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Architectural Metaphor and Chacoan Influence in the Northern San Juan

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In the fall of 1928, a group of elders from Acoma Pueblo decided to visit the capital of their new nation in Washington, D.C. During their visit, one of them worked with anthropologists from the Bureau of American Ethnology to record the origin story he learned when he was initiated into the Koshari society as a young man. The early episodes of this narrative (published in Stirling 1942) describe the beginning of time, before the Acomas emerged from the fourth world below to begin their life in this world. As is common in origin stories (e.g., Littleton 1982), the Acoma man's narrative provides a social charter for the society in which he lived, in that it explains the origins of leadership positions and medicine societies, spells out their roles and duties, and establishes the basis of their authority. The narrative also lays out the basic tenets of Acoma religion and worldview by explaining what the nonhuman world is, how it came to be, and how the Acomas were to honor and regulate it through their ritual practices.

The most important episode for the purposes of this chapter is the one in which Iatiku, the mother of the Acomas, gave Oak Man instructions on how to build the first kiva (Stirling 1942:18–20). According to Iatiku, the kiva was to be called "underworld house" in ceremonial language and represented the place where

the Acomas lived with the corn mothers before their emergence from the North. The roof hatch, through which the light from above could be seen when inside, represented *shipapu*, the path of emergence; the walls represented the dome of the sky; the roof timbers, the Milky Way; and the ladder, the rainbow. There were "fog seats" for spirits to sit on; the hearth was called "bear"; and the small circular pit that archaeologists call the *sipapu* was the "doorway to the powers that rule," including the cardinal mountains, the sun, and the moon.

This narrative presents a conception of the underworld as a place that was similar to this world and presents the kiva as a microcosm of this world by blending together terms applied to both the kiva and the environment. The world is conceived as a building when the narrative speaks of a "doorway" to the sun and moon and refers to the Milky Way as "way above earth beam." Likewise, the kiva is presented as a microcosm when the hearth is called "bear" and the ladder is called "rainbow."

This narrative about the first kiva illustrates a phenomenon cognitive scientists call *conceptual projection* (Fauconnier 1997). In this case, entities and properties of the kiva are projected onto the world writ large, and relationships among elements of the kiva are used to explain how corresponding elements of the world relate to each other. That is, the world is conceptualized as a kiva, and the kiva is a microcosm of this world. These architectural metaphors, expressed through idioms, the names of parts of buildings, and the form and decoration of buildings, reveal the significance of architecture for cultures all over the world. However, the specific metaphors that make architecture meaningful vary from place to place. In West Africa, for example, the Batammaliba house does not have a "rainbow" or "fog seats" but does have a stomach, womb, eyes, nose, mouth, and so forth (Blier 1987:122). So in this culture, the house is conceptualized as a person in addition to being a microcosm like the Acoma kiva.

Architectural metaphors can also become deeply embedded within a culture and highly resistant to change. For example, the Southern Tiwa, who today live about seventy miles east of Acoma near Albuquerque, New Mexico, call the kiva or pithouse *túła*, a word that varies from *tuła*, "cottonwood tree," only in the stress on the initial vowel (Harrington n.d.:29). Cottonwoods grow rapidly where there is groundwater, and Southern Tiwa people say they emerged into this world from *ship'aphun'ai*, or "eye-water black place," a lake to the north (the direction for which the associated color is black among Southern Tiwas) at the headwaters of the Rio Grande (Harrington n.d.:1). This conceptual imagery is very similar to that of their linguistic cousins, the Rio Grande Tewa, who call the kiva *te'e*, a word that also varies from *te*, "cottonwood," only in the stress on the initial vowel (Harrington 1916), and say they emerged from *p'okwin*, a lake in the north (Ortiz 1969). In addition, the Tewa refer to the emergence path as *p'okwik'oji*, or "lake roof-hole." All of this suggests that both the Rio Grande Tewa and the Southern Tiwa imagine the lake of emergence as a pithouse or kiva with roof entry. This architectural metaphor is probably part of their common inheritance (S. Tiwa *túła*, "pithouse," and *tuła*,

"cottonwood," are likely cognate with Tewa *tequa*, "house," and thus with *te*, "cottonwood," and *te'e*, "kiva"), despite the fact that these two Tanoan languages have probably been separate for about 1,000 years (Davis 1959). The Tanoan image of the emergence lake as a kiva is different from that of the Acomas, who use the kiva to conceptualize the underworld overall.

These examples illustrate that architectural metaphors can reveal some of the concepts that define cultural identities and make them distinctive, meaningful, and traditional. Architectural metaphors are widespread in the ethnographic record (Parker Pearson and Richards 1994:note 1) and are probably at least as old as the Paleolithic caves of Europe (Lewis-Williams 2002:chapter 9), so they have likely been part of the human imagination for most of our history. These metaphors are obvious in the earlier examples because they are expressed through figurative language, but for archaeologists the critical question is whether we can decipher such metaphors from archaeological evidence alone, without recourse to ethnographic analogy or linguistic reconstruction. I believe we can if we ground our method in generalizations on the structure of figurative thought and follow a code-breaking procedure similar to that used in decipherment of ancient scripts (see Ortman 2000:616–621).

In this chapter I use this middle-range theory of the mind (after Cowgill 1993) to decipher some architectural metaphors of Ancestral Pueblo people who lived in the Northern San Juan region of southwestern Colorado and southeastern Utah between A.D. 1020 and 1280. I argue that these people conceived of buildings as containers and also as microcosms of a world that was container-like. I then examine the extent to which these concepts are expressed in sites associated with Chaco Canyon to determine whether these architectural metaphors could have spread into the Northern San Juan by way of the Chacoan regional system. I argue that several "Chaco outlier" great houses in the Northern San Juan materialized local metaphors not expressed in Chaco Canyon. This, in turn, suggests that even if "Chacoan influence" involved the introduction of new architectural traits to the Northern San Juan, it did not involve the replacement of local architectural metaphors by Chacoan worldview concepts.

DECIPHERING ARCHITECTURAL METAPHORS

In my previous work, I proposed that conceptual metaphors can be deciphered from archaeological evidence using methods derived from cognitive research on figurative speech, especially the work of George Lakoff (1987, 1993; Lakoff and Johnson 1980, 1999), Gilles Fauconnier (1997; Fauconnier and Turner 1994), Raymond Gibbs (1994), and others (Croft and Cruse 2004:chapter 8; Kövecses 2002). From a review of this literature, I have identified six properties of metaphor that characterize human cultural cognition (Table 12.1; also see Ortman 2000). These generalizations are critical because they provide something like "grammatical" rules for figurative expressions in material culture. In other words, expressions of a

Table 12.1. Six properties of conceptual metaphor (from Ortman 2000:616–619).

1. Directionality principle:	Metaphor is a point-for-point mapping of image-schematic structure from a concrete source domain to an abstract target domain.
2. Superordinate principle:	Conceptual metaphors exist at the superordinate level of classification but are expressed using concrete imagery.
3. Invariance principle:	Image-schematic properties of the source that contradict properties of the target are not mapped.
4. Constitutive principle:	Metaphors do more than express the results of thinking; they actually represent conventionalized ways of thinking and reasoning.
5. Blending principle:	Multiple source domains can be combined for mapping onto a single target if they share image-schematic structure.
6. Experiential principle:	Metaphors derive from the concrete, bodily experiences of individuals in specific physical and social contexts.

proposed metaphor should follow these rules if we have a large enough corpus of material culture to study and if the metaphor really was part of the culture of an ancient social group rather than invented by the analyst.

