CLIFF POLYCHROME

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ABSTRACT

Gila Polychrome is the key type used to identify deposits and to date events and processes associated with the late Classic Period in southern Arizona, southwestern New Mexico, and adjacent areas. However, because Gila Polychrome was a long-lived type, made circa A.D. 1300-1450, it has proven very difficult to track change through time during the late Classic Period. Previous researchers have identified temporally sensitive characteristics of form and design among Gila Polychrome bowls. The results of more recent research, including Patricia Crown's (1994) analysis of hundreds of Gila Polychrome whole vessels, and the test excavation of Classic Period sites in the San Pedro Valley of southeastern Arizona, confirm that a late form or "subtype" of Gila Polychrome can be discerned. This late type or subtype has been given the name Cliff Polychrome (Harlow 1968). The available evidence suggests Cliff Polychrome was first produced during the period A.D. 1350-1375. Recognizing Cliff Polychrome as a separate typological entity provides archaeologists additional means of subdividing the late Classic Period.

INTRODUCTION

One of the best dating guides we have in southern Arizona is the polychrome pottery of the Salado division of the Anasazi. This is so because the particular types involved, Gila and Tonto Polychromes, have been dated accurately by tree-rings to the 14th century (Haury 1950:351; with references).

> Too often our attempts at cross-dating, correlating, and synthesizing have been frustrated by the fact that the pottery type available for these uses was one whose life extended over so long a period that conclusions from it could only be general ....A classic example is the long-lived, widely distributed Gila Polychrome....The value of this type--in cross-dating alone--makes it a *must* for us to seek out, separate and establish new [type or subtype] determinants with temporal and areal significance (Hargrave 1974:85-86; italics in original).

As the quotes above suggest, the ability to divide Gila Polychrome into subtypes, or to recognize certain expressions of the established type as a new type, would have profound

implications for the construction of archaeological chronologies and culture histories in the Greater Southwest. In 1968, in an unpublished manuscript describing the ceramic assemblage recovered from Ormand Village (LA5793), in the Cliff Valley of New Mexico, Francis H. Harlow used the name Cliff Polychrome in reference to what he believed to be a late form of Gila Polychrome. A study of Roosevelt Red Ware bowl forms and the results of recent research by the Center for Desert Archaeology (CDA) in the San Pedro River Valley of southeastern Arizona suggest that Cliff Polychrome is indeed a viable type designation in that vessels matching the type description (provided below) were most likely produced for the first time during the period A.D. 1350-1375. In this article I present a brief review of Roosevelt Red Ware typology, a revised type description of Cliff Polychrome, a discussion of evidence supporting the conclusion that Cliff Polychrome is a late expression of Roosevelt Red Ware, an example of the utility of this type for refining archaeological chronologies, and a consideration of the larger implications of recognizing this type.

ROOSEVELT RED WARE TYPOLOGY AND DATING

Roosevelt Red Ware, as originally defined (Colton and Hargrave 1937:86-91), refers to a group of stylistically and technologically related types that includes Pinto Polychrome, Gila Polychrome, and Tonto Polychrome. However, later conceptions of this ware (Colton 1955b:8, 1965:12-13) included types whose relationships to the initial three remain unclear. Some researchers (e.g., Crown 1994; also see Lindauer 1998; Young 1967, 1982) have chosen to use the term "Salado polychromes," in order to avoid a reference to the Roosevelt Lake area, previously thought of as the center of Roosevelt Red Ware production. This is sound reasoning, as numerous sourcing studies (e.g., Crown and Bishop 1991, 1994; Danson and Wallace 1956;

Duff 1999, 2002; Lightfoot and Jewett 1984; Lyons 2001, 2003a; Martin and Rinaldo 1960:186-195; Zedeño 1994) strongly suggest that these types were produced in nearly every river valley in the Greater Southwest, south of the Hopi Mesas.

The term "Salado," however, has its own baggage, initially referring to an archaeological culture that allegedly developed in the Salt River drainage (Gladwin and Gladwin 1930:3) and, from there, supposedly spread over much of the Southwest. Given the problems associated with both terms, I have chosen to follow historical precedent. In this article, however, Roosevelt Red Ware includes the three polychrome types discussed above, as well as the "salmon varieties" of Pinto and Gila Polychrome, and the bichrome types Pinto Black-on-red and Gila Black-on-red.

Pinto Polychrome, Gila Polychrome, and Tonto Polychrome, now known as separate types, were first described by Kidder (1962[1924]), Schmidt (1928), and Hawley (1928) as a single type, variously known as Lower Gila Polychrome, Central Gila Polychrome, or Middle Gila Polychrome. Although Hawley separated the type into "Early," "Transitional," and "Late" varieties, Gladwin and Gladwin (1930:4-9) first split the stylistic continuum into the basic triad used today.

The main differences between Hawley's approach and that of the Gladwins was the former's lumping of what the Gladwins called Tonto Polychrome with what the Gladwins named Gila Polychrome (within Late Middle Gila Polychrome), and her use of "Transitional Middle Gila Polychrome," a category akin to the rubric, Pinto-Gila Polychrome (Young 1967:43-44; see below). Otherwise, based on the vessels illustrated by Hawley, it seems she recognized the same stylistic trends that the Gladwins parsed as Pinto Polychrome and Gila Polychrome. These changes include the addition of a banding line (or "life-line"; Figure 1; also see Chapman and Ellis 1951; Hays-Gilpin et al. 1996:Figure 4.3; Lyons 2003a:52, Figure 3.4) and the line-break

(Chapman and Ellis 1951), a shift from opposed hatched and solid motifs to the predominance of bold solids, increasing elaboration of motifs, and the phasing out of banded, meridional, threefold rotational, and fourfold rotational layouts in favor of bifold rotational arrangements (Crown 1994). A number of authors have used the term Pinto-Gila Polychrome (Young 1967:43-44) or "proto-Gila Polychrome" (Reid and Whittlesey 1992) to refer to vessels and sherds that display a mixture of traits characteristic of Pinto Polychrome and Gila Polychrome, e.g., bowls that exhibit bold designs dominated by large, solid, elaborated motifs yet lack a subrim banding line; bowls with banding lines that exhibit layouts composed of balanced solid and finely hatched motifs.

Pinto and Gila Polychrome bowls exhibit red-slipped exteriors and white-slipped interiors with black painted designs. Gila Polychrome jar exteriors display wide horizontal bands of white slip with black painted decoration. Usually one wide band covers the majority of the vessel and a narrower band encircles the neck. When multiple black-on-white bands are present, they are most often separated by horizontal stripes of red slip. The bases of Gila Polychrome jars are slipped red as well. Tonto Polychrome vessels, which are predominately jars, are characterized by narrow ribbons and/or panels of black-on-white decoration surrounded by red slip (cf. Young 1967:10-12; 1982:52; also see Lindsay and Jennings 1968:7, 13). When the red-slipped exteriors of late Roosevelt Red Ware bowls exhibit painted decoration, such elaboration most commonly takes one of two forms: the pattern characteristic of Gila Polychrome jars or that associated with Tonto Polychrome jars.

Many Roosevelt Red Ware jars display body layouts typical of Tonto Polychrome and banded neck designs characteristic of Gila Polychrome. Such vessels are typed as Tonto Polychrome. Some late Roosevelt Red Ware bowls exhibit typical Gila polychrome interior

designs and exterior designs characteristic of Tonto Polychrome. Researchers type such specimens as Tonto Polychrome or refer to them as "Gila interior/Tonto exterior" (also the reverse: "Tonto interior/Gila exterior"; Crown 1983:252). A small number of bowls and jars from late sites in the Phoenix Basin display Gila Polychrome designs embellished with narrow, red painted lines (i.e., the red paint is applied to the white-slipped areas alongside black painted lines; Crown 1981:147; Abbott and Gregory 1988:25). This manifestation of Roosevelt Red Ware has been referred to as "Gila Polychrome, Trichrome Variety" by Motsinger (1995:176). Because "standard" Gila Polychrome itself is a trichrome type, and because the infrequent use of red paint alongside black paint was first noted by Haury (1945:65-66, Plates10c, 11a) at Los Muertos, I propose this type be referred to as Los Muertos Polychrome. This potentially useful type or subtype is the subject of ongoing research.

Montgomery and Reid (1990) convincingly argue that Pinto Polychrome first appeared circa A.D. 1280-1290, based on tree-ring dates and contextual evidence at Chodistaas. Dean and Ravesloot (1993; also see Thompson 1963) address the question of Gila Polychrome's temporal placement from the perspective of tree-ring dates and associated cross-dated ceramics, concluding that initial production must have post-dated A.D. 1300 (cf. Di Peso et al. 1974[4]:29; LeBlanc 1980; Lekson 1984; Nelson and LeBlanc 1986). Dean and Ravesloot's (1993) dating, however, like all associations between dendrochronological data and pottery types, might be different depending upon one's definition of Gila Polychrome. In other words, the dating (and the definition) of Gila Polychrome is complicated by the existence of transitional vessels assigned to the Pinto-Gila Polychrome category discussed above.

