CHAPTER 6

Pot Conveyance, Design Characteristics, and Precontact Adaptations to Arid Environments

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All human societies convey goods across the landscape. As discussed by Hughes (this volume), we know from ethnographic and historical studies that people invest considerable time and effort into moving goods and that the reasons they do so vary greatly. Conveyance varies along several dimensions including space, time, technology, and social context. For example, some conveyance takes place within families across short spatial distances, commonly referred to as "sharing," while other conveyance crosses long distances in state-level societies between individuals who may not even know one another, commonly called "transport" or "trade." Considerable theorizing on the part of anthropologists and others has generated a robust literature on conveyance to help tease apart some of these factors (e.g., Axelrod 1984; Boyd and Richerson 1992; Davis 1973; Gregory 1982; Gurven 2004; Mauss 1990; Polanyi 1968; Sahlins 1972; Smith 1937; Winterhalder 1986, 1997; Yengoyan 1968).

Archaeologists have developed sophisticated methods to detect the movement of goods in the record, often using geochemical methods with colleagues in geology, chemistry, and physics. Through this work we know that ancient societies conveyed a range of materials, including food, raw materials to produce craft items, and finished items themselves. We have documented both long-distance (e.g., Glascock 2002) and intracommunity movement of goods (e.g., Enloe 2003) and have assembled vast databases that document relative changes in the direction and intensity of the movement of goods.

As Hughes (this volume) alludes to, assigning behavioral meaning to such patterns, such as trade vs. direct access, is difficult. We need better theoretical contexts for understanding the social conditions that prompt conveyance in different cases and middle-range theory that predicts how such conveyance manifests itself in the archaeo- logical record. Indeed, many of the chapters in this book make a substantial contribution toward that end.

This essay attempts to do so as well, but rather than trying to tease apart direct access vs. trade or exchange, the focus is on conveyance as an indicator of interregional "interaction" and the factors that motivate such interaction. I build on a model described by Earle (1994) and generate hypotheses regarding the form of pots in the southwestern Great Basin moved under various conditions. I focus specifically on subsistence, technological, and political motivations for conveying goods. In the end, I arrive at hypotheses about whether those pots were traded or directly accessed.

Conveyance Studies in California and the Great Basin

Archaeologists working in California and the Great Basin have invested heavily in "sourcing" or conveyance studies. Researchers have relied heavily on obsidian and marine shell beads to reconstruct ancient interaction networks. The assemblage of large diachronic databases, generated over several decades, has led to important insights in how societies of the past changed their mobility strategies, displayed wealth, and interacted with others on a regional scale (e.g., Bennyhoff and Hughes 1987;Bettinger 1982; Ericson 1977; Hughes 1994; Hughes and Bennyhoff 1986; McGuire and Howard 1987; Milliken and Bennyhoff 1993; Shackley 2005). This rich database has fostered increasingly fine-grained analysis of ancient interaction, down to even the household level (e.g., Eerkens and Spurling 2008).

Relative to obsidian and marine shell beads, pottery has not played an important role in studies of conveyance or exchange in California and the Great Basin. It may be the "plain" character of most brownware pots, which do not look like the "fancy" items typically associated with exchange, or it may be the fact that pottery is not ubiquitously found across this area, which does not lend itself to broad regional studies. In any case, pottery, when it is found, is usually assumed to be locally made and therefore not of great importance in studies of regional interaction.

This situation in California and the Great Basin is quite unlike studies of pottery in other places around the globe (e.g., Boardman 1999; Glowacki and Neff 2002; Neff 1992; Vaughn et al. 2006; Zedeño 1998). In these areas exotic pots, identified by either distinctive decoration styles, nonlocal mineralogy, or unusual geochemical composition, are a common component of the archaeological record and are used to examine a range of aspects about ancient societies including exchange, as well as the presence of markets, communal feasting, gift-giving, and other inter- actions between individuals and larger sociopolitical groups.

Recent studies (e.g.,Eerkens 2011; Eerkens et al. 2002; Pierce 2002) have shown that southwestern Great Basin pots are amenable to provenance analysis and, hence, can be used to assess ancient interaction. Though the majority of pots were locally produced, a fraction (ca. 12 percent) was conveyed across the landscape. This chapter asks why pots were moved at all and examines attributes of conveyed pots to help answer that question. More specifically, the essay tests the hypothesis, proposed elsewhere (Eerkens 2011; Eerkens et al. 2002), that pots represent the byproducts of occasional visits by nuclear families to other regions when resources were in short supply locally.