The logic of metaphor analysis is quite different from traditional hypothesis testing, where the data are supposed to be independent of the hypothesis under consideration. Instead, in metaphor analysis, as in decipherment, the hypothesis to be tested actually determines what the data are. This aspect of my approach makes some archaeologists uncomfortable, but it is in fact the way epigraphers have worked from the time of Napoleon to the present day (Pope 1999). When deciphering an ancient script, there is no way to assign phonetic values to signs until one has developed a model of the type of writing system represented (alphabetic, syllabic, logographic) and the language expressed by it. It is therefore not practical to test numerous working hypotheses on how a writing system works because each hypothesis leads to a different assessment of what the signs of the script represent and thus to separate analyses of the "data." It is more efficient to pursue the hypothesis that appears most promising to determine whether a script produces plausible utterances when the signs are interpreted according to this hypothesis.

I suggest that metaphor analysis works the same way. Figurative thought is, in fact, highly structured and follows the "grammatical" rules identified in cognitive linguistic research that are summarized in Table 12.1. These rules are analogous to the concept that complete sentences have a subject, object, and verb. If one interprets a corpus of material culture in terms of a given metaphor hypothesis and determines that the resultant "data" have a structure consistent with the rules of figurative thought, then it can be said that one has supported a metaphor hypothesis. A researcher can also reject this hypothesis if new data that clearly contradict this structure come to light. In short, I believe metaphor analysis can produce stable knowledge of the past that is every bit as justified as reconstructed settlement patterns, climate cycles, or interaction networks.

In this chapter I pursue the decipherment of architectural metaphors. These can be materialized in any number of ways, including the form and construction of

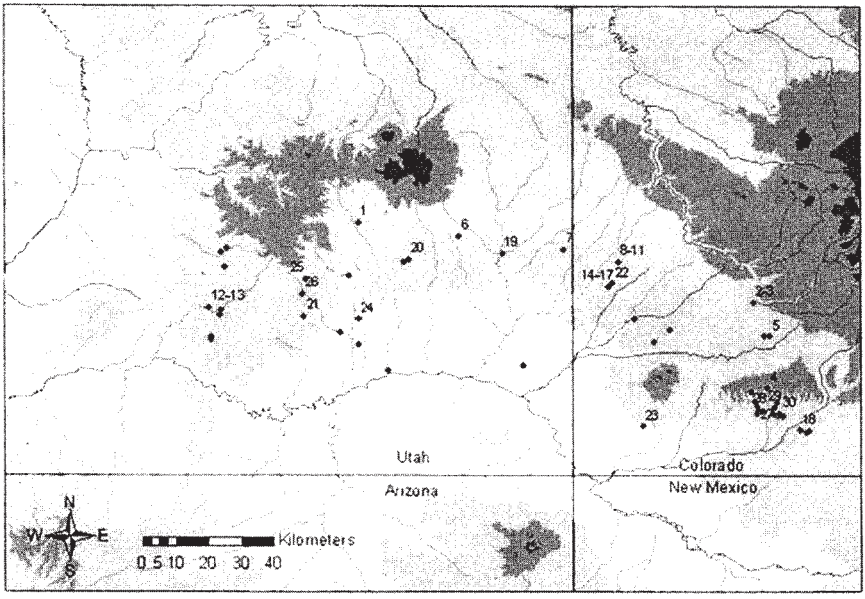

Figure 12.1. The Northern San Juan region. Diamonds indicate locations of sites containing decorated buildings. Numbers indicate locations of murals cataloged in Table 12.2. © Crow Canyon Archaeological Center.

buildings, the ritual uses of architectural spaces, and the decoration of architectural surfaces. I focus primarily on decorative treatment and include observations on form and construction that relate to architectural metaphors suggested by decoration. Through a combination of site visits and literature reviews, I have compiled a database of painted and engraved compositions on the walls of buildings in the Northern San Juan region (Figure 12.1). My sample includes ninety-two compositions in eighty-three structures from fifty-four different sites. Most are from cliff dwellings, but decorated walls are also preserved in open sites, including kiva murals from four "Chaco outlier" great houses—Lowry Ruin, Haynie Ruin, the Hedley Site Complex, and the Bluff Great House. In these pages I adduce evidence that several architectural metaphors were expressed through these wall decorations.

Buildings Are Containers

The oldest decorated building in my database is a subrectangular pit structure exposed by looting in Harness Cave, in Allen Canyon, Utah (Figure 12.2a). Although it has not been tree-ring dated, its subrectangular shape, the absence of masonry pilasters, the presence of Mancos Black-on-white pottery, and the absence of later types on the surface of the site suggest it dates to the first half of the A.D.

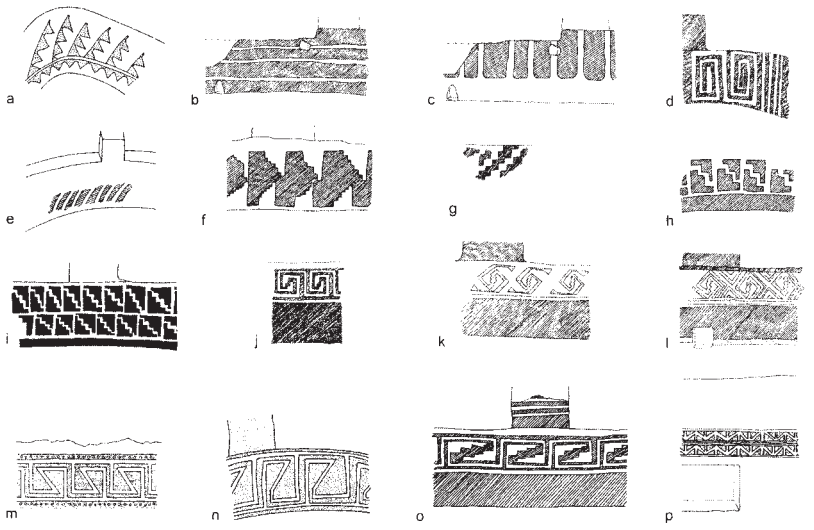

Figure 12.2. Pottery-band murals in kivas: (a) Mural 1, Harness Cave, adapted from author photo; (b) Mural 2, 5MT5498, adapted from Rohman 2003:fig. 12-31; (c) Mural 3, 5MT5498, adapted from Rohman 2003:fig. 12-31; (d) Mural 5, Haynie Ruin, adapted from author photo; (e) Mural 6, Alkali Ridge Site 11, adapted from Brew 1946:fig. 87d, (f) Mural 8, Lowry Ruin, adapted from Martin 1936: plate LXI; (g) Mural 9, Lowry Ruin, adapted from Martin 1936:plate LXII; (h) Mural 10, Lowry Ruin, adapted from Martin 1936:plate LXIII; (i) Mural 11, Lowry Ruin, adapted from Martin 1936: plate LXIV; (j) Mural 14, Knobby Knee Stockade, adapted from Morris 1991:fig. 3.39; (k) Mural 15, Knobby Knee Stockade, adapted from Morris 1991:fig. 3.42; (l) Mural 16, Knobby Knee Stockade, adapted from Morris 1991:fig. 3.44; (m) Mural 19, Dibble site, adapted from Smith 1952:fig. 7h; (n) Mural 20, Westwater 5 Kiva Ruin, adapted from author photo; (o) Mural 22, Roundtree Pueblo, adapted from Morris 1991:fig. 5.24; (p) Mural 27, Long House, adapted from Cattanach 1980:fig. 66. Scale varies. Renderings by Scott Evans, © Crow Canyon Archaeological Center.

