The Process of Migration in the Late Prehistoric Southwest

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Abstract

Greater understanding of migration behavior can provide southwestern archaeologists with new insights into prehistoric social dynamics. However, this requires reorienting the way in which archaeologists approach the study of migration. Migration is a process, not an event. Examination of migration studies in a number of related disciplines highlights several concepts crucial to understanding prehistoric migration behavior. Drawing on conceptions of scale, decisions involved in destination selection, and factors influencing the unit of migration, I argue that migration behavior has both a predictable structure and identifiable stages. Examination of the process of migration also requires that archaeologists broaden their temporal and regional frameworks. An initial attempt to do so is provided. Consideration of the southwestern archaeological record at a macro-regional scale between A.D. 1000-1400 in 50-year intervals permits an assessment of the scale and influence of migration in different archaeological districts. This analysis reveals the household as the primary unit of migration and suggests that long-distance migration is rare. Contending that the migration history of a district influences processes of community formation, population aggregation and nucleation, propositions regarding these social dynamics are discussed.

Migration and abandonment are topics that have interested archaeologists working in the Southwest since the late 1880s. Early efforts attempted to create direct historical reconstructions using a combination of archaeological sites and oral tradition (Cameron 1995; Ford et al. 1972; Longacre 1970:2-3). Interest in migration today remains focused on much the same issues: the identification of relationships between sites and groups of people through time and across the landscape. However, one distinct difference distinguishes early approaches to migration; earlier archaeologists viewed migration as a process that shaped the peoples whom they were trying to understand in the present. In contrast, more recent archaeologists have generally viewed migration as an event that occurred at different times in many places, and have not viewed migration as a formative process influencing local populations and social dynamics. They tend to focus on a narrow range of migration events, attempting to document "site-unit intrusions" or detrimental environmental conditions in an abandoned area and more "attractive" conditions elsewhere.

This chapter considers migration (and abandonment) as a process rather than an event. Fortunately, interest in migration has re-emerged as the process of abandonment has become a research focus. Cameron (1995) notes that migration is the logical "flip-side" of abandonment, and I argue that it can benefit from a similar processual appreciation.

The chapter is divided into three sections. I begin with a review of literature concerned with population movements derived from geography, demography, and sociology, each of which have developed concepts for understanding migration behavior at a variety of different scales. Drawing on discussions from these related fields, several observations regarding migration behavior and its underlying structure prove helpful for understanding the prehistoric Southwest. The critical variables appear to be the size of the migrating group (scale), the distance of the move, and the demographic history of both the departure and destination areas. Drawing on these variables, I propose an expected sequence of interrelationships among migration, demographic stability, and the formation of cohesive community identity.

The second section provides a review of demographic trends and population restructuring events across the Southwest from A.D. 1000-1400. Relying on both regional overviews and case studies, I have attempted to determine relative population densities and trajectories of change for 28 districts in the Mogollon Mountains, Colorado Plateau, and Rio Grande areas (Figure 2.1). This builds upon the recent attempt by Dean et al. (1994) to consider demographic fluctuations in relation to environmental factors. In discussing these patterns, concepts derived from the migration literature prove useful. The chapter concludes with an examination of the migration process, and how it has influenced southwestern developments.
MIGRATION IN ARCHAEOLOGY AND OTHER SOCIAL SCIENCES

Archaeology has contributed little to the study of migration recently. Thus, terminological and theoretical contributions from other fields are used here to create a framework for better understanding and more accurately discussing migration. This approach continues a trend found in other recent archaeological treatments (Anthony 1990; Cameron 1995; Clark 1994). Archaeological approaches, concepts, and potential misunderstandings are discussed as appropriate.

Although migration research has concentrated on modern populations, researchers in other disciplines are interested in determining why some individuals or groups opt to migrate and others do not. Cadwallader (1992:4) notes that "...an understanding of interregional migration is mandatory for anyone attempting to analyze the general process of regional change." The development of intellectual approaches in other disciplines parallels those of anthropology (Cadwallader 1992). There has been a shift in interest from causes to consequences (Berliner 1977:446), increased attention to the individual's role in the decision to migrate (DeJong and Gardner 1981), and a synthesis of approaches (Cadwallader 1992).

The applicability of modern studies to prehistoric situations may be questioned. Many would argue that modern migrations are the product of state-level organization and a capitalist world system having little or no relevance to pre-state conditions. In cases where migrations are the direct result of modern political hostilities or involve mass migrations (e.g., to the United States in the 1800s), parallels are clearly tenuous. Clark (1994; Clark and Lindly 1991) has rightfully questioned the applicability of modern analogs of massive population movements from European history to Pleistocene prehistory. I argue, however, that the sequence of decisions made by household groups considering migration, regardless of the stimulus, has a place in archaeological thought, although we must be cognizant of differences between modern motivations and those in the past.