Models for Conveyance

Humans are motivated to move material goods for a range of reasons. Earle (1994) has summarized these motivations for human societies and categorized them by subsistence, technological, and political ends. There is nothing necessarily "natural" about these categories. However, given a substantial amount of past anthropological and economic research (cited above), I believe that these motivations are frequently central in human decision making about conveyance. Moreover, this rich literature has produced robust theory on conveyance. Importantly, such theory has the potential to set archaeological research on firm scientific grounds. That is, this theory produces hypotheses that can easily be tested with the type of archaeological data we typically collect. This is not to say that identity, gender, and other factors are not important in motivating exchange. It only says that there has been less theory-building along these lines and, more specifically, theory-building that readily produces hypotheses that can tested with archaeological data (e.g., such that we can evaluate the veracity of such theory).

Elsewhere (Eerkens 2011), I have applied Earle's model to ancient pots in the southwestern Great Basin within an environmental context, to examine patterning in the direction of movement of pots. In this essay, I take the same theoretical model to generate predictions for the technological design of pots.

Conveyance Motivated by Subsistence Concerns

Imbalance between the physical location of people and food resources is a commonly cited reason why people move either food (i.e., through logistical mobility) or themselves (i.e., through residential mobility) across the landscape (Binford 1980; Smith 1988; Winterhalder 1997). Higher spatial variance in bioproductivity makes such conveyance especially important in arid regions (e.g., Hereford et al. 2006; Le Houerou 1984; McNaughton et al. 1989; Rhode, this volume). The costs and benefits of moving resources to people vs. moving people to resources are contingent upon a number of factors, including population density, bioproductivity, anticipated search and handling times, extractive technologies, and the landscape terrain (e.g., slope, ease of movement), among others.

Both systems, transferring food and moving people, involve conveyance of a number of goods. Transferring food usually requires moving not only the food but some type of container as well (e.g., bags, baskets, pots). This is typically what anthropologists and archaeologists categorize as trade. Moving people, who will then extract and process foods at some distant location, may also require moving extractive and processing technologies (e.g., bows and arrows, baskets, pots). It is true that some extractive and processing tools may be produced in a distant location, but if people are unfamiliar with the location of raw materials to produce those items, or more likely, they do not anticipate having the time to produce them, a small number of these items can be carried on the journey. Some of those tools may be left behind, resulting in conveyed goods that archaeologists can attribute to "interaction" or "exchange" between peoples of different regions. Note that such residential movements of people may be either necessity-driven (e.g., there is not enough food for everyone locally), cost-minimizing-driven (e.g., an easily processed resource is in especially high density elsewhere), or desire-driven (e.g., a food that tastes especially good or can be made into alcohol is available elsewhere). As well, proximal reasons (e.g., a social gathering where potential mates will be present) may also drive such residential movements but must obviously be underwritten by the availability of adequate subsistence resources.

Furthermore, goods in the form of gifts may also be conveyed. This is especially true when the territory into which people are moving is owned and controlled by others. In most hunting and gathering societies such access is given for the asking (Myers 1982; Peterson 1979; Smith 1988), but token gifts frequently accompany such behavior. Gifts and access to territories may be re- ciprocated, in kind, at a later date if patterns in resource availability reverse themselves. In desert societies, the establishment of wide-ranging so- cial networks to facilitate subsistence exchange has been noted by several anthropologists (e.g., Shipek 1982; Yengoyan 1968). These networks, often created through marriage and/or fictive kin ties and maintained through gift-giving and other ritual behaviors, provide individuals with access to a range of other territories and help to minimize the risk of resource shortfall.

Below, I refer to these two motivations for moving goods as "subsistence: food transfer" and "subsistence: residential move." I argue that each motivation system will result in pots that are designed in different ways.

Conveyance Motivated by Technological Concerns

Technological issues can also motivate people to convey goods across the landscape, and there are several ways this can manifest itself in human societies. The most obvious is when there are imbalances in the distribution of the raw materials required in various technological systems. Thus, obsidian is formed under particular geological conditions and is restricted in its spatial distribution. As well, obsidian may have superior performance characteristics in hunting or warfare. For individuals living at a distance from obsidian sources, this superior performance may make the effort expended in acquiring it worthwhile (either directly through mobility or indirectly through trade), rather than using a poorer-quality local material.