The best available evidence suggests Tonto Polychrome was introduced after Gila Polychrome, circa A.D. 1340-1350. Although some have suggested that these types appeared at

the same time (e.g., Steen 1962). Consensus, based on very little evidence, has settled on A.D. 1330 as the latest date associated with Pinto Polychrome, and A.D. 1450 as the latest date associated with Gila Polychrome and Tonto Polychrome (e.g., Crown 1994:19-20; Mills and Herr 1999:283-284, Table 8.4). The long span of time represented by the period of Gila Polychrome production (circa A.D. 1300-1450) limits the ability of researchers to establish temporal sequences among sites where this most frequently recovered Roosevelt Red Ware type occurs.

As noted by Hargrave (1974:85), "if...objective study of [a long-lived type, such as Gila Polychrome]...can reveal consistent...[patterns]..., we can, by describing and naming a 'new' type, divide the life span of the 'old' type into two or more shorter time periods, or possibly limit them to restricted areas." Based on the results of recent research in the San Pedro Valley (Clark et al. 2003; Lyons et al. 2003), I advocate resurrecting the taxon "Cliff Polychrome" (Harlow 1968; Wilson 1998a) and using this term to refer to recurved, semi-flaring incurved, and semi-flaring hemispherical Gila Polychrome bowls that display dual interior design fields (Figure 2; see "Type Description for Cliff Polychrome," below). This proposed typological category also encompasses similarly shaped and decorated bowls that other researchers have typed as Tonto Polychrome, "Gila interior/Tonto exterior," and "Tonto interior/Gila exterior." Evidence presented below suggests Roosevelt Red Ware bowls exhibiting these forms and this distinctive use of decorative space were introduced after A.D. 1350 and that they were produced more frequently through time.

PREVIOUS CONSIDERATIONS OF VARIABILITY IN THE FORMS AND DECORATIVE LAYOUTS EXHIBITED BY ROOSEVELT RED WARE BOWLS

Kidder (1962:306, Figure 26c) was among the earliest to call attention to a class of Roosevelt Red Ware bowls exhibiting a characteristic "outcurving lip," however, it was Winifred and Harold Gladwin (1935:219-220) who apparently provided the first hint that differences in Roosevelt Red Ware bowl forms could help to date sites and deposits:

> A late and specialized phase developed in a series of ruins along Tonto Creek to the north and west of the present Roosevelt Lake. It is marked by an abundance of Jeddito Black-on-yellow and the appearance of Tonto Polychrome, a ware in which three colours of paint - red, black, and white - were applied to small jars and to the interiors and exteriors of small bowls.
>
> This Tonto phase was probably contemporaneous with the late stages of the Middle Gila Phase at Casa Grande, Bylas, and Gila Pueblo, where much the same treatment was used in decorating large vessels, great bowls with re-curved rims, and large jars.

This observation calls to mind Hargrave's (1974:82) admonition to consider vessel form in pottery type definitions:

> It is probable...that the definition of a pottery type should be revised to include form. Haury (1937:170) has implied such a change in his study of Hohokam pottery from Snaketown...

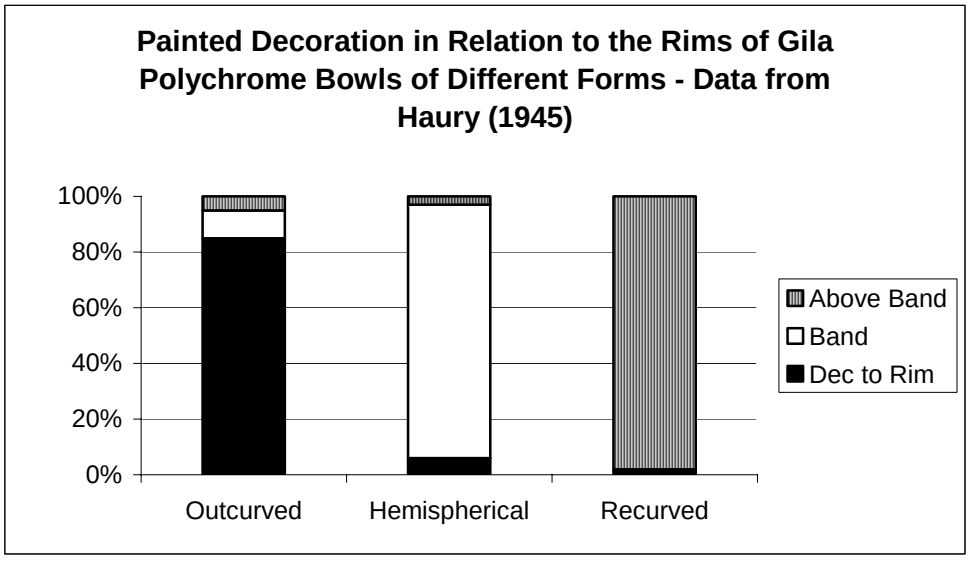
Emil Haury (1945:71) discussed the relationship between vessel form and decoration, specifically in regard to Gila Polychrome, noting a "direct correlation" between bowl shape and...[interior] decoration" (Table 1, Figure 3). In the Los Muertos assemblage, Haury found that outcurved bowls predominately display painted designs that carried to the rim of the vessel, uninterrupted; that hemispherical bowls most often exhibit a banding line near the rim, a narrow unpainted zone below this, and then the framing line of a circular design field and the design field itself (Figure 4); and that recurved bowls are almost always characterized by two design fields, a zone of banded decoration at the rim and a main, circular design field covering the

majority of the vessel. The dual design fields exhibited by recurved bowls are separated by a banding line (Figure 2).

Table 1. Correlation between Gila Polychrome bowl forms and decorative arrangements at Los Muertos (Haury 1945:72).

Bowl Shape	% with Design Extending to Rim	% with Banding Line at Rim	% with Dual Design Fields	N
Outcurved	85.00	10.00	5.00	20
Hemispherical	5.77	91.35	2.88	104
Recurved	1.56	0.00	98.44	64

Figure 3. Histogram based on data in Table 1 (Haury 1945:72).



The results of Crown's (1994:55, Table 5.1) analysis of a larger sample (518 bowls from throughout the Greater Southwest) corroborate those of Haury (Table 2, Figure 5). However, Crown's (1994:Figure 5.1) vessel form categories differ from Haury's in that she does not distinguish between hemispherical bowls and outcurved bowls and she recognizes a straight-walled form apparently not recovered at Los Muertos or not treated as a separate shape in Haury's analysis. Furthermore, Haury did not provide data on incurved bowls and although Haury's data pertain solely to Gila Polychrome, all Roosevelt Red Ware types are represented in Crown's data.

Table 2. Correlation between Roosevelt Red Ware bowl forms and decorative arrangements (Crown 1994:Table 5.1). Crown's outcurved bowl category appears to be a combination of Haury's (1945) hemispherical bowl and outcurved bowl categories.

Bowl Shape	% with Design Extending to Rim	% with Banding Line at Rim	% with Dual Design Fields	N
Outcurved*	50.00	42.00	8.00	74
Straight-walled	24.00	76.00	1.00	136
Incurved	15.00	84.00	1.00	191
Recurved	14.00	14.00	72.00	87

Through time, the distance between the top of the rim (the "lip") and the top of the banding line increases dramatically on bowls of ancestral Hopi wares (types in Jeddito Yellow Ware, Jeddito Orange Ware, and Winslow Orange Ware). E. Charles Adams (2002:83-86) first noted this pattern in the late 1970s after having studied whole vessels of these types curated at the Smithsonian Institution, the Peabody Museum at Harvard University, and other institutions. Since the 1990s, under Adams' direction, a number of researchers associated with the Homol'ovi Research Program have studied this phenomenon (Hays 1990; Hays-Gilpin et al. 1996; LaMotta 2002; Levin 1991; Levstik 1999; Lyons et al. 2001; Steffen 1992). Adams and others have used differences in banding line location (relative to the lips of bowls) to seriate deposits within the Homol'ovi villages (Adams 2002:83-86; LaMotta 2002). Since the 1930s, archaeologists have noted strong links between Roosevelt Red Ware and ancestral Hopi pottery types (e.g., Brown 1973, 1974; Carlson 1970:91-94, 105-109; Gladwin and Gladwin 1935:217-219; Haury 1945: 72-75, 76-80), and the lowering of the banding line through time is another marker of the close relationship between these traditions (see Lyons 2003a). Although there are few data yet available to evaluate this trend, researchers working with ancestral Hopi types have also noted an increase through time in bowls exhibiting what have been termed "S-shaped" rim profiles (Hays-Gilpin et al. 1996:65-66). Bowls of this form are similar in shape to vessels classified as recurved bowls. However, based on my own experience with whole vessel collections housed at a number

of institutions, very few specimens of ancestral Hopi types exhibit the band of decoration that appears above the banding line of most recurved Roosevelt Red Ware bowls.