Scale

The distinction between internal and external migration (Cadwallader 1992:4; Kershaw 1978:9) is useful for archaeological consideration. Internal migration refers to movement within a boundary, while external migration refers to movement across a boundary (Clarke 1972:130). Boundaries can be social, political, or physical. Internal and external migrations are conditioned by different processes and have different properties. Internal migration occurs among "habitually interacting" social groups located within a region (Anthony 1990:901). This more-or-less constant process is frequently associated with life cycle changes conditioned by cultural norms (e.g., marriage rules) and demographic factors (Harbison 1981:231; Hugo 1981).

From an archaeological perspective, these movements tend to be short-distance, frequent, and are not associated with major changes in material culture. Internal migration, also termed residential mobility, is a process that can be reflected in intra-regional settlement patterns involving short-lived habitations with overlapping components, creating gradual transitions in space through time. Archaeologists have viewed this type of migration processually for some time, attempting to understand the specific factors that influenced population stability or residential mobility during different periods (e.g., droughts, aggregation). I suggest this results from a focus on local areas, creating an artificial impression of migration as an "event" when it occurs between two districts.

External migration is a more complex process characterized by movement across a boundary, usually involving greater distances (Anthony 1990; Cadwallader 1992:4). Long-distance migration is a major decision that involves a series of stages prior to action (or inaction). There are two critical phases in migration: the decision to migrate and the selection of a destination (DeJong and Gardner 1981:2; Kershaw 1978). Several factors that influence the structure of long-distance migrations provide concepts that can be profitably employed by archaeologists. These can be divided into factors influencing the decision to migrate, selection of a destination, the structure of the migrating group, and processes associated with identity maintenance upon arrival at the destination. Among the latter, powerful insights may be gained through the study of migration as a process.

Deciding to Migrate

Traditionally, disciplines have approached migration from one of two levels. Macrolevel studies evaluate migration as aggregate behavior related to a causal variable, while microlevel analyses concentrate on the decision-making process at the level of individuals (Cadwallader 1992:4). Cadwallader (1992) suggests that each approach informs on different aspects of migration, and that both are important in its study. "Push/pull" models operate at the macrolevel, attempting to identify favorable conditions at a destination and deteriorating or unfavorable conditions at a source. Macrolevel processes identified as influencing individual decisions to migrate are subsistence organization and environment (Gardner 1981:69, 71). Archaeological considerations of macrolevel processes have focused on changes in environmental parameters (Ahlstrom et al. 1995; Dean et al. 1985, 1994; Euler et al. 1979; Orcutt 1991, 1993; Schlanger 1988).

While the initial decision to migrate is often related to macrolevel processes, these conditions are filtered through community and family dynamics (Dean et al. 1994; Harbison 1981; Hugo 1981). Those who opt to migrate do not represent a random cross section of the population. Younger members of a community are more likely to migrate (Harbison 1981:234), while elders have more established community responsibilities (DeJong and Fawcett...
Destination Selection

Micro-level approaches have identified sources of information, personal linkages, the structure of the decision-making group, and group size as critical variables in understanding individual decisions to migrate. The selection of a destination is the nexus of the interplay between macro- and micro-level processes. Information about potential destinations is collected and evaluated in a process that has termed "place utility." Information is critical: People simply do not migrate to a place about which they possess no information. The information collection and evaluation process is culturally and socially circumscribed. Construction of a cognitive map of potential destinations creates an evaluation dynamic that, in turn, prompts reevaluation of the conditions at the existing location.

Decisions and information sources reflect subjective perceptions, and thus do not operate as models of economic rationality or physical principles. The effects of absolute distance are distorted by patterns of long-distance contacts and information exchange. The manner in which information about potential destinations is collected provides clues to the structure we might expect migrations to take. Linkages are critical because "information about prospects must somehow compensate for the absence of personal experience." The information-gathering capacity of a potential migrant combines the direct experiences of the individual or group deciding to move with the cumulative experiences of other parties from whom information can be acquired.

Migrants living within the community and former community members who have relocated, constitute sources of information about circumscribed areas, introducing information/distance distortions. Initial migrants may be similar to what Anthony (1990:902) refers to as scouts, or may represent those with greater motivations for leaving. Once present, migrant connections within either newly founded or existing communities offer information, and an attractive destination for additional migrants.