1000s. The painted mural in this structure is a band design that covered the entire lining wall and is exposed on two walls and appears to run continuously around all four. The motifs and layout of this mural are also identical to designs commonly found on Mancos Black-on-white pottery. I have identified twenty-seven additional compositions in nineteen additional sites dating between A.D. 1060 and 1280 that consist of geometric band-design murals (Figure 12.2, 12.3g, h; Table 12.2). Following the logic of decipherment, I have assumed that these murals are representations of pottery designs and have recorded details of their form and context based on the hypothesis that they express a metaphorical conceptualization of buildings as containers. Using these data, combined with information on kiva roof construction, I have identified archaeological patterns that illustrate all six properties of conceptual metaphor. This suggests that BUILDINGS ARE CONTAINERS was an architectural

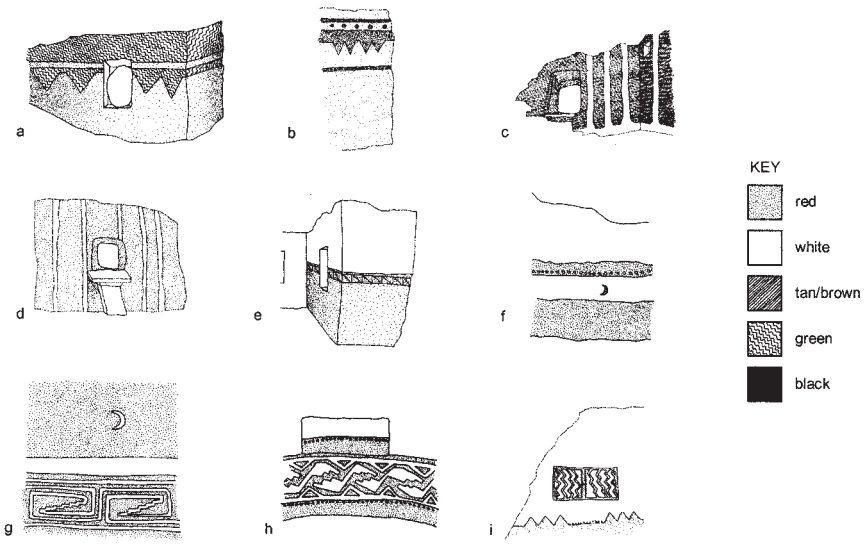

Figure 12.3. Pottery-band murals on storage rooms, and murals that blend landscape and container imagery: (a) Mural 12, Green House; (b) Mural 13, Green House; (c) Mural 18, Hoy House; (d) Mural 21, Moon House; (e) Mural 25, Polychrome House; (f) interior of Moon House, Room I; (g) Mural 24, Fishmouth Canyon Ruin; (h) Mural 26, Painted Kiva site; (i) Mural 30, Cliff Palace. Scale varies. All adapted from author photos except for g, adapted from author photo and BLM site file photos. Renderings by Scott Evans, © Crow Canyon Archaeological Center.

metaphor of the Northern San Juan. (Small caps are used to denote conceptual metaphors, following the convention established by Lakoff and Johnson [1980].) In the following paragraphs I review these six properties and discuss patterns that illustrate them in this corpus of data.

The first property, the *directionality principle*, states that conceptual projection usually proceeds from a relatively structured source to a more abstract target. This is why *Time Is Space* but space is not time; *spring* can be just around the corner, you can be *sitting* just around the corner, but you cannot be sitting *spring* from me. The pottery-band murals illustrate this principle because several details of pottery decoration are mapped onto structure walls, but details of architecture are never mapped onto pottery. For example, nineteen kivas in the database are decorated with band designs identical to those found on pottery bowls, but I have never seen a pottery bowl on which kiva floor features were represented in paint.

In addition, the designs mapped onto structure walls follow the chronological development of both pottery designs and weaving processes. In my previous work, I found that Northern San Juan pottery designs were based on the metaphor POTTERY IS A TEXTILE and documented that innovations in pottery decoration closely followed innovations in weaving processes over time (see Ortman 2000:table 6). This

Table 12.2. Pottery-band and container/landscape murals in the Northern San Juan region.

Map Reference	*Site Name*	*Site Number*	*Structure Number*	*Structure Type*	*Mural Location*
Pottery-band murals					
1	Harness Cave	—	Pit structure	Kiva	Interior wall
2–3	—	5MT5498	Structure 6	Kiva	Interior wall
4	Site 875	5MV875	Kiva B	Kiva	Interior wall
5	Haynie Ruin	—	Kiva	Kiva	Interior wall
6	Site 11, Alkali Ridge	—	Kiva	Kiva	Interior wall
7	Hedley Main Ruin	42SA22760	Structure 3005	Kiva	Interior wall
8–11	Lowry Ruin	5MT1566	Kiva A, B, D	Kivas	Interior walls
12–13	Green House	—	Rooms	Granaries?	Exterior walls
14–17	Knobby Knee Stockade	5MT2525	Pit structure 6	Kiva	Interior wall
18	Hoy House (Porcupine House)	5MTUMR2150	Rooms 41, 43, 45, 47, 49	Granaries?	Exterior walls
19	Dibble site	—	Kiva	Kiva	Interior wall
20	Westwater 5–Kiva Ruin	42SA14	Kiva	Kiva	Interior wall
21	Moon House	42SA5005	M-1, Room B5	Granary?	Exterior wall
22	Roundtree Pueblo	5MT2544	Pit structure 6	Kiva	Interior wall
23	Cowboy Wash	5MT9541	Feature 12	Kiva	Interior wall
Compositions that blend container and landscape imagery					
24	Fishmouth Canyon Ruin	42SA8817	Square Kiva, F2	Kiva	Interior wall
25	Polychrome House	42SA1732	Rooms	Granary	Exterior wall
26	Painted Kiva site	42SA9310	West Kiva	Kiva	Interior wall
27	Long House	5MV1200	Kiva E	Kiva	Interior wall
28	Kodak House	5MV1212	Kiva B	Kiva	Interior wall
29	Spruce Tree House	5MV640	Room 47	Tower	Interior wall
30	Cliff Palace	5MV625	Room 11	Tower	Interior wall
31	Red Kiva site	42SA23910	Kiva	Kiva	Interior wall

Note: 1. Crow Canyon Archaeological Center.