Some authors have noted the predominance of recurved Roosevelt Red Ware bowls in different assemblages and have offered hypotheses regarding its significance. For example, according to Wilson (1998a:206):

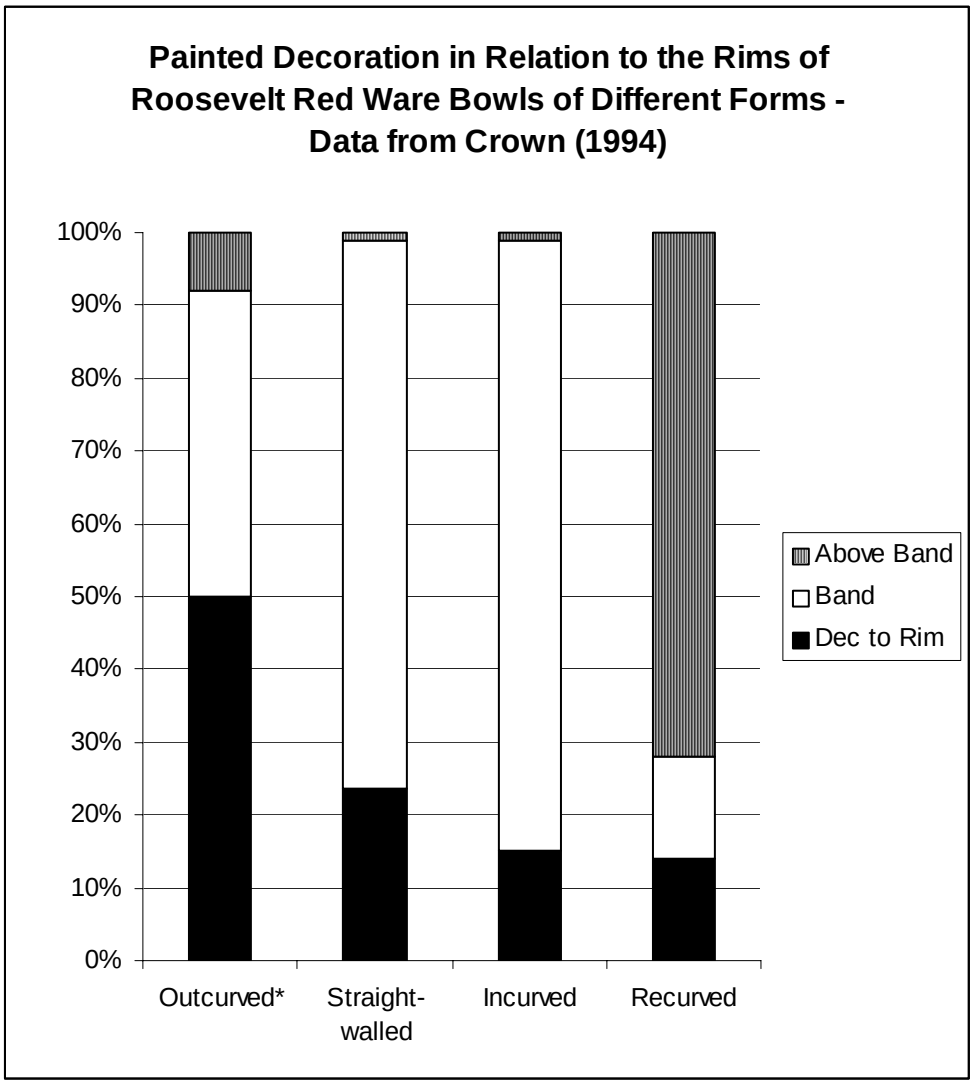
> Vessel forms associated with Gila Polychrome from the Ormand site appear to be consistent...Harlow (1968) used the consistent presence of flared bowl rims to create the type Cliff Polychrome...Given the common occurrence of this flaring form in other Gila Polychrome, sherds from other areas, it seems that the contrast between earlier Gila Polychrome versus later Cliff Polychrome (Harlow 1968) parallels the contrast between Pinto Polychrome and Gila Polychrome described by others (Crown 1994; Lindsay and Jennings 1968; Wood 1987; Young 1967).

Lekson (2000:278, 283-284) has addressed this phenomenon, observing that:

> Intriguingly, most of the Gila Polychrome bowls from the Chihuahuan Desert are commonly of an uncommon form: most have flared rims (I include Crown's 1994:Figure 4.3, "recurved"; and Di Peso et al.'s 1974[6]:Figure 4.6, "everted rim" as "flared rim" forms). Gila Polychrome at Casas Grandes and the Cliff Valley Ormand site are almost entirely flare-rimmed (Di Peso et al. 1974[8]:152; Harlow 1968 "Cliff Polychrome"). Escondida Polychrome was a "copy" of Gila Polychrome made in the Casas Grandes area; about 70 percent of the Escondida Polychrome bowls at Casas Grandes had this rim form (Di Peso et al. 1974[6]:228). Everted, flared, or recurved forms are far less common in Gila Polychrome from all other regions...(Lekson 2000:278).
>
> ...half of the Gila Polychrome at Casas Grandes came from a single room, Room 18-8, in the form of 49 bowls (plus one Tonto Polychrome bowl and one *Springerville Polychrome* bowl), all extraordinarily similar in shape and size (Lekson 2000:283-284; *italics added*; see "The Dating of Cliff Polychrome," below).

The high frequency of recurved Roosevelt Red Ware bowls at some sites is intriguing, and the strong association between the Gila Polychrome recurved bowl form and dual design fields (one below the banding line and one above) represents an obvious pattern to recognize as a separate type or subtype. Evidence presented in the next section points to the conclusion that the

Figure 5. Histogram based on data in Table 2 (Crown 1994:Table 5.1).



recurved bowl/dual design field combination was introduced after A.D. 1350 and that, through time, potters increasingly opted to make Roosevelt Red Ware bowls exhibiting this shape and decorative arrangement.

DATING CLIFF POLYCHROME

Four major lines of evidence suggest Cliff Polychrome is one of the latest expressions of Roosevelt Red Ware: (1) a seriation of bowl forms by type, as recorded by Patricia Crown (1994:Figure 4.4, Table 4.5); (2) the dates associated with sites where recurved forms are

frequent among Roosevelt Red Ware bowls; (3) the lack or small quantity of recurved bowls at some sites that have yielded Gila Polychrome; and (4) the geographical distribution of recurved Roosevelt Red Ware bowls. Each is discussed below.

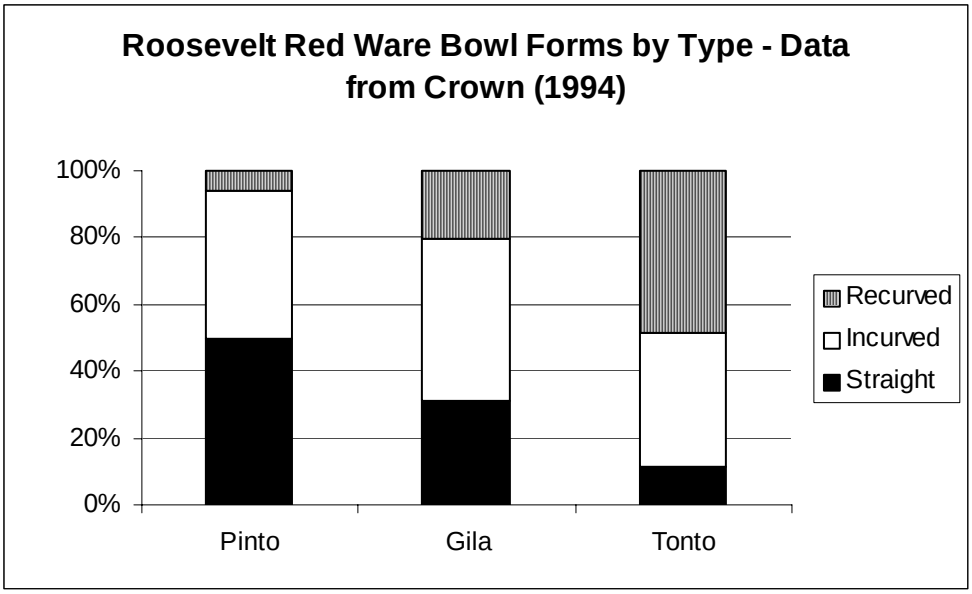
Form Seriation

Crown's (1994) analysis of 779 whole vessels recovered from 72 sites examines stylistic trends in Roosevelt Red Ware. With typology as the only practical way to add a temporal component to her analysis of Roosevelt Red Ware forms, Crown charts the shapes present in her sample of Pinto, Gila, and Tonto Polychrome vessels, revealing a number of strong patterns. Among these is an increase in the percentage of recurved bowls through time. Because Crown (1994:Figure 4.4, Table 4.5) reports her data in such a way that percentages are calculated based on all forms (as opposed to separating bowl and jars), the magnitude of the increase in recurved bowls - relative to other bowl forms - is difficult to appreciate. In Table 3 and Figure 6, I present Crown's data for bowls only. With this transformation, it is possible to see the true significance of this temporal pattern. Recurved bowls increase nearly tenfold in Crown's sample, representing, by far, the most significant shift (upward or downward) in Roosevelt Red Ware bowl form documented.

Table 3. Crown's (1994:Table 4.5) Roosevelt Red Ware form data by type (bowls only).

% Bowl Form	Pinto Polychrome	Gila Polychrome	Tonto Polychrome
Straight	34	26	9
Outcurved	30	11	18
Incurved	30	40	32
Oval	2	6	2
Recurved	4	17	39
N	50	448	44

Figure 6. Histogram based on data in Table 3 (Crown 1994:Table 4.5).