Structure of the Migrating Group

The size and organizational structure of migrant groups is of critical importance to reconstructions of migration behavior. Of particular import is the relationship between the structure of decision making and the unit of movement. If decisions are decentralized, migrant group size should be larger and reflect planning. In instances where the relative size of the immigrant or emigrant group can be identified, this probably represents an accurate reflection of the decision making structure and integration of the community in which it was a part. Here, migration theory may assist in identifying decision making structure in prehistoric settings.

Migration can be a major source of social change. Migration causes turnover in social roles as those holding important positions or knowledge may leave, potentially making their replacement difficult. There may be rates of migration that can be absorbed or lost without major changes, but once exceeded, systemic change is required or unavoidable.

Certain other aspects of group structure condition migration behavior. Berliner's observation that "[m]igrating is like sinning, after you have done it once it is easier to do it again" is relevant. Those in the least favorable position with regard to land or other subsistence requirements are the most likely to migrate. If migrant groups enter an occupied area with permission, they may have been allotted less desirable lands, as at Hopi (James 1974; Schlegel 1992), and may be more likely to move again.

Identity Maintenance

Traditionally, documenting migration has required satisfaction of a stringent set of material requirements indicative of a "site-unit" intrusion. Traditionally, documenting migration has required satisfaction of a stringent set of material requirements indicative of a "site-unit" intrusion. (Haury 1958; Rouse 1981:30) and favorable social roles (Harbison 1981:234-241). Upon evaluation, established community members may choose to delay migration, or not to migrate (DeJong and Fawcett 1981). Access to critical subsistence resources, land tenure arrangements (Gardner 1981), and factional splits (Hugo 1981:204) differentially influence community members, generally inhibiting migration of the community as a whole.

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1958), though Reed (1958) commented on its rarity. Is such an expectation realistic? A key issue in the identification of migrant groups is what we should expect them to look like archaeologically.

Migrant group size and the composition of the surrounding community (migrant or indigenous) influence the extent to which a migrant group will maintain its original identity (Giles et al. 1977). If small family or extended family groups join existing communities, they are unlikely to express their identity in language (Anderson 1979:68; Giles et al. 1977; Williams 1979:57), let alone overt material culture. In most instances, assimilation or accommodation to the established group would be expected. Identity or ethnicity may be expressed in other forums (Giles et al. 1977; Kroskrity 1993).

For larger-scale group migration, the Hopi-Tewa case is instructive. The Tewa community moved to Hopi as a large group, yet they would be virtually indistinguishable archaeologically from the surrounding Hopi population. Only in language, history, and ceremony does this large migrant group preserve its identity; overt material culture does not differ (Kroskrity 1993). Language, technological style (isochrestism), and ritual performance are the most likely indicators of origin, but these are expected to be differentially continued depending on the size of the migrating unit. Material culture is likely to undergo substantial changes with migration (Beal 1987; Cordell 1979, 1989; Cordell et al. 1994). Perhaps colonization of an unoccupied area by a large, homogeneous group is the only situation in which we might expect visible overt material culture continuity. Instances where large groups joined existing populations may initially contain "intrusive" archaeological signatures, but they are expected to diminish with time, perhaps being archaeologically undetectable within a generation. Consequently, emphasis on "site-unit" intrusions will continue to divert archaeological understanding and identification of migration.

A Temporal Model of the Migration Process

This review suggests a regular process associated with migration that can be used to deduce a series of expected events. An initial stimulus or complex of stimuli to migration is expected. Density-dependent factors including inadequate integrative capacity, factionalism, hostilities, resource access inequities or environmental deterioration are likely to contribute to this decision. Destination selection results from evaluation of information about potential locations heavily influenced by preexisting internal and external relationships and conditions. Locations unrepresented in the search phase do not become destinations. The presence of related groups in potential destinations (former members or trade partners) biases information collection, and frequently results in a move to that area. The unit of movement reflects the decision making structure of the source population. In ethnographic and historic cases, this is most frequently a household consisting of a co- residing extended family. There may be some indices of origin encoded in material culture, but "site-unit" type signatures are not expected. The scale and tempo of migration may enhance stability or prompt systemic social change. Stable social formations organized at the community level are not expected in areas characterized by demographic flux.

DEMOGRAPHIC TRENDS AND MIGRATION IN THE PREHISTORIC SOUTHWEST

Within the Southwest, our understanding of dynamics within different regions, or districts, has progressed to a point that regional assessments are now possible (Adler [editor] 1996; Dean et al. 1994; Kintigh 1990; Schlanger 1988; cf. Nelson et al. 1994). To evaluate migration as a process, it is necessary to examine long-term demographic trends across the Southwest rather than concentrating on a specific location or time frame. Assessment of population dynamics at this scale permits consideration of relationships among districts and illustrates differences in the scale, timing, and by implication, the impacts of migration.