Date (A.D.)	Number of Compositions	Description	Reference(s)
1020–1060	1	Coiled basket motif band design	Author site visit, 10/5/03
1060–1140	2	Framing pattern (coiled basketry texture) underneath a non-loom band design	Rohman 2003:fig. 12-31
1060–1100	1	Geometric, possible non-loom band design	Lister 1965:plate 9
1100–1140	1	Non-loom band design	Village Project large site files, CCAC[1] archive
1100–1140	1	Twill-rib texture (striped-twill) band design	Brew 1946:fig. 87d
1100–1140	1	Indeterminate geometric band design	Ortman et al. 2000; unpublished field notes on file, CCAC
1100–1140	4	Four plain-tapestry band designs	Martin 1936:plates LXI, LXII, LXIII, LXIV; Ahlstrom, Breternitz, and Warren 1985
1140–1180	2	Two coiled basket motif band designs	Author site visit, 7/2001
1180–1225	4	One plain-tapestry band, two twill-tapestry bands, and one twill-tapestry band inside a framing pattern (coiled basketry texture)	Morris 1991:figs. 3.39, 3.42, 3.44
1180–1225	1	Non-loom band design	Nickens 1981:fig.3; Author site visit 7/3/03
1225–1260	1	Plain-tapestry band design	Smith 1952:figure 7h
1225–1260	1	Plain-tapestry band design	Author site visit, 10/5/03
1225–1260	1	Non-loom band design	Bloomer 1989:98
1225–1260	1	Plain-tapestry band inside a framing pattern (coiled basketry texture)	Morris 1991:fig. 5.24
1225–1260	1	Plain-tapestry band design	Martin, p.c., 2004
1225–1260	1	Plain-weave band design with framing line, with crescent on west wall and disc on east wall above band design	Gunckel 1892:562; Utah State site form; Author site visit, 10/5/03
1260–1280	1	Bichrome with etched, plain-weave band design at upper boundary of red field	Author site visit, 6/2001; Utah State site form
1260–1280	1	Twill-tapestry band design on lower lining wall; horizon scene on pilasters	Author site visit, 6/2000; Utah State site form
1260–1280	1	Twill-weave band design with framing lines, with mountain sheep in white field above band design	Cattanach 1980:fig. 66
1260–1280	1	Bichrome on lower lining wall, pottery design (nested triangles) on pilaster	Fetterman and Honeycutt 1989:36, fig. 29
1260–1280	1	Horizon scene with bird and mountain sheep on the boundary between red and white and a textile representation in white field above	Nordenskiöld 1990; Fewkes 1909:52
1260–1280	1	Horizon scene with textile representations in white field above	Fewkes 1911:plate 13a; Malville and Munson 1998
1225–1260	1	Horizon scene with terraces in white field above	Author site visit, 5/2005; Utah State site form

Table 12.3. Pottery/textile imagery in architectural murals through time. Shaded cells indicate periods during which the textile source of the analogous pottery design is attested.

	Time Period (years A.D.)							
Source Imagery (from Textiles)	*1020–1060*	*1060–1100*	*1100–1140*	*1140–1180*	*1180–1225*	*1225–1260*	*1260–1280*	*Total*
Coiled basketry band design	1			2				3
Coiled basketry texture		1						1
Non-loom band design			2		1	1		4
Plain-tapestry band design			4		1	3	1	9
Plain-tapestry band inside coiled basketry texture						2		2
Twill-rib (striped-twill) texture design			1					1
Twill-tapestry band inside coiled basketry texture					1			1
Twill-tapestry band					2		3	5
Indeterminate textile imagery		1	1					2
Total	1	2	8	2	5	6	4	28

chronological pattern also holds for the pottery-band mural paintings. Table 12.3 summarizes Northern San Juan pottery-band murals according to their date and the weaving process that was the ultimate source of the mural design. The shaded areas represent time periods during which the sources of the mural imagery are attested in basketry or warp-weft weaves and in pottery designs (after Ortman 2000:table 6). Because no murals occur in periods represented by the unshaded cells, these data are consistent with the expectation that pottery-band murals followed stylistic developments in both pottery decoration and textile design.

This pattern raises the question of whether the mapping was actually from textiles to buildings or whether buildings were decorated with pottery designs that in turn derived from textiles. Regardless of the answer, the mapping was clearly directional, with imagery projected from actual containers (pots and baskets) to architectural spaces. I believe the latter situation is more likely because the walls and floors of buildings share more image-schematic structure with pots than they do with baskets (Table 12.4). Basketry bowls and pottery bowls are both actual containers and have a bowl shape. The walls and floor of a kiva do not make an actual container or present the woven vegetal surface of a basket, but they do create a bowl shape and present a smooth, earthen surface that is parallel to a pottery bowl. Thus kiva walls and floors share more image-schematic structure with pottery bowls than with basketry bowls, suggesting that the mapping was from pottery onto the kiva, with pottery "pre-conceptualized" as a textile. Such "conceptual chaining" is in fact quite common in figurative thought and expression (Kövecses 2002:19). For example, in the expression "he was consumed by a burning passion, and she fed the fire," passion is conceptualized as fire, and fire is in turn conceptualized as an insatiable animal.

Table 12.4. Correspondences among kivas, pottery bowls, and baskets.

Attribute	*Kiva Walls and Floor*	*Pottery Bowl*	*Basketry Bowl*
Bowl shape	X	X	X
Actual container		X	X
Smooth earthen surface	X	X	

The second property, which I call the *superordinate principle*, states that conceptual metaphors exist in the brain at relatively abstract levels of categorization but are expressed at the basic level of concrete mental imagery. Thus, in English, LIFE IS A JOURNEY, but we usually express the concept using concrete images of planes, trains, and automobiles, as in "his career is off-track." This principle is supported by the fact that container imagery occurs in several different architectural contexts, including kiva walls, kiva roofs, and granaries. First, in the case of kiva walls, I have documented twenty cases in which a continuous pottery-band design was painted over a smooth, plastered surface on the interior face of the circular central chamber. These kiva walls, with pottery-textile designs painted on a smooth surface, clearly present the image of a pottery bowl with a geometric band design running parallel to the rim.

Second, the standard way of constructing kiva roofs in the Northern San Juan suggests that such roofs were modeled as coiled baskets. Most kivas in this region have three to eight courses of timbers running between six evenly spaced pilasters inside the round chamber, with the ends of the timbers in each course offset from the course below and above. In some examples, the crib layers form a dome shape, and in others they are stacked vertically. In either case, a flat roof was constructed over the top of the cribbing. It appears from the woven, vegetal, dome-shaped appearance of these roofs that the image presented was that of an overturned coiled basket, mirroring the pottery bowl defined by the kiva walls and floor below.

Third, I have documented four examples of aboveground structures decorated as pottery seed jars on the exterior faces of the preserved walls (Table 12.2, Figure 12.3a–e). These structures blend together attributes of corn granaries and living rooms. All four have small doorways that could be sealed to protect their contents, and one example (Figure 12.3e) also has unsooted walls and is filled with corn cobs, confirming a storage function. However, two other structures (Figure 12.3a, d) have fire pits inside, and a third structure (Figure 12.3c) is unsooted but occurs on the second story of a roomblock for which the upper floors are not preserved. At least one of these structures was clearly designed and used as a corn granary, and the others could have been either granaries that were later appropriated for human activities or habitable rooms that look like granaries from the outside. To better understand these structures, it is important not to overlook the widespread occurrence of the metaphor PEOPLE ARE CORN among maize agriculturalists of the Western Hemisphere, including the Maya (Friedel, Schele, and Parker 1993), Mixtec (Monaghan 1995), Nahua (Sandstrom 1991), Huichol (Schaefer and Furst 1996), and Pueblos

(Ortiz 1969). Given the widespread occurrence of this concept, perhaps the decorated granaries with hearths are metaphorical granaries for people.