Associated Dates

Roosevelt Red Ware was the dominant ware and Gila Polychrome was the dominant type during the period A.D. 1300-1450 in many areas south of the Mogollon Rim. Unfortunately, very few tree-ring dates are available for sites in these places and local chronologies are based on ceramic cross-dating, archaeomagnetic dating, and radiocarbon dates. The few sites that have yielded relevant dendrochronological data confirm the production of recurved Roosevelt Red Ware bowls during the late A.D. 1300s (most likely after 1350) and evidence from some sites suggests this form became frequent by the A.D. 1380s.

Casas Grandes

The paradox of Cliff Polychrome chronology is that Casas Grandes, the site that caused so much controversy in the dating of Gila Polychrome, is one of the keys to dating the latest expression of Roosevelt Red Ware (Di Peso 1974; cf. Dean and Ravesloot 1993; LeBlanc 1980; Lekson 1984; Nelson and LeBlanc 1986). As noted above, Gila Polychrome from Casas Grandes

is dominated by recurved bowls, including the 49 vessels found together in room 18-8. Regarding the dating of these objects:

> Stratigraphy indicates that these vessels were deposited in the fill of a room that had been vacated for a considerable time. A large quantity of bat guano on the floor...reveals that the room had stood open for some time after being abandoned. Subsequently, nearly a meter of trash fill accumulated before the bowls were placed in this room or on the floor of the second-story chamber, Room 18b...In either case, the intentional placement of these vessels must postdate the last roofing of the room by a considerable interval. The date of 1328-1382 from Viga 1 firmly places these bowls well into the fourteenth century (Dean and Ravesloot 1993:92; with references).

In the quote above, Dean and Ravesloot refer to estimated felling dates derived through application of the Robinson-Ahlstrom (1980) regression equation which, based on the number of heartwood rings in a sample, estimates the number of sapwood rings that were present (also see Nash 1997). Use of this tool at Casas Grandes was necessitated by severe sapwood loss which created "significant gaps...between the derived (noncutting) dates and the actual dates of tree felling" (Dean and Ravesloot 1993:92). According to Dean and Ravesloot (1993:92-93), their application of the regression equation produced "conservative estimates of the true cutting dates." They add that, "due to a number of factors, the actual dates of tree felling are likely to be later than the estimates," and that "any adjustment of the estimated dates should be upward" (Dean and Ravesloot 1993:93).

At Casas Grandes (in Room 18-8), Gila Polychrome and Tonto Polychrome whole vessels were found in association with a specimen typed by Rinaldo (Di Peso et al. 1974[8]:147) as "Springerville Polychrome." Because Springerville Polychrome was made circa A.D. 1250-1300, this find might be viewed as evidence supporting Di Peso et al.'s (1974[4]:29) suggestion that Gila Polychrome production began earlier at Casas Grandes than in other regions. However, the written description, the photograph (though obscure), and Alexander Lindsay's published comments on this vessel suggest it is a late expression of the Maverick Mountain Series (Colton

1955:8, 1965:11-12; Lindsay 1987, 1992; Morris 1957), likely made between A.D. 1300 and 1400. The type description of Springerville Polychrome is provided below, along with Di Peso's verbal sketch of the specimens found at Casas Grandes and Lindsay's comments on these objects.

> According to Carlson (1970:41, 47):
>
> > Springerville Polychrome is differentiated from typical St. Johns Polychrome [see below] by the occurrence of black lines or bars in addition to white decoration on the exteriors of otherwise typical St. Johns Polychrome bowls (Carlson 1970:47).
> >
> > St. Johns Polychrome vessels are slipped red or orange on the interior and exterior of bowls...[interior] decoration goes to the rim...the black paint is usually a dull brown or black, but is occasionally a poor glaze...Exterior decoration on bowls is executed in chalky white paint...White may also be used on bowl interiors to outline black motifs...(Carlson 1970:41)

Di Peso et al.'s description of the Casas Grandes specimen suggests some similarities to Springerville Polychrome and St. Johns Polychrome and also some important differences from these types:

> Slipped dark red, parts of interior surface making up design and base of bowl unslipped reddish brown...Bowl interior design of interlocking barbed figures; large solid red figures outlined in black...and white lines; reddish brown balanced with dark red...Simple restricted bowl with everted rim (Di Peso et al. 1974[8]:147, Fig. 151-8).

According to Di Peso et al.:

> Lindsay (Personal communication, September 24, 1965) identified a very few [sherds] without exterior decoration as Nantack Poly[chrome]. However, most of the sherds had the typical St. Johns Poly[chrome] style of exterior decoration. Sherds lacking this type of design were also tentatively designated Tusayan Poly[chrome] in the field. This relationship between Nantack Poly[chrome] and Tusayan Poly[chrome], which extended to Maverick Mountain Poly[chrome], Kiet Siel Poly[chrome], and Tucson Poly[chrome], was noted by the Fourth Southwestern Ceramic Seminar (Di Peso et al. 1974[8]:147).

Maverick Mountain Series types are frequently recovered in southeastern Arizona and west-central New Mexico from sites with high percentages of Roosevelt Red Ware (Lyons 2003a; Wilson 1998a:206-207) and Tucson Polychrome and Maverick Mountain Polychrome were found at Casas Grandes (Di Peso et al. 1974[8]:151, 154; also see Lindsay 1992). These facts support the inference that the specimen associated with the 49 Cliff Polychrome bowls at Casas

Grandes was a fourteenth-century type (Nantack Polychrome) as opposed to a thirteenth-century type (Springerville Polychrome). It is important to note that the vessel in question exhibits the shape characteristic of Cliff Polychrome.

The Cliff Valley, New Mexico

Another piece of evidence supporting a late fourteenth-century date for the Casas Grandes specimens is their association with Redrock Valley ricolite (Lekson 2000:284). This material was quarried near the Cliff phase (A.D. 1300-1450) villages of the Upper Gila River Valley, which include Ormand Village, Dutch Ruin (LA8706; NM Y:5:1 ASM), Kwillelykia (LA4937), and Dinwiddie (LA6783; LA106003; NM S:14:1 ASM), where recurved Roosevelt Red Ware bowls are found (Lekson 2000, 2002; Mills and Mills 1972; Wilson 1998a, 1998b). More than half (54%) of the Gila Polychrome bowl fragments from Ormand Village exhibit recurved rims (Wilson 1998b:Table 18). This form is also dominant among the whole vessels from Dutch Ruin (Lekson 2000, 2002). Tree-ring dates have been obtained from two Cliff Valley sites, Kwillelykia (two dates of A.D. 1380r from Room S62; Robinson and Cameron 1991:23; Jeffrey S. Dean, personal communication, 2003) and Ormand (a single date of 1342vv from Room 31; Wallace 1998:118-123).

Cliff phase sites of the Mimbres Valley

The Disert, Janss, and Stailey sites, located in the Mimbres Valley, have been assigned to the Cliff phase, and Gila Polychrome bowls from these sites characteristically exhibit slightly flared rims (LeBlanc and Khalil 1976; Nelson and LeBlanc 1986:136, Figure 7.6f). Nelson and LeBlanc (1986:27, 105-113) argue, based on the small sizes of these sites, a general lack of

accumulated trash, and very little evidence of remodeling and superposition, that the occupations at Disert, Janss and Stailey were relatively short. Given the presence, absence, and frequency of certain pottery types, a series of somewhat problematic archaeomagnetic dates (from poorly fired thermal features; Nelson and LeBlanc 1986:106; Premo and Eighmy 1997), and a single radiocarbon date from the Stailey site, Nelson and LeBlanc (1986:105-114) suggest all three sites were established and abandoned between A.D. 1350 and 1450.

Tree-ring dates associated with Janss, obtained after Nelson and LeBlanc's report was published (Robinson and Cameron 1991:23), indicate construction in the late A.D. 1370s and the 1380s. On the basis of wall bonding and abutments, four construction phases were identified at Janss, which consists of 30 rooms (Nelson and LeBlanc 1986:Figure 3.3). Two tree-ring dates, A.D. 1373vv and 1381r, were obtained from Room 8, part of the second phase of construction, and one sample from Room 17, associated with the fourth building phase, dated to 1378 (1378B; Jeffrey S. Dean, personal communication, 2003). Recent calibration of the ^{14}C date from the 15-room Stailey site has yielded results consistent with occupation between the late A.D. 1300s and the mid-to-late 1400s (Table 4). The aforementioned archaeomagnetic dates have since been reevaluated based on a refined paleomagnetic curve, resulting in age ranges too large to address the dating of Cliff Polychrome (Nelson and LeBlanc 1986:Table 5.1; Premo and Eighmy 1997:Table 3).

Table 4. Calibrated ^{14}C date (500+/-60 radiocarbon age B.P.) from the Stailey site in the Mimbres Valley (Nelson and LeBlanc 1986:105). Calibrated using Calib 4.3 (Stuiver and Reimer 1993; Stuiver et al. 1998).