Similarly, copper-bearing ores are typically concentrated within certain geological formations, and the fuel and flux needed to smelt such ores may be distributed on other parts of the landscape. Such unequal distributions will require people to transport one or the other, or occasionally all three, to a central location with a kiln. Once smelted, the purified copper may be fashioned into artifacts on the spot or, more typically, conveyed to other locations where it is reworked (e.g., cold-hammered or reheated and poured into a mold).

In both examples, it is the raw materials that are conveyed, and movement of these materials evens out heterogeneity in their availability. I refer to this as the "technology: raw material" model.

Even if raw materials are more or less homogeneously distributed on the landscape, the economies of scale associated with some technological systems may foster conveyance. Thus, because the per-item cost is less with increasing scales of production, some communities of individuals may specialize and mass-produce certain items (e.g., pots) and exchange them for other mass-produced items (e.g., copper pins). The overall cost of production to the interacting communities is less than if each community individually produced both goods. Such economies of scale are often associated with technologies requiring significant investment in infrastructure (e.g., kilns or canals) or pyrotechnologies, where a majority of the costs come from attaining high temperatures and maintaining those temperatures is cheaper than reaching them (e.g., Brown 1989; Earle 2002). From an economics perspective, the savings in costs from mass production should outweigh the costs of conveying those items across the landscape (e.g., transporting them to communities that do not make them). Rather than raw materials, here the finished product is conveyed. I refer to this as the "technology: specialization" model.

Conveyance Motivated by Sociopolitical Concerns

While subsistence and technological motivations are driven primarily by economic concerns, especially to minimize time and labor efforts directed toward these pursuits, conveyance motivated by sociopolitical concerns is driven by other factors. In small-scale societies, people may be motivated to move goods for social reasons, such as giving gifts to create social debt or bride-price payments. In hierarchically organized societies a common motivation for such conveyance is the ability for individuals to use and manipulate exchange networks to establish unequal power relations between themselves and others (Cobb 1996; Earle 1997; Goldstein 2000; Vaughn 2006). This is often accomplished by controlling (usually at a low rate) the flow of "prestige" or "wealth" goods, resulting in items that are valued due to their rarity. These goods tend to be portable and have a high value-to-weight ratio (Brumfiel and Earle 1987). Elites with access to such goods often display or carefully distribute them to legitimize their social status and create debt.

One way to contribute to the rarity of an object is to obtain it from distant and/or exotic locations. Elites or aspiring elites may attempt to establish exclusive long-distance exchange networks with individuals in other societies to control the flow of such goods, contributing to their rarity and leading to a marked increase in their local prestige value. To distinguish them from locally produced goods, they typically contain value-added content, such as decoration, that marks their exotic nature.

Predictions for Pot Attributes

Different motivations for conveyance result in different distributions of production locales and finished artifacts across the landscape. Some systems, such as technological factors, result in concentrated production but wide-ranging distribution systems, attempting to maximize the number of people with access to products. Others, such as political motivations, aim to centralize production and concentrate distribution into the hands of select individuals.

In archaeological contexts, we are left with the end product (production locales and local vs. conveyed items), and we attempt to reverse engineer those motivations for conveyance. One set of predictions that can be derived from the model above concerns patterns in the geographic distribution of conveyed items (see Eerkens 2011 for a detailed discussion). For example, we expect subsistence motivations to result in a pattern where goods are differentially moved between areas that vary temporally in the availability of one or more food resource. For example, if rainfall affects bioproductivity, then regions with similar climatic patterns should see little interaction or inter-conveyance, and regions with dissimilar patterns should witness greater interaction. This should result in unequal "falloff" curves in different geographic directions from production centers.

By contrast, technological motivations for conveyance should not follow environmental gradients but should be driven more by the costs of moving goods over terrains. As a result, such motivations should display steep falloff curves,

Table 6.1. Predictions for Pot Attributes for Exported Pots Relative to Locally Made and Used Vessels.

Model/Motivation	Thickness	Diameter	Organic Temper	Decoration
Subsistence: food transfer	Thinner	identical or larger	More	identical or less often
Subsistence: residential move	Thinner	Smaller	identical or more	identical or less often
Technology: raw material	identical	identical	identical or more	identical
Technology: specialization	identical	identical	identical	identical
Sociopolitical	Thicker or thinner	Larger or smaller	identical or less	More often

with sharp boundaries spaced nearly evenly between production centers (e.g., Thiessen polygons surrounding production centers).