Regardless of the functional interpretation of these structures, all four present granary facades, and all four are decorated with pottery-textile imagery arranged in a horizontal band around the preserved exterior walls. These structures are not circular, and because all were built against rock faces in alcoves, none ever had four walls that could have been decorated. Also, the relationship of the mural to the doorway on granary exteriors is different from the relationship of the orifice to the band design on seed jar exteriors. Nevertheless, a band design is horizontal on a jar sitting upright, and only that part of the band that faces a viewer is visible when a jar is viewed from the side. These essential characteristics, in addition to the motifs comprising the band designs, sealable openings, and smooth earthen surfaces, are parallel between seed jars and granaries and therefore suggest these granary facades are decorated as seed jars. Basketry jars with sealed openings have not been found in Ancestral Pueblo sites, whereas pottery jars with lids of pottery or shaped stone are common. This suggests that the mapping was in fact from pottery jars to granaries rather than from basketry jars directly.

Based on this discussion, it appears that the form and decoration of buildings in the Northern San Juan support the superordinate principle because the varied expressions of BUILDINGS ARE CONTAINERS used the concrete imagery of pottery bowls, coiled baskets, and seed jars, in the same way English speakers talk about life using the concrete imagery of planes, trains, and automobiles.

The third property, which I call the *invariance principle*, states that aspects of a source domain that are contradicted by the inherent structure of the target domain are not mapped. This is why TIME IS MONEY; we can spend or waste time, but saved time does not accumulate interest. The pottery-band murals illustrate this property because allover designs, and the specific motifs associated with them, do not occur as mural paintings. The reason for this is that allover designs were mapped onto pottery using the imagery of twill-plaited ring baskets (Ortman 2000:figures 6, 13, 14). These baskets were made by plaiting a square mat of yucca strips and then pressing this mat through a circular hoop, to which the ends of the plaiting strips were fastened. Although the shape of a twill-plaited ring basket does mirror the hemispherical shape of a pottery bowl, such baskets do not have a base and sides corresponding to the walls and floor of a building. In contrast, coiled baskets, an additional source for pottery design imagery, could and often did have a flat base and vertical sides that do correspond to parts of a building.

Based on this differential correspondence between basket and building shapes, one would predict, according to the invariance principle, that the motifs in pottery-band murals would be restricted to those that could be mapped onto pottery via coiled basketry. This is, in fact, what occurs. Motifs such as Dogozshi-style, hatched-ribbon frets (representing interval-shift designs in twill-plaited basketry) and background hachure designs (representing twill-tapestry cotton fabrics with allover designs substituted for the plaited mat of a ring basket) are completely absent from

pottery-band murals. In contrast, parallel lines, terraces, and triangles, all of which were mapped onto pottery via coiled basketry, are common in these murals (see Ortman 2000:table 3).

It is interesting to note how specific these restrictions are. Mural 6, from Alkali Ridge Site 11 (Figure 12.2e), consists of a band of closely spaced diagonal lines. Although this mural is poorly preserved, J. O. Brew (1946:141) states that "traces here and there indicated that the diagonal stripes had run all around the kiva." This mural thus consists of a hachure band, which could conceivably derive from the woven texture of a textile produced in a variety of industries, including twill-plaited basketry, twill-tapestry loom weaving, or striped-twill loom weaving. If this design derived from either of the first two options, it would violate the invariance principle. However, this composition most likely represents a striped-twill pattern because the twill ribs in plaited basketry would not parallel the rim of the basket the way the hachure band follows the bench of the kiva, and the hachure is not combined with solid motifs that would indicate an allover twill-tapestry weave. In addition, striped-twill loom weaving had been introduced by the time this kiva was built and decorated, whereas twill-tapestry weaving had not (Ortman 2000:table 2). Thus it appears the design of this mural was imagined by substituting the wefts of a striped-twill weave for the coils of a coiled basket. This mapping is consistent with the invariance principle because it maps loom-based imagery onto the kiva using coiled, not plaited basketry.

There is no physical reason why motifs derived from twill-plaited basketry or twill-tapestry loom weaving could not also have been painted on structure walls, but they do not occur in any of the twenty-six pottery-band murals with classifiable patterns in my database. These specific designs (analogous features 15 and 21 in Ortman 2000:table 6) occur on approximately 25 percent of decorated serving bowls dating between A.D. 1060 and 1280 in the Northern San Juan, so it is unlikely that sampling error is responsible for their complete absence in pottery-band murals (chi-square $P < 0.011$). However, this restriction makes complete sense when it is considered in light of the invariance principle, conceptual chaining, and the specific metaphors involved. If the walls of kivas and granaries were conceptualized as pottery vessels and pottery vessels were in turn conceptualized as textiles, any mappings of pottery designs onto buildings would need to be consistent with the inherent structure of both textiles and pottery. This is in fact what occurs, and the specific restrictions on these mappings are consistent with the invariance principle.

The fourth property, which I call the *constitutive principle*, states that a conceptual metaphor is not just a way of expressing thought but is in fact a conventionalized way of thinking and reasoning. In other words, everyday thinking and reasoning normally occur through the operation of conventional metaphors. This is why it is very difficult to conceive of time without using the framework provided by space or of intellectual argument without the framework of a building. Our literal understanding of concepts such as space and argument are actually quite impoverished.

Metaphor helps us flesh out these concepts so we can think and reason about them in more detail (Lakoff and Johnson 1999). The details of typical kiva roof construction in the Northern San Juan illustrate this principle. Nearly all kivas constructed after A.D. 1100 in this region had six masonry roof support pillars, or pilasters, spaced evenly around the interior chamber. In nearly all preserved kiva roofs, the beams of the first crib layer span the distance between adjacent pilasters, and beams of subsequent crib layers are offset so that the ends of the beams rest on the midpoint of those from the layer below. Two to eight courses of cribbing occur in these roofs, and shredded juniper bark, often referred to as closing material, was also packed between the cribbing beams, in a way reminiscent of the typical two-rod-and-bundle foundation of coiled baskets from the Northern San Juan (Morris and Burgh 1941).

What is striking about these roofs is that the crib layers were not load-bearing. Regardless of whether the crib layers were stacked upright or corbelled to form a dome, the roof itself was flat and supported by vigas that spanned the entire structure and rested on the masonry upper lining wall as well as the uppermost crib layer (Hovezak 1992:41). This is in fact the standard form of kiva roof construction in intact roofs observed by Mark Hovezak (1992) at Square Tower House and Lion House on Mesa Verde and by me during visits to Lewis Lodge, Bannister Ruin, Bare Ladder Ruin, Perfect Kiva Ruin, the Slickhorn Perfect Kiva site, and the Cigarette Springs site in southeastern Utah. Thus the dozens of timbers involved in cribbing a typical kiva were unnecessary from a structural point of view. The flat roof could have been supported completely by masonry, but instead, the design of the typical kiva included a lining of timbers around the upper part of the structure walls, below the roof itself. The occurrence of a cribbed kiva in nearly every house—despite the reliance on wood for cooking, pottery firing, and heating and the slow growth rate of trees in the local environment—clearly indicates that cribbing was a strong architectural convention. It is equally clear that coiled basketry was the source of this convention. Cribbed kiva roofs thus illustrate the constitutive principle because they represent a conventional design rooted in a specific metaphor, despite the fact that there were good economic reasons for designing less expensive roofs.