Area Enclosed	Calibrated Age Ranges (A.D.)	Area Under Probability Distribution
1 Sigma (68.3%)	1328-1344 1394-1454	0.136 0.864
2 Sigma (95.4%)	1301-1371 1379-1494 1501-1506 1601-1613	0.216 0.767 0.005 0.012

El Polvorón and Las Fosas

El Polvorón (AZ U:15:59 ASM) is the type site of the Polvorón phase. Sires (1984; also see Crown and Sires 1984) defined the Polvorón phase as the terminal, post-Classic-period interval in the Hohokam sequence, dating between A.D. 1350 and 1450. He conceptualized this period as being marked by a shift, in the Phoenix Basin and surrounding areas, from large, aggregated settlements associated with complex irrigation networks to smaller, dispersed settlements along small canal segments, and from compound architecture to pithouses (Sires 1984:324-326). In addition, he described the phase as being characterized by an increase in Roosevelt Red Ware (to the virtual exclusion of other decorated types), the introduction apparently locally produced pottery reminiscent of Tanque Verde Red-on-brown, a decrease in shell artifacts and an increase in obsidian. He also called attention to the presence of Jeddito Yellow Ware[1] types in some Polvorón phase contexts. Sires (1984; also see Crown and Sires 1984) assigned a temporal span to the Polvorón phase based on archaeomagnetic dates and ^{14}C dates from El Polvorón and other sites, including Las Colinas and Escalante Ruin.

The dating of El Polvorón itself has important implications for the dating of Cliff Polychrome, as 23% of the Roosevelt Red Ware bowls recovered from the site are recurved (Crown 1983:Table I.4.20). Sires (1984:301) reports two late Classic/post-Classic period archaeomagnetic dates from the site although only one appears in the report's appendix devoted to paleomagnetism (Murphy et al. 1984). Dean (1991:Table 3.1) reports this date as A.D. 1340-1450. The site also yielded two radiocarbon dates, one "post-bomb" and another, from architectural wood, that post-dates A.D. 1400 (Table 5).

Table 5. Calibrated ^{14}C date (390+/-70 radiocarbon age B.P.) from El Polvorón (Crown and Sires 1984:Table II.1.1). Calibrated using Calib 4.3 (Stuiver and Reimer 1993; Stuiver et al. 1998).

Area Enclosed	Calibrated Age Ranges (A.D.)	Area Under Probability Distribution
1 Sigma (68.3%)	1441-1574	1.000
2 Sigma (95.4%)	1422-1644	1.000

Las Fosas (AZ U:15:9 ASM), a site investigated as part of the same project as El Polvorón, was assigned exclusively to the Civano phase despite the fact that some contexts at the site exhibited architectural traits characteristic of the Polvorón phase (Henderson and Hackbarth 2000:300, Figure 6). These same features yielded radiocarbon dates falling in the temporal range Sires assigned to the Polvorón phase (Table 6), although they were discounted as "clearly too late" (Crown and Sires 1984:77). Nearly 20% of the Roosevelt Red Ware bowls at Las Fosas exhibit recurved rims (Crown 1983:Table I.4.20).

Table 6. Calibrated ^{14}C dates from Las Fosas (Crown and Sires 1984:Table II.1.1). Calibrated using Calib 4.3 (Stuiver and Reimer 1993; Stuiver et al. 1998).

Radiocarbon Age (B.P.)	Area Enclosed	Calibrated Age Ranges (A.D.)	Area Under Probability Distribution
430+/-60	1 Sigma (68.3%)	1421-1495 1497-1514 1600-1615	0.779 0.111 0.110
	2 Sigma (95.4%)	1405-1531 1545-1635	0.734 0.266
370+/-60	1 Sigma (68.3%)	1452-1523 1568-1627	0.550 0.450
	2 Sigma (95.4%)	1439-1641	1.000

Escalante Ruin

Reevaluated archaeomagnetic dates from Escalante Ruin (AZ U:15:3 ASM) suggest the site was occupied during the late A.D. 1300s and at least the early 1400s (Table 7; Eighmy and Doyel 1987:Table 2). At Escalante, 32% of the Gila Polychrome bowl rim sherds recovered were from recurved vessels (Doyel 1974:Table 5).

Table 7. Archaeomagnetic dates (A.D.) from Escalante Ruin (from Eighmy and Doyel 1987:Table 2)

Date as originally reported (Doyel 1974)	Revised date (Eighmy and Doyel 1987)
1330+/-22	post-1425
1430+/-19	post-1425
1410+/-9	1400-post-1425
1355+/-9	1350-post-1425
1445+/-20	post-1425
1350+/-7	1350-post-1425
1385+/-18	1325-post-1425
1280+/-27	950-1010[a]
1260+/-20	1200-1300

[a]considered an anomalous date (Eighmy and Doyel 1987:339)

Differential Distribution at the Inter-regional Level

Crown's (1994) whole vessel study revealed a spatial pattern in the distribution of Roosevelt Red Ware recurved bowls that Lekson (2000) has recently discussed. In Table 8 and Figure 7, I present Crown's (1994:Table 4.8) bowl form data by region. Her spatial units of analysis were Mogollon Rim/Anasazi (the Middle and Upper Little Colorado River Valley, including the Silver Creek drainage and the Zuni River Valley; and the Upper Salt River Valley), Tonto-Globe (the Tonto Basin and the Globe highlands), Hohokam (the Lower Salt, the Middle Gila, and the lower and middle stretches of the Santa Cruz River Valley), and Borderlands (the San Pedro River Valley, the Safford Basin, the Sulphur Springs Valley, the San Bernardino Valley, the Upper Gila/Cliff Valley, the bootheel of New Mexico, the Casa Grandes area, and the area east of the Middle Río Grande Valley and west of the Middle Pecos River Valley). The percentage of recurved bowls in Crown's sample from the Borderlands is more than double that associated with her sample from the Hohokam area, the region with the second-highest frequency of vessels of this form (also see Lekson 2000). I argue that there is a strong temporal component to this spatial pattern; Roosevelt Red Ware bowl forms changed through time as its makers, immigrants from northeastern Arizona and their descendants, spread southward,

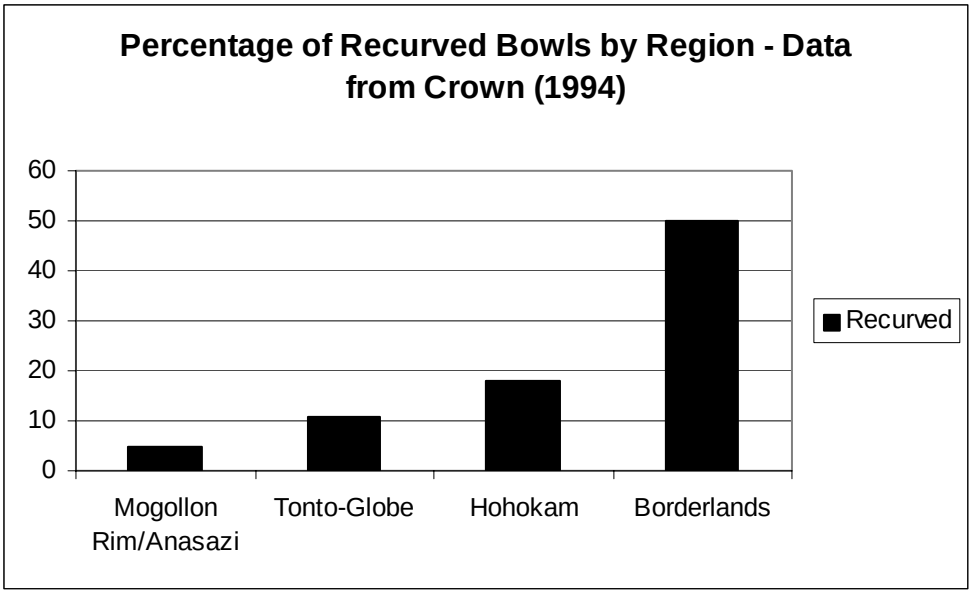
westward, and eastward (Lyons 2003a). At first glance, this pattern might be interpreted as evidence that sites in Crown's Borderlands sample were occupied later than those in her other regional samples. The situation is not quite that simple, however.

Recently compiled demographic data and newly developed theoretical models suggest that population declined and contracted spatially throughout the late Classic Period in the southern Southwest, even in the face of immigration from the north, with remnant populations relocating to areas allowing easy access to other groups (Clark et al. 2003; Hill et al. 2003; Wilcox et al. 2003; also see Nelson and LeBlanc 1986:247). The Gila River corridor, including the Cliff Valley, the Safford Basin, the Dripping Springs Valley, the Globe highlands, and the Lower San Pedro Valley likely remained occupied longer than surrounding areas, such as the Salt River Valley, and the Tonto Basin. Based on indications of (1) short occupation spans and abundant evidence of northern immigrants and their descendants in the Borderlands (Lekson 2000; Lyons 2003a; Nelson and LeBlanc 1986); and (2) greater occupational continuity and fewer traces of northerners and their descendants in the Hohokam core area (the Phoenix Basin), I believe that the pattern revealed in Figure 7 also reflects the presence of many more late-established (i.e., post-1350) immigrant enclaves in the Borderlands than in the Phoenix and Tucson basins.

Table 8. Crown's (1994:Table 4.8) Roosevelt Red Ware vessel form data by region (bowls only).

% Bowl Form	Mogollon Rim/Anasazi	Tonto-Globe	Hohokam	Borderlands
Straight	21	27	33	18
Outcurved	16	15	24	1
Incurved	58	39	20	28
Oval	0	8	4	2
Recurved	5	11	18	50
N	86	300	54	98

Figure 7. Histogram based on data in Table 8 (Crown 1994:Table 4.8).



