the Mesa Verde area and over large parts of the Anasazi area prior to about A.D. 1300, and was present in sites ranging from small hamlets to villages of several hundred rooms. At about A.D. 1300, as the abandonment of the Mesa Verde area and the rest of the northern San Juan region was completed, there was a rapid shift to larger, plaza-oriented villages with few kivas throughout the remaining populated portion of the Anasazi area. After A.D. 1300 the use of kiva architecture, and presumably its associated symbols and symbolic features, appears to have become restricted to groups that functioned at a community level of social integration, or at least at a level above the extended family or minimal lineage.

This shift may have been the result of the rapid spread and adoption of institutions that originated outside the Anasazi area, such as pan-community sodalities like the Katsina cult (Adams, this volume), or more formalized leadership patterns, or both. Alternatively, patterns of this sort may have been present but only weakly developed in earlier Anasazi societies, but were strongly selected for during the tumultuous times of the very late A.D. 1200s and early 1300s. As noted above,
there is some architectural and site-structure evidence suggesting such patterns may have been present in the Mesa Verde area before A.D. 1300. To date, this evidence is better for the Pueblo I and II periods than for Pueblo III. This, plus the synchrony of change from Eastern through Western Pueblo areas at A.D. 1300, tends to favor a "rapid spread and adoption" hypothesis such as the one put forward by Adams (this volume).

In either scenario we still must account for the loss of the small kiva/unit pueblo pattern, which had lasted for 500 years and had been functional in a variety of environments and in small and large settlements. As Steward (1937) and Eggan (1950) recognized, the conditions that selected against the small-scale kiva pattern and favored a restricted larger-scale use of kivas and their symbolic paraphernalia must have been the demographic disruption, movement, and coalescence that affected the Anasazi world in the middle and late A.D. 1200s.

The Pueblo III to Pueblo IV shift in the social scale of kiva use appears to represent a shift in the scale and composition of the most important social "survival vehicle" (Adams 1981) in Anasazi society. Before A.D. 1300, the Anasazi tended to emphasize a small, and hence mobile, group of cooperating households as the most important social unit. They built facilities and features that directly symbolized the integration of those units and provided the medium for rituals and other social activities to express and reinforce that integration. Although there were also integrative mechanisms for linking these small units into larger communities, they appear to have been relatively weak; in any case, the culture history of the Mesa Verde and other Anasazi areas reveals repeated cycles of the aggregation and subsequent dispersal of communities that range in form from loose clusters of hamlets to densely packed villages, such as McPhee (Pueblo I) or Sand Canyon (Pueblo III).

After A.D. 1300 the village community of several hundred persons appears to have become a stronger and ritually more reinforced social unit, though one still subject to occasional fission along kinship or factional lines. The association of kivas with sodalities or moieties meant that the symbolic properties of these structures were controlled by groups having membership drawn from a number of residential/kinship units scattered throughout the community (Eggan 1950; Dean 1970). Furthermore, as Adams (this volume) points out, the formalization of a central plaza or plazas provided a locale for community ceremonies. In the Eastern Tewa pueblos, the plaza is also the location of the nansipu or "earth navel" that marks the center of the cosmos for each village, and is an important orienting point for Tewa world view (Ortiz 1969, 1972; Swentzell 1985, 1988). If the village moves, the nansipu, or center, moves with it. Thus, "sacred space can be recreated again and again without exhausting its reality" (Ortiz 1972:142). Prior to A.D. 1300, sacred space may have moved with the interhousehold group rather than with the village.

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