The fifth property, which I call the *blending principle*, states that two conceptual domains with equal inherent structure can be blended to produce new concepts that are physically impossible but conceptually coherent (Fauconnier 1997; Fauconnier and Turner 1994). This is why you can have a "brainstorming" session with your colleagues, even though a storming brain is literally ridiculous. The connection between thunderstorms and brain activity motivating this concept is electricity, which occurs in the form of lightning in storms and firing synapses in the brain. This correspondence promotes the blending of additional conceptual structure, making it possible to imagine a lightning bolt as a "flash of insight." The occurrence of murals that present pottery designs that are themselves blends of imagery from two different forms of weaving illustrates this principle. For example, on Mural 22 at Roundtree Pueblo (Figure 12.2o), there is an interlocking band

design on the lower lining wall of the kiva and framing lines on the pilasters. To understand this composition as an example of blending, we need to consider the derivation of this design from textile imagery and its mapping onto kiva walls.

In pottery, designs such as that on Mural 22 were imagined by blending coiled basketry with loom weaving. The weft threads of a woven article were substituted for the coils of the basket to create a regular, repeating pattern, and the coiled basket onto which the woven article was mapped was acknowledged by creating a framing pattern of thin parallel lines above the band design to represent the surface texture of this basket (see Ortman 2000:632–634). There is a basis for creating this blend on an actual pottery bowl because the shape of a pottery bowl corresponds to that of a basket but not to that of a loom-woven textile. There is also a basis for relating the pilasters of a kiva to the rim area of a pottery bowl because the pilasters are the uppermost smooth plastered surface of the kiva chamber, on which the vegetal, cribbed roof rests. However, there is no corresponding basis for mapping a coiled basket texture directly onto the pilasters because the pilasters do not actually continue the round shape of the lower lining wall below. Thus a putative mapping of a basket directly onto the kiva walls would stop at the bench and not continue onto the pilasters. In contrast, the smooth plastered faces of the kiva pilasters are parallel to the slipped surface of a pottery bowl, so there is an image-schematic basis for continuing the pottery decoration onto the pilasters. This design thus illustrates blending and supports the notion that it is pottery vessels decorated with weaving imagery, and not textiles themselves, that are displayed on these murals.

Finally, the sixth property, which I call the *experiential principle,* states that metaphors are grounded in the direct bodily experiences of individuals in a given cultural context. This is why computer viruses are only possible in a society that knows about both computers and microorganisms. The pottery-band murals are consistent with this principle because several formal and experiential properties of buildings are analogous to those of pottery vessels, and these are as apparent today as they must have been in the past. Table 12.5 lays out a number of these specific correspondences between pottery bowls and kiva walls, coiled baskets and kiva roofs, and seed jars and granaries. These correspondences provided experiential motivation for conceptual relationships between pottery vessels and buildings.

The World Is a Building

Beginning around A.D. 1180, a second major form of wall decoration began to appear in the Northern San Juan. This new style consisted of simple dados, with the lower portion red and the upper portion tan to white, as well as more complex compositions that included sets of projecting triangles and dots running along the boundary between the two colors. The more complex compositions look like abstractions of the horizon, and details such as the crescent moon in the upper field of a mural from Moon House (Figure 12.3f) suggest that a horizon view, with the earth in red and the sky in white, is indeed what they represent. For the sake of

Table 12.5. Correspondences between containers and buildings.

A. Pottery bowl	*Kiva walls*
1. Base	1. Floor
2. Rim	2. Pilasters
3. Hemispherical shape	3. Circular lining wall
4. Clay coils	4. Masonry, mortar
5. Slipped surfaces	5. Plastered surfaces
6. Presents cooked food	6. Contains mature people
7. Interior surface visible	7. Interior face of walls visible
B. Coiled basket	*Kiva roof*
1. Hemispherical shape	1. Domed shape
2. Rod foundation	2. Roof timbers
3. Bundle	3. Closing material
4. Stitching material	4. Yucca bindings
5. Coiling technique	5. Cribbing technique
6. Sides	6. Stacked crib layers
7. Center	7. Roof hatch
C. Seed ("Kiva") jar	*Granary*
1. Base	1. Floor
2. Vessel walls	2. Structure walls
3. Orifice	3. Doorway
4. Lip for lid	4. Coping around door
5. Lid	5. Door slab
6. Holes for cordage to seal opening	6. Loops to seal door
7. Clay coils	7. Masonry, mortar
8. Slipped surfaces	8. Plastered surfaces
9. Contains seeds	9. Contains cobs
10. Exterior surface visible	10. Exterior face of walls visible

analysis, I will call the dados *bichromes* and the more complex compositions *horizon scenes* and will assume that both forms represent abstractions of the landscape. I have identified forty-three landscape murals of these two types across the Northern San Juan, and once again, patterns in this corpus of imagery are consistent with a metaphor interpretation, in this case THE WORLD IS A BUILDING.

The *superordinate principle* is supported because landscape murals were painted on walls of many different kinds of buildings, including kivas, great kivas, and rooms. In other words, several different kinds of buildings were decorated to express the concept that the world is a building. The *invariance principle* is also supported because landscape murals were almost always painted on interior walls (Table 12.6). A person cannot be physically outside the horizon, and thus it makes more sense to paint horizons around spaces people can actually be inside. Only five of the forty-three landscape mural compositions occur on building exteriors. Four of these are simple bichromes, and only one building with an exterior landscape mural does not also have one on its interior (the granary at Polychrome House, Mural 25). Given

Table 12.6. Contexts of landscape murals in the Northern San Juan.

	Exterior Wall		*Interior Wall*		
Structure Type	*Bichrome*	*Horizon*	*Bichrome*	*Horizon*	*Total*
Ground-floor room	2	1	4	4	11
Second- or third-story room	1	—	3	6	10
Granary	1	—	—	—	1
Kiva	—	—	3	16	19
Great Kiva	—	—	—	2	2
Total	4	1	10	28	43

these data, it is highly unlikely that landscape murals were painted randomly with respect to building interiors versus exteriors (chi-square $P < .001$).

Given that buildings had been conceptualized as containers prior to the appearance of landscape murals in the Northern San Juan, we might also expect to see murals that blend container and landscape imagery. This blending does in fact occur and is most obvious in thirteenth-century kivas that present landscape imagery above pottery-band designs. Mural 24, in a kiva at Fishmouth Canyon Ruin (Figure 12.3g), depicts the sun and moon on opposite walls above the pottery band; and Mural 27, in Kiva E at Long House, depicts zoomorphs and anthropomorphs directly above and below a pottery band executed in red pigment (noted by Cattanach [1980:67] but not shown on Figure 12.2p because they are not discernible in the source image for this drawing). Also, the mural at the Painted Kiva site (Figure 12.3h) combines a pottery band on the lower lining wall with a horizon scene on the pilasters, where the walls and roof of a kiva come together (Figure 12.4). Given that the roof of this kiva was also cribbed, the kiva presents the imagery of an upright pottery bowl and an overturned coiled basket as a microcosm of the world, as indicated by the horizon scene on the pilasters, where the pottery bowl earth and basket sky join together. The dots running along this junction may also correspond to rim ticking or stitching on pottery bowls and baskets, respectively, and lead one to wonder whether the dots on horizon scene murals more generally represent the "rim" of the world. Rina Swentzell (1990) provides ethnographic support for this notion that both the kiva and the world could be modeled as a paired bowl and basket.