In this section, a model is presented describing how attributes of artifacts, pots more specifically, should covary with different motivations for exchange. For the "subsistence: food transfer" model, lightweight containers minimize effort expended on moving foods. Although baskets, skins, and other lightweight containers would seem to be more appropriate in this capacity (being less fragile and lighter in weight), pots might be used for moving certain types of liquids or wet foods. Such pots should be built to be light, for example, by minimizing thickness and/or using organic temper (Skibo et al. 1989), and only rarely decorated. Diameters of such pots, as a reflection of overall size, should be as large as (or larger than) pots made and used locally, thereby maximizing volume and minimizing weight.

By contrast, pots moved within the "subsistence: residential move" model should also be light in weight and likely more expediently made but should otherwise function in the same way as locally made and used pots (i.e., cooking). For this reason, I expect that such pots will be thinner and smaller in diameter (i.e., likely serving smaller groups or nuclear families) and may have roughly equal amounts of organic temper as pots intended for local use but less often decorated.

Pots produced and moved for technological reasons should appear identical to the pots produced and used locally. When raw materials are moved because they are scarce or absent (e.g., clay, temper; the "technology: raw material" model), there may be multiple groups of potters producing vessels from the same set of raw materials. Some of these groups of potters will be local (i.e., those near the source), while others will be farther away, using nonlocal materials. While potters may have different local potting traditions, there is no reason to expect systematic differences between pots produced from local materials and those produced from imported materials.

Likewise, if pots are being produced by specialists (as part of an economy of scale; the "technology: specialization" model) and are conveyed to provide economic savings, the pots that are moved out from a production center should look nearly identical to the pots that stayed. This assumption may not hold if pots are being produced for different markets, but this is unlikely to hold for the case considered below, brownware pots produced by small-scale hunter-gatherers. In any case, for both these technological models, the thickness, diameter, and rate of surface modification should be the same for locally used and conveyed pots.

Finally, pots that are moved within sociopolitical systems, and constitute wealth or prestige goods, should carry distinctive markers of their exotic origin. The easiest way to accomplish this is through surface modification or the production of unusually shaped vessels. Surface modification typically includes painting or other deco- ration (e.g., incisions, appliqué, cord markings, stamps). As well, because these items are often moved over long distances, they are often more portable (i.e., smaller). As a result, I expect socio- political conveyance to include vessels that are more often decorated and much thinner and smaller in diameter.

Table 6.1 sums up the expectations for the different conveyance models, focusing on the attributes thickness, mouth diameter, temper, and decoration (because these are the easiest to reconstruct from sherd assemblages).

Previous work with sherds from the western Great Basin has suggested that pots were moved primarily for subsistence-related reasons