Differential Distribution at the Intra-regional Level

Local spatial patterns are also evident in the distribution of recurved Roosevelt Red Ware bowls. As noted above, Gladwin and Gladwin (1935:219-220) long ago noted the uneven distribution of recurved Roosevelt Red Ware bowls in the Tonto Basin. Recent research by Arizona State University has lent support to the Gladwins' observation (Kathy Niles Hensler 2003, personal communication). In the Phoenix Basin, at least eight times more Cliff Polychrome was recovered from Los Muertos than Pueblo Grande, based on data published by Haury (1945:72) and Peterson (1994:376, 381, Table 7.4). The strongest evidence of this phenomenon yet documented comes from the Lower San Pedro Valley, the subject of the case study presented in detail below.

Cliff Polychrome in the Lower San Pedro River Valley

The Center for Desert Archaeology's San Pedro Preservation Project involved the test excavation of 29 Classic period sites (A.D. 1200-1450) in the lower San Pedro Valley of

southeastern Arizona (Clark and Lyons 2003; Doelle et al. 1999) and ceramic sourcing employing the petrofacies approach (Miksa et al. 2003; Miksa and Doelle 1998; also see Abbott 2000; Miksa and Heidke 1995; Schaller 1994). Based on the presence and frequency of San Carlos Red-on-Brown, Maverick Mountain Series types, and Roosevelt Red Ware, and architectural traits and settlement patterns, a four-phase chronological sequence has been established for the area between Benson, Arizona and the confluence of the San Pedro and the Gila at Winkelman. These include the Soza phase (circa A.D. 1200-1250/1275), the Aravaipa phase (circa A.D. 1250/1275-1300/1325), the Redfield phase (circa A.D. 1300/1325-1350/1375), and the Romero phase (circa A.D. 1350/1375-1450; Clark and Lyons 2003; Lyons et al. 2003).

The Romero phase can be further subdivided into early and late intervals based on the frequency of Cliff Polychrome and Tonto Polychrome at each site and, at one village (Flieger Ruin, AZ BB:2:7 ASM), the presence of a handful of specimens of post-A.D. 1400, intrusive types (Rio Grande Glaze C and Matsaki Polychrome). Most late Romero phase sites are coursed adobe roomblocks, similar to sites characteristic of the Cliff phase in the Cliff and Mimbres valleys, with decorated ceramic assemblages overwhelmingly dominated by Roosevelt Red Ware (Nelson and LeBlanc 1986; Wallace 1998; Wilson 1998a, 1998b; also see Smith 1979).

The San Pedro Valley can be divided into four spatial units during the Classic Period. From north to south, these are the Dudleyville District (between Winkelman and Dudleyville), the Aravaipa District (centered on the confluence of Aravaipa Creek and the San Pedro River), the San Manuel District (from just north of Mammoth to just north of Redington) and the Cascabel District (from just north of Redington to about ten miles north of Benson; Clark and Lyons 2003). Cliff Polychrome is concentrated in sites located in the two northern districts, and in the Dudleyville District, in particular (Table 9, Table 10, Figure 8). The spatial distribution of

Table 9. Frequency of recurved Roosevelt Red Ware bowls in excavated samples from San Pedro Valley Classic period sites. The names of adobe roomblock sites in located in the Dudleyville District appear in italics.

Site Name	ASM Site Number	Recurved RRW bowls (N)[a]	Total RRW rim sherds (N)[a]	% Recurved RRW bowls	District
Flieger	AZ BB:2:7	13	28	46.4	Aravaipa
Swingle's Sample	AZ BB:1:22	18	54	33.3	Dudleyville
Adobe Hill	AZ BB:1:32	4	13	30.8	Dudleyville
Bajada/Ring site	AZ BB:1:6	3	10	30.0	Dudleyville
Piper Springs	AZ BB:1:34	5	23	21.7	Dudleyville
Ash Terrace	AZ BB:2:19	6	28	21.4	Aravaipa
Leaverton[b]	AZ BB:6:11	4	19	21.0	San Manuel
Dudleyville	AZ BB:2:83	11	55	20.0	Dudleyville
Lost Mound	AZ BB:2:3	7	42	16.7	Aravaipa
Curtis site	AZ BB:11:100	2	16	12.5	Cascabel
José Solas	AZ BB:11:91	3	25	12.0	Cascabel
Wright	AZ BB:2:51	8	72	11.1	Aravaipa
Big Bell	AZ BB:6:2	1	10	10.0	San Manuel
Flagged Bush	AZ BB:1:63	1	12	8.3	Dudleyville
Reeve Ruin[c]	AZ BB:11:26	7	94	7.4	Cascabel
Elliott site	AZ BB:11:27	7	110	6.4	Cascabel
Davis Ranch site	AZ BB:11:36	3	61	4.9	Cascabel
Bayless Ruin	AZ BB:11:2	2	46	4.3	Cascabel
High Mesa	AZ BB:7:5	0	32	0.0	San Manuel
Artifact Hill	AZ BB:1:55	0	16	0.0	Dudleyville
Tres Alamos[d]	AZ BB:15:1	0	7	0.0	
111 Ranch	AZ BB:6:73	0	6	0.0	San Manuel
Camp Village	AZ BB:6:5	0	5	0.0	San Manuel
Roach Wash	AZ BB:1:33	0	4	0.0	Dudleyville
Buzan	AZ BB:2:10	0	3	0.0	Aravaipa

Notes: [a]These categories include a small number of sherds more precisely referred to as "necks," i.e., the "lip" portion of the vessel is missing, but enough of the vessel profile is represented that its form can be determined.

[b]Leaverton is the northernmost site in the San Manuel District tested by CDA; it is located just to the south of the boundary between the Aravaipa and San Manuel districts.

[c]Di Peso (1958:Figure 12) reports that 32.4% of the Roosevelt Red Ware bowls at Reeve Ruin are recurved; this means that 22.6% of the Roosevelt Red Ware vessels at Reeve are recurved bowls (see below).

[d]Cliff Polychrome is present in Amerind Foundation sample (Tuthill 1947:Plate 21e, f).

Tonto Polychrome in the San Pedro matches that of Cliff Polychrome, lending support to the inference that the latter type is a late expression of Roosevelt Red Ware. As expected, the distribution of Pinto Polychrome, one of the earliest Roosevelt Red Ware types, is complementary to that of Cliff Polychrome.

The results of the aforementioned petrographic analyses indicate that almost all the Roosevelt Red Ware found at sites in the San Pedro Valley was locally produced (Miksa et al. 2003). These same data suggest that Cliff Polychrome was manufactured at many sites with Romero phase components, including Reeve Ruin and the late-Romero-phase adobe roomblocks of the Dudleyville District.

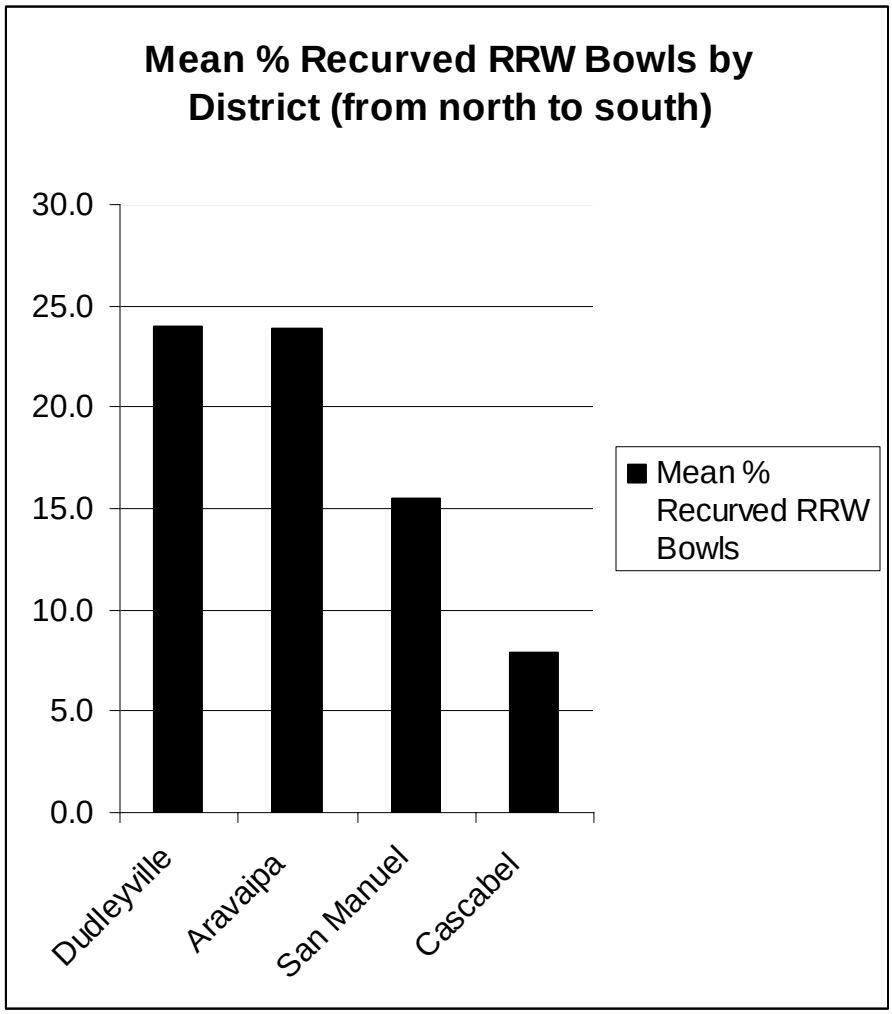
Some San Pedro Valley sites that have yielded Cliff Polychrome do not appear in Table 9 because it is impossible, based on available data from previous work,[2] to establish the quantity present (e.g., Alder Wash Ruin, Second Canyon Ruin; Franklin 1980; Masse 1985). In the case of Tres Alamos, the Center for Desert Archaeology failed to recover Cliff Polychrome as a result of its excavations despite the presence of the type in Amerind Foundation collections from the site (Fulton 1947).