Data Sources

To create an overview of population trends at a scale encompassing most of the prehistoric Southwest, synthetic chapters, monographs, and case studies were consulted. To facilitate such an analysis, I have divided the Southwest into 28 districts (Figure 2.1, Table 2.1) and obtained information about basic population trends for each. District boundaries were created with reference to more-or-less internally coherent material culture inventories and definitions based on research histories and previous treatments. A greater diversity of sources was employed in constructing the demographic trajectories of the western and central districts because it is a literature with which I am more familiar, and it has seen more sustained research, permitting precise chronological subdivision and evaluation of suggestive migration trends.

The southern districts encompass much of the Mogollon area, and extend into the lower Rio Grande. Parts of this area are also characterized by well-developed chronologies, but are hampered by a lack of research or reporting. Concentration on excavation has hindered regional assessments. The Point of Pines locality (Haury 1989; Lowell 1991), the Grasshopper area (Reid 1989), and the Forestdale Valley (Haury 1985) have been extensively researched, while other areas have received limited attention. Similarly, the Reserve-Tularosa district has seen relatively little research given its size (Danson 1957; McGimsey 1980). This is especially evident to the east of the well-known Mimbres Valley (e.g., Blake et al. 1986), where both chronological precision and research coverage diminish. Recent research and overviews are beginning to provide a better understanding of this large area (Lekson 1989a, 1992a,
Disputes over chronology, adaptation, sedentism, population reconstructions and poor chronological resolution (e.g., Classic Mimbres 1000-1150) caution against absolute faith in the precise timing of trends (Carmichael 1985, 1990; Lekson 1989b; Whalen 1981, 1994).

The Rio Grande data lack the precision of many western districts. The low population densities between A.D. 900-1200 (Cordell 1979; Cordell et al. 1994; Crown et al. 1996) influence available information. Research on these earlier periods and systematic survey are lacking for much of the Rio Grande. Imprecise chronologies result from the use of non-local ceramic cross-dating (Cordell 1979). The trends discussed below assume that the relative dearth of early sites reflects an archaeological reality rather than a problem of pitstructure visibility. My lack of familiarity with the eastern data is undoubtedly evident in the discussion, and has resulted in reliance on overviews. The extremely rich Rio Grande record after A.D. 1300 also suffers from a lack of reporting and poor temporal resolution.

**Methodology**

Using information available for each district, a five-tiered ordinal scale of relative population density was constructed. As districts differ in absolute size and population density, the scale was applied to each independently, reflecting trends within the district. However, both the relative and absolute populations of adjacent districts were considered when assigning densities. Thus, while the population densities among regions are not directly comparable, they were not constructed entirely independently of each other. Specific references to documented or probable instances of migration, either within or between districts, were recorded to determine if they accord with population trajectories in adjacent regions.

Population density and settlement changes were recorded for each district beginning with A.D. 1000-1100 as a baseline, and then by 50-year intervals from A.D. 1100 to 1400. A shading density scale is used to illustrate population trends through time for each district, with darker shading indicating higher relative population densities. The scale includes: empty, low, moderate, medium-high, and high categories. "Empty" is used when a district has been abandoned or is effectively uninhabited. "Low" represents a situation where population is present and detectable, but is sparse relative to later developments or adjacent districts (e.g., Virgin Anasazi). "Moderate" is used for districts with a growing or declining population, and for regions that never achieved high populations even during their peaks. "Medium-high" is employed for districts containing abundant populations, either not at their peak or where peak populations were substantially lower than adjacent districts. "High" represents the district-specific periods of greatest density.

Using vague categories is a subjective enterprise, with imprecision related to both the source data and my evaluation of them. I have attempted to apply them consistently,
### Table 2.1. Sources Consulted for District Population Density Constructions

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### Table 2.2. Summary Population Densities by District

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**DENSITY KEY:** E=Empty, L=Low, M=Moderate, MH=Medium-High, H=High

however, and the resulting figures are meant to display general trends. The figures produce a visual record of trends in population movement, but also project an impression that densities were comparable in different districts. Northern Rio Grande districts never achieved the density of some western districts even though both are coded as "high" during some intervals. Absolute population estimates for many of the areas discussed here are presented by Dean et al. (1994) for comparison.

The references consulted in constructing densities for each district are presented in Table 2.1, while Table 2.2 summarizes this information by period for all districts. Those with personal knowledge of specific districts might modify my classification for any one period, but the relative trajectory for each should be a fair representation based on available information.

The timing of critical events in some districts is masked by the use of 50-year periods. Events in many western and central districts are dated to within a decade, while in others, they are assigned to periods lasting up to 200 years. At the scale of this presentation, the overall trends should be accurate. With additional research and reporting, corrections and refinements to this reconstruction are expected.
Figure 2.2. Population densities by district, A.D. 1000-1100.