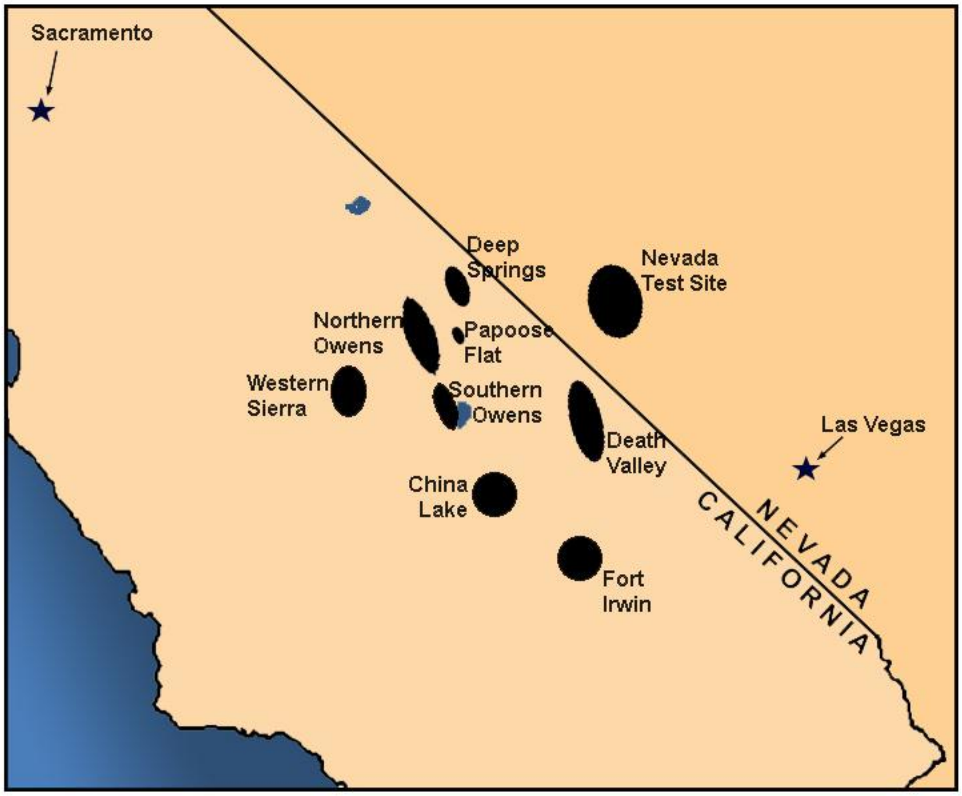

Figure 6.1. Study area and regions sampled for pottery.

(Eerkens 2011). That study shows that pot conveyance follows a pattern that maximizes climatic differences between regions, following the "subsistence: residential move" model. In other words, pots tend to move between areas where precipitation patterns are least correlated. In the sections below, I test that model using data from pot attributes.

Data Set

Data for this study are drawn from instrumental neutron activation analysis (INAA) and technological analyses carried out primarily during my dissertation research (summarized in Eerkens et al. 2002) but include information from a small number of cultural resource management projects that I was involved in since then. INAA provides information on potential source locations for the clay temper recipes that characterize sherds. By contrast, technological analyses provide information on the size and shape of those pots as well as potential uses that vary with design (e.g., Braun 1983; Bronitsky Hamer 1986; Juhl 1995; Schiffer and Skibo 1987; Smith 1985).

A total of 360 sherds, each representing a unique pot, from several different geographic regions, centering on Southern Owens Valley, was characterized by INAA and measured for a range of attributes. Figure 6.1 shows the spatial distribution of these regions within California and Nevada.

The goal of the study was to sample widely to be able to examine interregional interaction. Table 6.2 shows the database of pot sherds by region and sherd type. Owens Valley was divided into two subregions, with the dividing line between south and north occurring at the northern edge of the Alabama Hills.1

Within the data set, there are 280 sherds that were assigned to a geochemical group for which a geographic origin was reasonably clear. Of these, 236 represent locally made pots (156 rims, 76 bodies, 4 bases). An additional 44 sherds were identified as exports from one of the regions

Table 6.2. Sample by Region and Sherd Type included in This Study.

region	Rim Sherds	Body Sherds	Base Sherds	Total	# Export
Death Valley	40	0	0	40	3
China Lake	14	15	2	31	0
Fort irwin	7	25	0	32	0
S. Owens Valley	61	26	0	87	3
Nevada Test Site	19	19	0	38	15
Papoose Flat	4	9	0	13	n/a
N. Owens Valley	34	32	2	68	10
Deep Springs	9	6	0	15	4
Sequoia	30	3	0	33	9
Saline Valley	0	3	0	3	n/a
Total	218	138	4	360	44

Note: because no "local" clay signatures were documented for Papoose Flat and Saline Valley, there was no possibility of finding pots exported from those regions.

listed in Table 6.2 (25 rim and 19 body sherds). The remaining 80 sherds were statistical outliers that did not belong to a geochemical group with a known origin. These sherds could represent local but rarely used clay sources or imported pots from regions not sampled in this study (e.g., a few sherds identified as nonlocal graywares are included in this category). As the analysis below focuses on comparing pots that were made and used locally and those that were exported from these same regions, the ungrouped sherds are not included.

Furthermore, no local signature could be established for the Papoose Flat and Saline Valley regions. This likely relates to the small sample sizes collected from each. These regions, too, are not considered in the analysis below (though sherds imported *to* those areas are).

Each sherd was measured for thickness using a set of digital calipers. Several thickness readings were taken and averaged. Mouth diameter was measured to the nearest 2.5 cm for rim sherds only by holding the sherd over a template with circles drawn of differing diameters. The amount of organic temper (usually grasses and rootlets) was visually estimated for each sherd and recorded on a 0–5 scale. Within this scale, 0 represents no organic temper, and each numerical score above 0 represents approximately an additional 10 percent organic material by volume (i.e., 1 = 10 percent by volume, 2 = 20 percent, etc.), with a maximum of 5. This is a somewhat subjective measurement but should reveal general patterns if it is strongly correlated to conveyance patterns. Finally, decoration was only recorded for rim sherds. All observed instances of decoration involve one or more rows of fingernail incisions, usually around the lip or just below the lip on the exterior surface.