The notion that the sky half of the world could be conceived of as a woven, textile-like object is also supported by thirteenth-century compositions that combine landscape and textile imagery (Figure 12.3). For example, Mural 30, inside the third story of a rectangular tower at Cliff Palace (Figure 12.3i), and Mural 29, in the second story of a rectangular tower at Spruce Tree House, both depict a textile in the upper field of a horizon scene. Archaeoastronomers have argued that the Cliff Palace room in particular was an observatory and that the textile in the "sky" portion of the horizon scene was a mnemonic for modeling lunar and solar cycles (Malville and Munson 1998; also see Newsome 2005). If so, we have an example

Figure 12.4. Decorated kiva from site 42SA9310, southeastern Utah. Photo by Scott Ortman.

of an ancient astronomer using the imagery of weaving on a wide, upright loom—a concrete, rhythmic, mathematical process—to model the back-and-forth movement of the sun and moon as they rise and set on the horizon during the year.

Upright looms were set up inside buildings, where the frame was attached to a ceiling beam above and loops were set into the floor below (Kent 1983:fig. 58). The loom thus spanned the distance between the floor and ceiling of the room, and the tension of the warp threads literally pulled the ceiling and floor toward each other. Thus, in a world conceived metaphorically as a building, the earth and sky could be connected by a loom, in which case the sun and moon, represented by the shuttle, would literally weave together the floor and roof of the world through their cyclical, back-and-forth motions with respect to the horizon. This is a clear illustration of the *constitutive principle*: a theory that accounts for observable cycles of the sun and moon using the imagery of weaving.

The notion that landscape murals often decorated spaces used for calendrical observation is supported by the fact that nine of the seventeen landscape murals painted inside rectangular rooms occur in second- and third-story structures in cliff dwellings (Table 12.6). This is despite the fact that ground-floor rooms were more common in these sites originally, and a lower proportion of upper-story rooms has been preserved in these sites than is the case for ground-floor rooms. These upper-story rooms would have received direct sunlight earliest or latest in the day, when the sun was closest to its rising or setting position on the far horizon. This suggests that an upper-story room with a landscape mural and a window, door, or

Table 12.7. Correspondences between buildings and the world.

Building	*World*
1. Made of earth, stone, plants, water	1. Consists of earth, stone, plants, water
2. Stone walls	2. Mountains on horizon
3. Vegetal ceiling	3. Sky is lightweight
4. Earthen floor	4. Soil on surface of the earth
5. People live inside	5. People live within
6. Entrance	6. Passage between worlds
7. Upright loom	7. Earth and sky are woven together
8. Movement of shuttle on loom	8. Motions of sun and moon
9. Cotton on loom	9. Clouds/water connect earth and sky
10. Cotton and plaster are white	10. The cloudy sky is white
11. Mortar and adobe are red	11. Mesa Verde loess soil is red

peephole that let in direct sunlight when the sun was low on the horizon could substitute for an actual panoramic horizon view in settings where such a view was not obtainable.

Looms were not used to weave obvious containers like baskets, but they were used to create clothing in which people could be wrapped. Thus fabrics contained people in the same way pots and baskets contained corn (recall PEOPLE ARE CORN), and therefore it seems likely that Ancestral Pueblo people of the Northern San Juan included loom weaving in a "container" category. If so, a total of eight compositions blend container (pottery, basketry, and loom weaving) and landscape imagery. These compositions make a strong case that, during the thirteenth century, Ancestral Pueblo people of the Northern San Juan imagined the world as consisting of containers in addition to imagining it as a building. These blended compositions also support the *directionality principle* because landscape, pottery, and textile imagery are all apparent on buildings, but I have never seen landscape mural imagery painted on pottery or woven into a textile. If we remember that we are talking about mental imagery and not its expression on actual objects, this pattern suggests that conceptual projection was from smaller, more concrete objects to larger, more abstract phenomena.

Finally, the *experiential principle* is supported by two patterns. First, landscapes and buildings share numerous formal and perceptual properties (Table 12.7), and these correspondences provide an experiential motivation for conceptualizing the world as a building. Second, compositions that blend container and landscape imagery follow the advent of landscape murals in the Northern San Juan. Table 12.8 arranges specific expressions of the conceptual metaphors I have proposed for this region according to the date of their first appearance in the archaeological record. The table shows that expressions of pottery bowls and coiled baskets mapped onto the kiva occurred as early as A.D. 1020, but expressions of containers mapped onto the world did not occur in mural painting prior to A.D. 1225. Weaving and building interiors had been associated experientially since the introduction of the upright

Table 12.8. Historical development of metaphorical expressions in the Northern San Juan.

	Time Period (years A.D.)						
Expression	*980–1020*	*1020–1060*	*1060–1100*	*1100–1140*	*1140–1180*	*1180–1225*	*1225–1280*
Coiled and plaited basketry mapped onto pottery	■	■	■	■	■	■	■
Pottery bowl and coiled basketry mapped onto kiva		■	■	■	■	■	■
Non-loom weaving mapped onto pottery		■	■	■	■	■	■
Loom weaving mapped onto pottery			■	■	■	■	■
Seed jar mapped onto granary				■	■	■	■
Buildings mapped onto world					■	■	■
Pottery, basketry, and loom weaving mapped onto world						■	■

loom around A.D. 1100, but the use of loom weaving, basketry, and pottery in landscape metaphors does not appear to have taken place until after buildings began to be mapped onto the world, as indicated by the appearance of horizon scene murals around A.D. 1180. Once this conceptual innovation had occurred, the association of the upright loom with building interiors and prior conceptualizations of buildings as containers appear to have promoted a variety of new metaphors that conceptualized the world using container imagery. Thus the evolution of architectural metaphors in the Northern San Juan was grounded in the history of both conceptual and technological innovation and the concrete experiences of people in this society.

SOURCES IN CHACO?

Alternative forms of wall decoration do occur in the Northern San Juan, and additional metaphors I have not considered were likely also expressed through wall decoration in this region. In addition, I stress that I have not conducted an exhaustive study of mural decoration beyond the Northern San Juan, and thus I cannot at this point trace the history of any of the metaphors discussed here across the Greater Southwest. Nevertheless, it is clear from this analysis of the most common forms of wall decoration in the Northern San Juan that architectural metaphors known to these people included BUILDINGS ARE CONTAINERS, THE WORLD IS A BUILDING, and THE WORLD CONSISTS OF CONTAINERS. Knowing this, the final question I address in this chapter is whether any of these concepts could have originated in Chaco Canyon and diffused to the Northern San Juan along with other, better-documented aspects of Chacoan influence.

The Chaco Phenomenon is the label archaeologists give to the most extensive and complex sociopolitical entity of Ancestral Pueblo history. It was centered in Chaco Canyon, a valley in the desolate San Juan Basin of northwestern New

Mexico (Lekson 2006; Mills 2002). The hallmark of the Chaco Phenomenon was great-house architecture, formalized in massive public works projects at great houses like Pueblo Bonito in the tenth century A.D. (Lekson, Windes, and McKenna 2006; Windes and Ford 1992). Some characteristics of great-house architecture in Chaco Canyon include monumental scale; multiple stories; core and veneer walls; suites of large, interconnected rooms; aboveground kivas; and construction in large, preplanned stages (Lekson 1986).

By the middle of the A.D. 1000s, smaller versions of great houses began to appear in communities far removed from Chaco Canyon itself, including the Northern San Juan (Lipe 2006; Van Dyke 1999; Varien et al. in press). The central question raised by these outlying great houses is what sort of Chacoan influence they represent. To this end, a variety of models have been proposed to explain the widespread distribution of great-house architecture (see recent summaries by Kantner and Kintigh 2006; Mahoney and Kantner 2000; Mills 2002; and Van Dyke 1999). In the final section of this chapter, I consider, first, whether any of the architectural metaphors I have reconstructed could have originated in Chaco Canyon and, second, whether any of these metaphors were actually expressed in outlier great houses of the Northern San Juan. I argue that the answers to these questions shed significant light on the nature of Chacoan influence in the region.