Figure 2.3. Population densities by district, A.D. 1100-1150.
Figure 2.2. Population densities by district, A.D. 1000-1100.

Figure 2.3. Population densities by district, A.D. 1100-1150.
The Process of Migration in the Late Prehistoric Southwest

A.D. 1000-1100

Population density is evenly distributed over much of the southern and western districts during this period (Figure 2.2), primarily in dispersed roomblocks. High population densities characterize the Mimbres and the San Juan districts associated with development of the Classic Mimbres and Chacoan systems. Settlement densities are somewhat higher in the Zuni and Silver Creek (Hay Hollow Valley) districts, with intermediate densities in districts adjacent to the Mimbres and Chacoan developments. The northern Rio Grande contains little evidence of occupation except in the Cimarron area (Glassow 1980).

A.D. 1100-1150

Substantial continuity is reflected in this period (Figure 2.3), but apparent in situ population increases are evident in a number of districts. Again, densities in the Mimbres and Chacoan areas remain high, with the southern San Juan Basin reaching its maximum prehistoric occupation density. The Hay Hollow Valley population peaks, and continues to do so into the next period (Longacre in Martin et al. 1961, 1962, 1964; Plog 1974). Local increases in the areas corresponding approximately to the area known as Cibola (Zuni, Acoma, Upper Little Colorado, Reserve-Tularosa) were probably stimulated by proximity to the regional developments of Chaco and Mimbres. Northern Rio Grande populations remain at low densities.

A.D. 1150-1200

This period witnesses the "collapse" of the Mimbres and Chacoan systems and population restructuring (Figure 2.4). The Mimbres and Central Chaco districts are both characterized by population reductions with noticeable increases in adjacent districts such as the Puerco (of the West). These increases appear to result from migration. This trend is much more restricted in the north, with increases directional to the Mesa Verde (Northern San Juan) district. A more diffuse dispersion of population appears to occur in the areas around the Mimbres district, probably representing both migrants and in situ population increases (Nelson 1993). The Kayenta district, apparently never incorporated into the Chacoan sphere (Adams 1996), experiences minor increases that probably result from both declines in the Virgin Branch area and a ripple effect of some Mesa Verde (Northern San Juan) movements into its northern reaches. Environmental variation may contribute to these movements (Matson et al. 1988; Schlanger 1988). The Mesa Verde district may also receive influxes from the Virgin Branch and San Juan Basin districts (Varien et al. 1996). Increasing evidence of occupation along the Rio Grande is present, but populations remain at low densities (Cordell 1979).

A.D. 1200-1250

Population restructuring is evident within many of the western districts during this period (Figure 2.5). Al-
Figure 2.6. Population densities by district, A.D. 1250-1300.

1969; 1970). The areas adjacent to the Mogollon Rim, though characterized by intermediate densities, also witness the construction of planned communities, only some of which were plaza-oriented.

Initial construction of Pot Creek Pueblo near Taos indicates agglomerative growth (Crown 1991). The Santa Fe, Pecos, and Taos districts experience dramatic growth in pueblos that are extremely variable in terms of construction and assemblage composition (Cordell 1979). Initial occupation of the Chama may have occurred towards the end of this interval (Crown et al. 1996). The Northern San Juan-Mesa Verde district experiences population declines characterized by emigration of small groups (Lipe 1992, 1995) at the beginning of this period, if not earlier (Ahlstrom et al. 1995). By the end of this period, and possibly beginning as early as A.D. 1280, the Mesa Verde region is abandoned (Varien et al. 1996).

A.D. 1300-1350

During this interval, the most dramatic population shifts in the prehistoric Southwest are evident (Figure 2.7). A fundamental division between east and west emerges as most central districts are abandoned, and populations within regions become more spatially restricted (Kintigh 1990). The abandonment of the Mesa Verde area appears to be the only instance where immediately adjacent districts are not the recipients of migrants, suggesting long-distance movement (see Adams, this volume). In the west, all populations lived in nucleated pueblos (Kintigh 1990, cf. Upham 1982, 1984). Additional population movement into the Grasshopper region occurs at about A.D. 1300 (Reid 1989). About A.D. 1325, population reorganization within the Silver Creek, Upper Little Colorado, Zuni and Middle Little Colorado districts is evident as many nucleated settlements are abandoned and resettled in other areas of the same district (Duff 1996). Acoma is shaded as medium-high density during this period because it appears to have experienced substantial emigration to the east and apparently contains only Acoma at this time (Dittert 1959; Ruppé 1990). Additional nucleated pueblo sites may be present in the Acoma area, though many may be towards the eastern edges of the district (Roney 1996).