Figure 6.2 shows examples of two complete pots found in the Coso region (in the China Lake area; pots are housed in the Maturango Museum in Ridgecrest, California). These forms are typical of pots from the southwestern Great Basin and are both undecorated cook pots. The pots are roughly the same size, but the form on the left has flaring walls with a wide mouth, while the form on the right has slightly incurving walls and a narrower mouth.

Results

Table 6.3 presents data for the average thickness of rim and body sherds, comparing those produced and kept locally and those exported from that same region. On a sherd-by-sherd basis, for rim sherds, only 13 out of 25 (52 percent) exported samples were thinner than the average thickness of rim sherds from where they were derived. However, 12 of 18 (67 percent) exported body sherds were thinner than their counterparts that stayed local (one sherd could not be measured for thickness). Thus, the overall trend is in the di- rection predicted for the subsistence models (i.e., thinner pots) but is not especially strong.

Figure 6.2. Examples of typical forms of pots from the southwestern Great basin.

Table 6.3. Average Thickness (mm) and Average density of Organic Temper for Locally Produced and Exported Pots.

region	thickness of local rim sherds	thickness of exported rim sherds	thickness of local body sherds	thickness of exported body sherds	local average organic temper	exported average organic temper
Death Valley	5.4	5.1	n/a	6.2	.2	1.0
China Lake	6.4	n/a	6.0	n/a	.7	n/a
Fort Irwin	5.6	n/a	6.3	n/a	.3	n/a
S. Owens Valley	6.3	7.0	6.2	6.7	.7	1.3
Nevada Test Site	5.5	5.5	6.3	6.6	.2	.4
N. Owens Valley	6.5	5.7	6.3	5.4	.3	.3
Deep Springs	5.5	6.0	3.8	n/a	.0	.3
Sequoia	5.1	5.1	7.8	5.2	.0	.1
Pooled average	6.1	5.8	6.3	6.0	.38	.40

Note: No local signature was found for Papoose Flat or Saline Valley. No pots exported from China Lake or Fort Irwin were analyzed.

At a regional level the pattern is even weaker. Locally produced rim sherds are thinner for two regions (Southern Owens Valley and Deep Springs Valley), thicker for two (Death Valley and Northern Owens Valley), and equal for two (Sequoia and the Nevada Test Site). For body sherds, two regions have thinner (Southern Owens Valley and Nevada Test Site) and two regions (Sequoia and Northern Owens Valley) have thicker locally produced sherds (with four regions not measurable for local or exported body sherds). Although the sample size for exported sherds is not large (only 25 rim sherds and 19 body sherds), the aggregated data (the "pooled average" in Table 6.3) provide only marginal support for thinner exported pots.

Table 6.3 also shows average values for the density of organic material in local vs. exported sherds, by region. Again, sample sizes are small for the exported sherds, but the overall trend is slightly in the direction predicted for the subsistence models (i.e., more organic temper or lighter table 6.4. Average diameter (cm) and Percent decorated for Locally Produced and Exported Pots (Rim Sherds Only).

region	diameter of local rim sherds	diameter of exported rim sherds	% of local rims decorated	% of exported rims decorated
death Valley	25.1	20	20	0
China Lake	22.8	n/a	0	n/a
Fort irwin	20.8	n/a	14	n/a
S. Owens Valley	25.9	25	24	50
Nevada Test Site	35.6	20.0	0	0
N. Owens Valley	29.0	27.5	10	0
deep Springs	28.8	20.6	0	0
Sequoia	23.8	22.5	4	20
Pooled Average	25.5	23.3	14	13

Note: No local signature was found for Papoose Flat or Saline Valley. No pots exported from China Lake or Fort irwin were analyzed.

pots). On a case-by-case basis, 56 percent of exported pots have more organic temper than the average for their locally used counterparts. At a regional level, the average density of organic temper is slightly higher for exported pots in five of six and equal in one of six regions. As well, the overall pooled average is slightly greater for exported pots. This suggests that using more organic temper may have been a technique to reduce the weight of items intended for conveyance.