Table 10. Mean percentage of recurved Roosevelt Red Ware bowls by district.

District	**Mean % Recurved Roosevelt Red Ware Bowls**
Dudleyville	24.0
Aravaipa	23.9 [a]
San Manuel	15.5
Cascabel	7.5

[a]The mean for this group is inflated greatly based on the percentage of recurved Roosevelt Red Ware bowls from Flieger Ruin (46.4%), which is more than twice the amount recovered from any other site in the district.

Figure 8. Histogram based on data presented in Table 10.



The Amerind Foundation assemblage from Reeve Ruin (Di Peso 1958) exhibits a much higher percentage of Cliff Polychrome (22.6%) than is present in the CDA assemblage (7.4%). However, CDA excavations focused almost exclusively on extramural trash contexts, whereas Amerind excavations were mainly directed toward intramural space. Di Peso's (1958) comments on the fill of the rooms he excavated, and the number of objects recovered from these spaces suggest that a number of them were filled with trash. The trash fill from these rooms, which accounts for the majority of the ceramics in the Amerind Foundation assemblage, very likely post-dates the extramural trash deposits sampled by CDA. In determining where to place Reeve

Ruin in the seriation, it was decided that comparability of deposits among sites should be maintained.

CLIFF POLYCHROME TYPE DESCRIPTION

The type description that follows must allow for considerable variability, especially in terms of technological traits related to raw materials, as all available evidence suggests Roosevelt Red Ware (including Cliff Polychrome) was produced locally in most areas where it is found (e.g., Crown and Bishop 1991, 1994; Danson and Wallace 1956; Duff 1999, 2002; Lightfoot and Jewett 1984; Lyons 2001, 2003a; Martin and Rinaldo 1960:186-195; Miksa et al. 2003; Zedeño 1994). When possible, I have referred to patterns documented as a result of Crown's (1994) pan-Southwestern Roosevelt Red Ware whole vessel study.

New Type: Cliff Polychrome
Named by: Harlow (1968)
Synonyms: Gila Polychrome, in part; Tonto Polychrome, in part; "Gila interior/Tonto exterior," in part; "Tonto interior/Gila Exterior," in part
Previously Described by: Kidder (1962:306, Figure 26c), Gladwin and Gladwin (1935:219-220), Haury (1945:67, 72), Harlow (1968), Lekson (2000:278); Wilson (1998a:206)
Type Site: Ormand Village (LA5793), near Cliff, New Mexico
Basis of Present Description: Collections from Ormand Village (Wilson 1998a, 1998b), Los Muertos (AZ U:9:56 ASM; Haury 1945), and 18 Classic period sites in the San Pedro Valley (Table 9); also the results of Crown's (1994) analysis of 779 Roosevelt Red Ware whole vessels
Construction: Crown (1994:41-42) reports that almost 90% of the Roosevelt Red Ware vessels in her sample that exhibited evidence of construction technique were thinned via scraping, whereas nearly 10% were made using paddle and anvil. Evidence of paddle-and-anvil thinning was not noted among specimens recovered from the San Pedro Valley by CDA. Haury (1945:52, 64, Figure 26) made a point of contrasting evidence of coil-and-scrape forming, exhibited by Roosevelt Red Ware vessels, and indications of paddle-and-anvil thinning, displayed by Casa Grande Red-on-buff vessels, at Los Muertos. Neither Harlow (1968) nor Wilson (1998a, 1998b) directly address the question of Roosevelt Red Ware forming technique(s) based on their work with the Ormand Village assemblage.
Paste Color: Variable
Paste Texture: Variable
Temper: Variable
Forms: Recurved, semi-flaring incurved, and semi-flaring hemispherical bowls (see Figure 2;

also see Lyons 2003b:Figure 6.6)

Rim and lip forms: No data currently available

Wall Thickness: Variable

Exterior Surface Treatment: Slipped and polished; occasionally also painted

Exterior Surface Color: Red slip (see Crown 1994:42); occasionally areas of white slip with black, painted decoration (either in the manner described above for Gila Polychrome jars or Tonto Polychrome jars)

Interior Surface Treatment: Polished, slipped, and painted

Interior Surface Color: White slip with black, painted designs

Paint: Black; Crown's (1994) study suggests most (more than two-thirds) of Roosevelt Red Ware vessels exhibit organic paint, although some bear mineral paint.

Bowl layouts: Two design fields separated by a banding line (Figure 1, Figure 2)

Motifs: No data currently available[3]

Comparisons: The upper design field (above the banding line) is used here to distinguish Cliff Polychrome from Gila Polychrome. Pinto Polychrome lacks the banding line and the upper design field; Recurved bowls are very rare among Pinto Polychrome vessels and this form is used here as another criterion separating Cliff Polychrome (recurved bowls) from Gila Polychrome.

Illustrations: See Figure 2 (also see Haury 1945: Plate 10b, b'; Lekson 2002:Figure 216a, e, f, h-k, n; Wilson 1998a: Figures 112a, c-e, 113a, e, f, 114c, f, 117e, 118b)

Spatial Distribution: The area from Petrified Forest National Park, Arizona, to the site of Casas Grandes, Chihuahua, and from the Phoenix Basin, in Arizona, to the vicinity of Alamogordo, New Mexico (Table 11); Compiling frequency data has been hampered somewhat by the use of the term "wide-mouthed jar" (as opposed to "recurved bowl") by some ceramic analysts working with assemblages from the Phoenix Basin (e.g., Peterson 1994:376; Walsh-Anduze and Abbott 1994:Figure 5.1; Williams 1995:101).

Temporal Distribution: Available data suggest Cliff Polychrome was introduced after A.D. 1350 and reached its peak of popularity during the late A.D. 1300s and early to middle A.D. 1400s.

Remarks: Harlow's (1968) definition includes both bowls and jars, whereas this description applies only to bowls. Harlow's ideas regarding jars remain to be explored.

IMPLICATIONS OF RECOGNIZING CLIFF POLYCHROME AS A TYPE

> Admittedly, some of the variation among sites that is apparent in the present sample [of "Salado" settlements in Arizona and New Mexico] is probably due to lack of precise chronological control (Nelson and LeBlanc 1986:6).

The implications of making use of Cliff Polychrome as a dating tool are both local and macro-regional in scope. At the local level, recognition of Cliff Polychrome as a type may allow researchers to resolve the chronological relationship between the Polvorón and Civano phases in

the Middle Gila Valley and the Phoenix Basin, permitting a more accurate interpretation of the material culture patterns and social processes associated with each (Chenault 1996, 2000; Craig 1995; Crown and Sires 1984; Doyel 1995; Henderson and Hackbarth 2000; Sires 1984). Within the Lower San Pedro Valley, seriation of sites based on Cliff Polychrome has made it possible to track demographic changes at a level of resolution previously unattainable (Clark et al. 2003; Hill et al. 2003).

Working at the level of the Greater Southwest, Nelson and LeBlanc (1986) long ago addressed the variability of the Salado phenomenon and sought to understand it from the perspective of the Cliff phase of the Mimbres Valley. Although their critique of the Salado concept emphasized the diversity of remains lumped under the Salado rubric, they recognized patterns in the Classic period archaeology of the Mimbres Valley that linked sites there to sites in other areas, including the Cliff Valley-Upper Gila River Valley, and the Sulphur Springs and San Pedro valleys. Nelson and LeBlanc (1986) called attention to shared architectural traits in these areas and noted similar plainware vessel forms and technology at some sites.

Cliff Plain and Cliff Red (as described by Nelson and LeBlanc [1986:133-135]), the late prehistoric utility ware types of the Mimbres Valley often exhibit the form characteristic of Cliff Polychrome (bowls with "everted rims"). Cliff Plain and Cliff Red seem to represent products of the same technological and stylistic tradition associated with Belford Plain and Belford Red, types named by Di Peso (1958:90-91, 104-105) based on his work at Reeve Ruin, in the San Pedro Valley. Researchers working in the Phoenix Basin have since recognized a locally produced redware type, Phoenix Red (Abbott and Gregory 1988:19-22; Crown 1981:115), which is reminiscent of both Belford Red and Cliff Red (Brunson 1989:159). These types are found alongside Cliff Polychrome in sites characterized by coursed adobe roomblock architecture (as

opposed to compound architecture; see Clark 2001), in the Sulphur Springs, San Pedro, and Dripping Springs valleys, as well as the Mimbres and Cliff valleys (Clark et al. 2003; Nelson and LeBlanc 1986; Smith 1979).