Rio Grande districts witness additional population influxes and construction increases. The Gallina and Cimarron districts are completely abandoned (Beal 1987; Cordell 1979; Crown et al. 1996; Glassow 1980), contributing to local increases in northern Rio Grande districts. Another influx of population has been documented for the Pajarito Plateau, possibly occurring as early as the A.D. 1290s (Orcutt 1993), but the Pajarito population begins declining by A.D. 1350 (Orcutt 1991, 1993; Crown et al. 1996). Information from the Jemez district suggests population increase at this time (Crown et al. 1996), and Cordell notes possible ceramic continuities with Gallina traits.
Figure 2.7. Population densities by district, A.D. 1300-1350.

Figure 2.8. Population densities by district, A.D. 1350-1400.
(1989:316). At least three relatively small pueblos are founded in the Chama (Beal 1987), and additional small roomblocks are likely. The Rio Abajo experiences a "sevenfold" population increase (Marshall and Walt 1984:134), and there is some evidence for large "site-unit" intrusions in the vicinity (Roney 1995). Increased building activity at Pot Creek Pueblo is attributed to immigration (Crown 1991:307), and the construction of Arroyo Hondo (Habicht-Mauche 1993:5) apparently represents migrant founding. The Salinas, Galisteo, Pecos, and Albuquerque districts all experience increases, but the scale of influxes was not as dramatic.

A.D. 1350-1400

Trends evident in the previous period continue into the A.D. 1350-1400 interval (Figure 2.8). In the west, population reduction and abandonment of most regions appear to be complete between A.D. 1385-1400 (Adams 1996; Duff 1995, 1996; Duff and Kinigh 1993; Kintigh 1990, 1996; Reid 1989). Point of Pines may have persisted slightly beyond the A.D. 1400 threshold (Haury 1989:117-118; Reid 1989). The Tonto Basin and the Verde River drainage (Pilles 1996:64-65, 69), not part of this reconstruction, do not appear to witness dramatic population influxes from these western districts. The existing population centers of the Hopi and Zuni districts contain no obvious evidence of immigrant arrivals, though some increases around A.D. 1400 are evident. However, migrant population totals were probably low enough to have been incorporated into multiple Hopi and Zuni villages without creating substantial change, and some western migrant groups probably joined populations in the Rio Grande.

Rio Grande districts experience continued growth, with aggregation occurring in districts that lacked dense aggregates in the previous period. The Chama, in particular, witnesses intensive occupation and settlement construction shifting from several relatively small pueblos to truly massive pueblos (Beal 1987; Crown et al. 1996). Pajarito Plateau densities continue to decline, providing source populations for the Chama and other northern districts. In a significant development, some towns appear to move as communities in contrast to the trend from earlier periods. Pueblos in the Santa Fe (Crown et al. 1996), Galisteo, Salinas and (possibly) Pecos districts potentially indicate foundation by migrant communities.

Post A.D. 1400

This period displays the outcome of population consolidation in the west (Figure 2.9), and brings to a close the trends examined here. Problems with accurately assigning dates to pueblos occupied beyond A.D. 1400 in the Rio Grande preclude my extension of these trends. It also represents the culmination of what I see to be the critical periods for understanding the process of migration.
GROUP SIZE AND THE MIGRATION PROCESS

Although the settlement histories of southwestern districts differ, a consistent pattern of migration, aggregation, and communal moves is present for both Eastern and Western Pueblo areas. The dynamic and continuous movement of groups illustrates the utility of examining migration as a process rather than as an event.

In both modern and traditional societies, the basic unit of migration and decision making is the household (Neuberger 1977). Households, or multi-household groups (e.g., Rocek 1995), probably represent the most common decision making and migrant unit in Pueblo prehistory. In the west, evidence for movement is household or multi-household based for the Grasshopper region (Reid 1989; Zedeño 1994), Zuni until Pueblo IV (Kintigh 1996), the Hopi area (Adams 1996), and the Kayenta district (Dean 1970).

The southern Mogollon and Rio Grande, San Juan Basin, and Chaco districts follow a similar pattern. Low-level decision making entities, possibly multiple households or lineages, are the unit of migration into and out of Pueblo III communities in the Mesa Verde (Lipe 1992, 1995) and Rio Abajo (Marshall and Walt 1984) areas. Roney (1995) notes, however, instances in which groups occupying up to 100 rooms in several roomblocks arrived together. Initial migration into the Pajarito Plateau, northern Rio Grande, Albuquerque, eastern Mimbres, and Rio Abajo apparently involved household or extended family groups, which primarily constructed masonry roomblocks with fewer than 20 rooms.