Table 6.4 shows data for the average mouth diameter of locally produced vs. exported rim sherds. Here the data are somewhat stronger in support of the "subsistence: residential move" model. On a case-by-case basis, 18 out of 24 (75 percent) exported rim sherds had a narrower mouth opening than their local counterparts. In addition, rim sherds are systematically smaller, on average, in all six regions for which data are available. This provides much stronger evidence that the pots that were exported from a region were typically smaller than those made and used locally.

Likewise, Table 6.4 also shows rates of decoration for locally made and used vs. exported pots. Rates of decoration for local pots are higher in two regions, lower in two regions, and equal in two. Overall, 14 percent of the local rim sherds are decorated, and only 13 percent of the exported pots are similarly decorated. This latter finding is clearly at odds with the political model for conveyance but is consistent with either the subsistence or technological model.

Discussion and Conclusions

Five models for conveyance were evaluated for the movement of pots in the western Great Basin. Climatic data relative to spatial patterns in the distribution of conveyed pots, evaluated elsewhere (Eerkens 2011), had previously suggested that the "subsistence: residential move" model is most synchronous with the spatial direction in which pots were moved in prehistory. Specifically, pots were differentially conveyed between regions that were least similar in terms of climatic patterns and only rarely conveyed between regions with autocorrelated patterns in precipitation.

This study tested that hypothesis with independent data gathered from technological attributes on these same conveyed pots. The data presented here compared attributes of conveyed sherds to those in the same geochemical group that were not conveyed. The results are most at odds with the political model of conveyance. This result will not surprise anyone, given the sociopolitical organization of Great Basin groups and general lack of decoration on Great Basin brownwares.

Somewhat more surprising may be the lack of support for the technological models of conveyance. Based on interviews with ethnographic informants in the 1920s and 1930s, Steward (1933:

266) suggested that certain Paiute and Shoshone women, especially in Owens Valley, were special- ist potters. These women owned clay sources and sold or traded their goods across and outside the valley. The findings here, which are admittedly for the precontact rather than historic period, are not quite in line with Steward's reconstruc- tions (based on the memories of informants). Predictions from Steward's accounts would have exported and local pots more similar in design.

Instead, the sherd attribute and INAA data are most consistent with the subsistence conveyance models. It does not appear that pots were the vehicles to convey foods (the "subsistence: food transfer" model) but, instead, were conveyed as part of short-term residential movements to other regions. Whether these movements were due to local resource shortfall and a need for part of the group to split off and gather elsewhere or due to higher density or seasonally abundant resources elsewhere is unclear (i.e., push vs. pull). Likewise, if the latter, it is unclear whether food resources themselves were the pull or if some other factor, such as social aggregation or feasting, was responsible. Additional research is needed to address these different possibilities, for example, a detailed analysis of the site and depositional context of exported pots, which is beyond the scope of the present essay. Importantly (to me at least), this result failed to falsify the hypothesis I advanced in earlier research on the spatial distribution of conveyed pots (Eerkens 2011; Eerkens et al. 2002), which also suggested that pots were moved within the context of short-term residential movements.

In sum, pots in the Great Basin appear to have been conveyed, not as items of trade, per se, but within the context of short-term seasonal movements. Small groups of individuals appear to have occasionally set off in directions where climatic patterns were most different from local conditions. They appear to have selected a specific set of pots to take with them: those that were smaller and lighter in weight than the suite of vessels used in the homeland. While pots themselves were not objects of trade, what may have been traded was access to forage in foreign territories. Reciprocal access to territories that were relatively uncorrelated in precipitation would have been of great value to desert foragers trying to make a living in an unpredictable Great Basin landscape.

Finally, the model presented here attempts to go beyond merely documenting conveyance or interaction. Instead it attempts to evaluate particular motivations for moving goods. While it was applied to potsherds, it could easily be extended to other categories of material culture. I am confident that such analyses with obsidian bifaces or projectile points, or steatite beads, would lead to different patterns than that documented for pots. Such findings would likely show, as most of us certainly suspect, that conveyance is a multidimensional process. Different goods move through different systems, and such conveyance is motivated by different needs and desires (see Hughes, this volume; Hughes and Milliken 2007). Unfortunately, potting technologies have limited temporal depth in the Great Basin (ca. 700–800 years), but it would be especially interesting to study such processes over long time scales and compare them to changes in environment and population density. For now, such comparisons await future research.

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Note

1. Northern Owens Valley here collapses what Eerkens et al. (2002) separate into Central and Northern Owens Valley.

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