Based on what is now known of Cliff Polychrome, sites that yield high frequencies of this type were among the latest occupied and latest vacated before the Spanish Entrada in A.D. 1540. Examining the data from this set of sites, as a group, promises to yield important insights regarding the social, economic, and demographic processes unfolding during the 15th century in the southern Southwest. It is this same set of sites that represent the most likely points of agreement between the archaeological record and Native American oral traditions regarding tribal origins and migrations.

SUMMARY AND CONCLUSIONS

Roosevelt Red Ware, in general, and Gila Polychrome, in particular, are key chronological tools for archaeologists studying the Classic period in the southern Southwest. Researchers have long been aware of a constellation of traits worthy of type status among Roosevelt Red Ware bowls previously subsumed under the rubric of Gila Polychrome: recurved bowls with two decorative fields, one above the banding line and one below. Francis Harlow (1968) proposed the name Cliff Polychrome to refer, in part, to bowls exhibiting these characteristics. Associated archaeomagnetic, radiocarbon, and tree-ring dates, as well as inter-regional and intra-regional spatial patterns strongly suggest that Cliff Polychrome was introduced after A.D. 1350 and increased in frequency through time. Recognition of Cliff Polychrome as a type helps to identify the latest occupied prehistoric sites in the southern Southwest. Studying these sites as a group will yield important insights regarding late prehistoric

and protohistoric social, economic, and demographic processes as well as tribal origins and migrations.

ENDNOTES

[1]Sires (1984:271, 324; cf. Crown and Sires 1984:85) refers to "Hopi Orange Ware" in the context of discussing the types Jeddito Black-on-yellow and Bidahochi Polychrome. These are types in Jeddito Yellow Ware. "Hopi Orange Ware" does not exist as a formal typological category. "Hopi Yellow Ware" (Crown and Sires 1984:85) is also an unacceptable term, as two yellow wares were produced on the Hopi Mesas, Jeddito Yellow Ware (painted types; Colton [editor] 1956:Ware 7B) and Awatobi (Awat'ovi) Yellow Ware (plain, unpainted/polished, corrugated, and tooled types; Colton [editor] 1956:Ware 7A).

[2]The available reports include illustrations of Gila Polychrome sherds and/or vessels fitting the description of Cliff Polychrome, but discussions of vessel form variability are lacking.

[3]Correlations between Roosevelt Red Ware bowl form, layout, and design motifs are currently being studied (Clark et al. 2003). Illustrations provided by Crown (1994) and other authors suggest that, most often, recurved bowls with dual design fields exhibit motifs characteristic of the late end of the Roosevelt Red Ware production span.

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Table 11. Known distribution of Cliff Polychrome. Arizona State Museum site numbers are listed unless otherwise indicated.

Site	Site Number	Region	Reference(s)
Alamogordo area		Alamogordo, NM	Crown 1994:Figure 5.15
Haby Ranch Site	AZ BB:3:16	Aravaipa Valley, AZ	Amerind Foundation collections
Pendelton Ruin	LA1369	Animas Valley, NM	Kidder et al. 1949:Figure 11b
Joyce Well	LA11823	Playas Valley, NM	William Walker, personal communication, 2002
Casas Grandes	CHIH:D:9:1 AF	Northwestern Chihuahua	Di Peso et al. 1974[6]:Figure 4.6; Di Peso et al. 1974[8]:152
Dripping Springs Site		Dripping Springs Valley, AZ	Smith 1979:62
Boice Ranch Site		Dripping Springs Valley, AZ	Smith 1979:66
Windmill Site		Dripping Springs Valley, AZ	Smith 1979:68
Trailer Site		Dripping Springs Valley, AZ	Smith 1979:69
East Ruin	AZ V:9:68	Globe Highlands, AZ	Doyel 1978:Figure 62
Gila Pueblo	AZ V:9:52	Globe Highlands, AZ	Crown 1994:Figures 5.21, 5.22, 9.21, 9.28c, 9.33; Haury 1988:Figure 3
Besh-Ba-Gowah	AZ V:9:11	Globe Highlands, AZ	Besh-Ba-Gowah Archaeological Park collections
Second Canyon Ruin	AZ BB:11:20	Lower San Pedro Valley, AZ	Franklin 1980:Figure 25
Alder Wash Ruin	AZ BB:6:9	Lower San Pedro Valley, AZ	Masse 1985:Figure 57
Tres Alamos	AZ BB:15:1	Lower San Pedro Valley, AZ	Tuthill 1947:Plate 21e,f
Escalante Ruin	AZ U:15:3	Middle Gila River Valley, AZ	Doyel 1974:Plate 39
El Polvoron	AZ U:15:59	Middle Gila River Valley, AZ	Crown 1983:Table I.4.20
Las Fosas	AZ U:15:19	Middle Gila River Valley, AZ	Crown 1983:Table I.4.20
Stailey Site		Mimbres River Valley, NM	Nelson and LeBlanc 1986:Figure 7.6f
Janss Site	LA12077	Mimbres River Valley, NM	Nelson and LeBlanc 1986:136
Disert Site	LA15021	Mimbres River Valley, NM	Nelson and LeBlanc 1986:136
Pueblo Grande	AZ U:9:7	Phoenix Basin, AZ	Peterson 1994:376, 381, Table 7.4
	AZ U:9:46	Phoenix Basin, AZ	Herskovitz 1981:Figure 20
Los Muertos	AZ U:9:56	Phoenix Basin, AZ	Haury 1945:Figure 45, Plate 10b
South Pueblo Blanco	AZ U:9:95	Phoenix Basin, AZ	Miksa 1995:Figure 7.05
Las Acequias	AZ U:9:44 ASU	Phoenix Basin, AZ	Haury 1945:Plate 77f, g
Crismon Pueblo	AZ U:9:173	Phoenix Basin, AZ	T. Kathleen Henderson, personal communication, 2003
Las Colinas	AZ T:12:10	Phoenix Basin, AZ	Crown 1981:115
Dutch Canal Ruin	AZ T:12:62	Phoenix Basin, AZ	Motsinger 1994:215
Tres Pueblos	AZ U:9:14	Phoenix Basin, AZ	Williams 1995:101
Tule Tubs Cave	AZ W:9:69	Point of Pines Creek, AZ	Gifford 1980:112, Figures 86, 88, 89
Wallace Tank Ruin	AZ Q:1:199	Puerco Valley, AZ	Mera 1934:19-20
Curtis Site	AZ CC:2:3	Safford Basin, AZ	Mills and Mills 1978:185, 196

Table 11 (continued)**.**

Site	Site Number	Region	Reference(s)
Daley Site	AZ CC:2:235	Safford Basin, AZ	Lyons 2003b:Table 6.8, Figure 6.11
	AZ CC:2:289	Safford Basin, AZ	Lyons 2003b:Table 6.10, Figure 6.11
Ringo Site	AZ FF:3:8	Sulphur Springs Valley, AZ	Arizona State Museum collections
Kuykendall Site	AZ FF:2:2	Sulphur Springs Valley, AZ	Crown 1994:Figures 5.19, 9.14; Mills and Mills 1969:Figures 39, 76, 78
Cline Terrace Mound	AZ U:4:33	Tonto Basin, AZ	Simon 1997:Figure 8.12
	Roosevelt:5:9 GP	Tonto Basin, AZ	Martin and Willis 1940:Plate 125.7
VIV Ruin	AZ U:3:11	Tonto Basin, AZ	Crown 1994:Figures 5.36, 9.26; Mills and Mills 1975:68, 73
University Indian Ruin	AZ BB:9:33	Tucson Basin, AZ	Arizona State Museum collections
	AZ CC:8:1	Upper Gila River Valley, AZ	Arizona State Museum collections
Dutch Ruin	NM Y:5:1	Upper Gila River Valley, NM	Lekson 2002:Figure 216a, e, f, h-k, n
Ormand Village	LA5779	Upper Gila River Valley, NM	Wilson 1998a:Figures 112a, c-e, 113a, e, f, 114c, f, 117e, 118b
Sherwood Ranch Ruin	AZ Q:11:48	Upper Little Colorado Valley, AZ	Cunkle 1994:108-109, Photo 30, Plate 40
Grashopper Pueblo	AZ P:14:1	Upper Salt River Valley, AZ	Reid and Whittlesey 1999:137
Kinishba	AZ V:4:1	Upper Salt River Valley, AZ	Crown 1994:Figure 9.24
Babocomari Village	AZ EE:7:1	Upper San Pedro Valley, AZ	Amerind Foundation collections

Notes: LA = Laboratory of Anthropology; AF = Amerind Foundation; ASU = Arizona State University; GP = Gila Pueblo

Figure 2. Cliff Polychrome bowl fragment recovered from the Adobe Hill site (AZ BB:1:32 ASM), in the San Pedro Valley, southeastern Arizona. Photograph by Jack Ramsey.

Figure 4. Gila Polychrome bowl fragment recovered from the Wright site (AZ BB:2:51 ASM), in the San Pedro River Valley, southeastern Arizona. Photograph by Jack Ramsey.