Although they represent significant overall distances and relocations over the entire 400-year period under consideration, migrations appear to have occurred primarily within districts or among adjacent territories.

Exchange is one means of acquiring information prior to such moves that can be detected in the archaeological record. Unstructured moves by relatively small groups within and between regions is reflected in the ceramic exchange that is evident in most western and southern districts. The Albuquerque, Salinas, Rio Abajo, and northern Rio Grande districts appear to have been involved in exchange relationships with western groups even when the Rio Grande districts were characterized by low population densities (e.g., the widespread reporting of Wingate and/or St. Johns Polychrome sherds, ca. A.D. 1100-1300). The first roomblock migrants into the Rio Grande area probably derive from regions which had previous exchange relationships with Rio Grande groups, providing the information about this area as a potential destination. Stylistic homogeneity and exchange within the northern Rio Grande after A.D. 1200 suggests an open interaction network among migrant groups (Habicht-Mauche 1993, 1995).

Sufficient material and technological traits indicative of group origins are present, in particular, the use of above-ground, contiguous, multiroom masonry pueblos. I contend that the sources of the majority of these migrant households are the areas to the west - the Northern San Juan Basin, Gallina, Acoma, Reserve-Tularosa, and Mimbres districts. Movement into the Rio Grande is gradual, and also initiated by small groups. Perhaps, through return visits and information exchanges, migration streams from specific regions emerged.

The abandonment of the Mesa Verde area is the exception to this pattern. Long-distance movement, possibly as communities, is suggested. This pattern, however, may not be as inconsistent as it seems, as Mesa Verde sites in the late 1200s contain indications of both household autonomy and communal identity.

Many of the late Pueblo III sites in the Mesa Verde region experience continuous cutting episodes until about A.D. 1280, with abandonment thought to follow soon after (Varien et al. 1996). In the interval between A.D. 1250-1280+, occupation consists of highly concentrated household architecture within aggregated or nucleated communities (e.g., Sand Canyon, Bradley 1992), but there continue to be dispersed households in the areas around these focal settlements (Varien et al. 1996). Within these large sites, architectural blocks (Bradley 1992) which probably represent extended household groups are recognizable. The construction, occupation, and abandonment histories of particular architectural blocks are not uniform, and it is clear that not all architectural blocks were occupied during the final abandonment of the region. Evidence of communal planning of architectural features, such as enclosing walls and kiva complexes, characterizes many of these sites (Varien et al. 1996).

I suggest that since not all household groups were architecturally integrated into large communities, and since there are differential abandonment trajectories for structures within these late sites, it is probable that early departures from the Mesa Verde region were at the household or multi-household level. These departures may have been to adjacent districts such as the Gallina, Chama, and possibly even Jemez (Cordell 1979).

With overall local population density quite high in the Mesa Verde region, interaction appears to have been primarily concentrated within this district. That is, late 1200s sites in the Mesa Verde region did not participate in the regional exchange network that characterizes much of southern Plateau and Mogollon Rim areas (e.g., involving shell, White Mountain Redware, Tsegi Orange Ware; Varien et al. 1996). If the Mesa Verde region was relatively isolated from interaction and exchange spheres during this period, most members of the population may not have had the personal ties and information necessary to relocate to other regions. However, early departures by smaller groups who may have settled into districts in the northern Rio Grande (or elsewhere) could have created the information and migration streams that would facilitate later, larger-scale movements. To some degree, these later communal moves may represent "leapfrogging" (Anthony 1990:902), if unreceptive intervening destinations required Mesa Verde
emigrants to settle in largely unoccupied districts of the Rio Grande which were further away.

The convincing reconstructions of the settlement histories of the Tsegi Canyon sites Betatakin and Kiet Siel (Dean 1969, 1970, 1978) are also both consistent with the model, despite the rapid construction of Betatakin. Kiet Siel typifies the migration model outlined above. Founded in the late 1240s, additional room clusters were added and remodeled through the 1280s. This prompted Dean to state: "Kiet Siel grew by the undirected accretion of relatively independent household units that seem to have come and gone without reference to the behavior of other households" (1978:156). Although Betatakin was ultimately settled by a group acting cooperatively, its earlier history is consistent with small-scale migration. The Betatakin shelter was sporadically utilized in the 1250s as indicated by a few structures. In 1267, two or three households appear to have taken up residence followed by another in 1268. Dean argues that the location was selected by groups familiar with the area (1969:82). Apparently expecting additional households to join the group, a number of construction timbers were procured and stockpiled until 1275, when numerous additional household clusters were added rapidly. Dean notes that the initial settlers may have been a "vanguard" group preparing the location for a larger group (1969:75).