Joan Mathien (2003) recently summarized wall decoration in Chaco Canyon itself and found that the most common decorations in the canyon are representations of hands, sandals, people and animals, and isolated geometric designs. Such designs appear to be much more common in Chaco Canyon than they are in the Northern San Juan. In addition, pottery-band murals are completely absent in documented Chaco Basin wall decoration. A composition from the interior of Room 106 at Chetro Ketl is the only example vaguely reminiscent of such murals (Lekson 1983; Brody 1991:plate 11), but it does not appear to present the room it adorns as a pottery vessel because it only occurs on one wall instead of running around the interior of the room. Patricia Crown and W. H. Wills (2003) suggest a possible symbolic connection between pottery cylinder jars and kivas based on evidence of periodic repainting and refiring of jars and periodic rebuilding of kivas. But even if both types of object were renewed cyclically, it would not indicate that kivas were conceptualized as cylinder jars. At best, it would indicate that both were considered ritual objects that had cyclical "lives." Thus there is no evidence that buildings were conceptualized as pottery vessels in Chaco Canyon.

In addition, it appears the most common method of kiva roof construction did not express basket imagery. In great-house kivas, the evidence suggests that roofs were normally flat, with two vigas spanning the maximum chamber diameter and framing the roof hatch (Lekson 1986:32–34). Partially preserved wainscoting or bench backing has been found rising from the bench surface in several great-house kivas, but this wattle framework appears to have been covered with daub rather than being left exposed (Lekson 1986:54–59). Victor Mindeleff (1989:126–127) describes such a plaster-covered wattle framework in a historic Hopi kiva. It is intriguing

that painted, plastered baskets have been recovered from Chaco great houses (Judd 1954:321), but this does not support the notion that the kiva roof or the sky were conceptualized as woven objects in Chaco great-house kivas.

The roofs of most small-house kivas in Chaco Canyon also appear to have been flat. Small-house kivas most often had four pilasters, two opposite each other just north of the maximum diameter of the structure and two placed on either side of and immediately adjacent to the southern recess or ventilator opening (Truell 1986:181–183). It appears that the primary viga rested on the widely spaced pilasters, thus spanning the maximum east-west diameter of the structure and providing a brace on which the ladder could rest. A second viga rested on the pilasters framing the southern recess and provided support for secondary beams resting on the southern wall of the recess or on the primary viga in the center of the structure. So even though cribbed roofs were constructed in some Chaco great-house kivas (Lekson 1986:32) and small-house kivas (Truell 1986:182), it appears safe to conclude that Chacoan builders did not normally conceptualize kiva roofs as coiled baskets, as people in the Northern San Juan appear to have done.

Although no evidence suggests that BUILDINGS ARE CONTAINERS originated in Chaco Canyon, it is possible that THE WORLD IS A BUILDING originated there. Mathien (2003) found that bichromes like those of the Northern San Juan were painted on the interior walls of kivas and great-house rooms in Chaco Canyon. In fact, horizon scenes, such as the example from LA 17360 (Doyel, Simmons, and McAnany 1989; Brody 1991:figure 49), appear to occur earlier in the basin surrounding Chaco Canyon than they do in the Northern San Juan. Thus conceptualization of the world as a building could have originated in the Chaco Basin and diffused to the Northern San Juan. However, the earliest landscape murals in the Northern San Juan date to the late 1100s, by which time Chaco Canyon no longer functioned as a regional center. This suggests that even if THE WORLD IS A BUILDING spread to the Northern San Juan from the Chaco Basin, this diffusion would have taken place during the post-Chaco period, not during the heyday of Chaco Canyon and the regional system.

Finally, I know of only one mural from the Chaco Basin, broadly defined, that blends landscape and container imagery. This mural occurs in a kiva dating to the late occupation of Salmon Ruin and consists of a horizon scene with a series of terraces running just above the boundary between the red earth and white sky in one section (Smith 1982:figure 5). Although Salmon was built during the heyday of the Chaco Phenomenon and is a prototypical example of an outlying Chaco great house, the late occupation at this site occurred almost a century after the collapse of the Chaco Phenomenon and appears to have involved extensive remodeling by people not closely affiliated with Chacoan culture (McKenna and Toll 1992). Thus no good evidence suggests that THE WORLD CONSISTS OF CONTAINERS was invented in the Chaco Basin either.

Although I am not aware of a single Chaco Basin kiva that was decorated as a pottery bowl, such compositions occur in three of the four decorated kivas in outlier great houses in my Northern San Juan database, including a kiva at Haynie

Ruin, several kivas at Lowry Ruin, and a kiva at the Hedley Site Complex. Lowry Ruin continued to be used in the post-Chaco period, but one of the kivas decorated with a pottery-band mural at this site was intentionally filled and a new one built on top of it around A.D. 1120 (Ahlstrom, Breternitz, and Warren 1985:table 1; Martin 1936). Thus pottery-band murals must have been painted at this site during the Chaco period. The pottery-band mural from the Hedley Site Complex (Ortman et al. 2000:135–141) occurs on the original walls of an aboveground kiva adjacent to the Main Ruin Great House (field notes on file, Crow Canyon Archaeological Center). Although this structure was rebuilt during the 1200s, the original kiva was probably contemporaneous with the early occupation of Lowry Ruin because of the shared presence of rare architectural attributes such as interpilaster shelves (Martin, Roys, and von Bonin 1936:42). Finally, the landscape mural on a kiva in the Bluff Great House has been dated to the post-Chaco period, based on associated pottery and radiocarbon dates (Cameron and Lekson 2000; Cameron 2002).

The evidence reviewed in this final section suggests that, at a minimum, BUILDINGS ARE CONTAINERS was not expressed in Chaco Canyon. It also seems highly unlikely that this metaphor could have originated in Chaco because kivas in the Northern San Juan were decorated with pottery-band murals before, during, and after the Chaco period, whereas such murals do not occur at all in Chaco Canyon architecture. Further, the fact that a local metaphor was expressed inside Northern San Juan great houses in use at the height of the Chaco Phenomenon argues that Chacoan influence did not extend to this specific cultural concept. Thus architectural metaphors lend support to emulation models of the Chaco Phenomenon in the Northern San Juan and suggest that the builders of most great houses in the region were influenced by Chaco Canyon but were not forced to abandon previous architectural metaphors.

I hope this study illustrates the benefits metaphor analysis can bring to the archaeological study of cultural cognition, the spread of material culture traits, and the problem of Chacoan influence in particular. In the specific situation discussed here, it is undeniable that architectural details of Chacoan great houses spread to outlying communities ringing the San Juan Basin. However, cultural practices can spread for a variety of reasons: because people with the practice migrate to a new area, because the practices are perceived as prestigious through association with their inventors, because they produce better-engineered tools and buildings, or because worldview concepts expressed by the practice are also spread. Methods appropriate for investigating the first three of these processes are well established, but we have lacked appropriate methods for investigating the invention and diffusion of concepts, which often lie beneath the surface of practices, using archaeological data. I believe metaphor analysis can help us fill this gap and determine whether concepts diffused along with behavioral practices in a given case. It seems to me this is a critical step in evaluating the nature of the Chaco Phenomenon and in learning more about the cultural dimensions of Pueblo prehistory in general.

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