The Tsegi Canyon sites illustrate several points. First, initial movement into a settlement or locality consists of a relatively small number of household groups. These groups, probably through direct contact, communicate information to other households potentially interested in relocating. Both sites are joined by additional households within a decade or so of founding. This suggests that the decision to migrate, at whatever scale, is a thoroughly researched and considered decision planned well in advance. Whether the migrant groups are individual households, or a number of households apparently relocating communally, initial household groups represent the founding occupants.

Community migration occurred rarely, and primarily within a district. This pattern first appears at Zuni, where several nucleated pueblos were founded in the mid-to-late 1200s (Kintigh 1985). Although most of these nucleated pueblos appear to represent consolidation of local populations, some may have been the result of communal moves within the Zuni district. This suggests that higher-level decision making structures had been created within aggregated Pueblo III communities. The Zuni district does not appear to have been a recipient of external migrants, creating an internally stable population dynamic beginning to organize beyond the household level.

Homol' ovi II represents a communal move and population consolidation at around A.D. 1330 (Adams 1996). The occupants of Homol' ovi II apparently came from the Hopi Mesas where population stability and nucleated construction occurred slightly earlier than in the Homol' ovi area. At both Zuni and Homol' ovi, planned pueblos of several hundred rooms resulted. A similar pattern occurs in the Rio Abajo after A.D. 1300, though most sites thought to date to the fourteenth century are smaller than the Hopi and Zuni examples, containing fewer than 150 rooms (Marshall and Walt 1984:137).

All areas in which internal, communal-scale moves occurred had experienced population aggregation in previous periods. In the Zuni and Hopi regions, this trend was established between A.D. 1175/1200-1250. Comparable developments characterize the Reserve-Tularosa district. Development of decision making structures above the level of household within these aggregated communities may have been an organizational change stimulated by internal population migrations. Once developed, these structures facilitated large-scale movement and planned construction upon arrival when aggregated communities decided to migrate or nucleate. In all instances of communal moves, migration was to an area with a preexisting population either originating from the area of the migrating community or with whom interaction occurred. Districts characterized by unsettled migration histories at this time, such as those in the Rio Grande, do not experience communal-scale population movements. In fact, most experience continued immigration from external sources.

This brings us to a consideration of processes in the eastern districts. In the Rio Abajo, initial migrants appear to have been household or multi-household groups. Around A.D. 1300, arrival of migrant groups may have been on a larger scale. They probably represent movement of communities from the Reserve-Tularosa and upper Rio Puerco areas which existed as smaller (ca. 100-200 rooms) aggregated or nucleated settlements (McGimsey 1980; Roney 1995). In the Albuquerque and northern Rio Grande districts, populations arrived as household or multihousehold groups, but the source areas from which they came appear not to have had cohesive or durable decision making structures above the household level. That is to say, populations arrived in these districts from areas which were beginning to aggregate but which had not yet (or impermanently) organized decision making beyond the household. Aggregation appears to have occurred within the northern and middle Rio Grande districts (Crown 1991; Orcutt 1991, 1993). The northern Rio Grande equivalent of settlement nucleation and community movement appears to occur in the mid 1300s with the founding of large, planned communities.

Additional community-level movements may be evident in the Chama, Salinas, Galisteo, Pecos and Rio Abajo districts after A.D. 1350. I suggest these represent community moves from within the Rio Grande that were possible because aggregated community structure had developed mechanisms for facilitating decisions above the household level. When this development occurred (ca. A.D. 1340), planned pueblo construction events and community movements become evident. I maintain that this occurs only after large-scale external migrations have ceased, and internal dynamics (within districts or between adjacent districts) become the structuring forces. The interval between
the abandonment of the Mesa Verde (ca. A.D. 1285-1300) and single-event, nucleated constructions in the Rio Grande (ca. A.D. 1340) suggests a period of one-to-two human generations may be required to create a stable local social environment conducive to communal identity construction and communal action.

CONCLUSION

Migration is best conceived of as a process with several predictable and potentially identifiable stages. In presenting a summary model of migration stages and demographic trends from across the Southwest, I have demonstrated that concepts and stages derived from migration studies have a place in the archaeological study of migration. They provide the basis for an initial formulation of the interplay between the processes of aggregation, nucleation, and migration. I suggest that aspects of migration behavior and structure can inform us about the timing of organizational developments in the prehistoric Southwest. The timing of community-level decision making cohesive enough to facilitate community migration differs across districts, and appears to have developed earlier in the west. Similar developments in eastern districts occurred after migration into the region had stabilized. I suggest that most community-level moves witnessed in the Rio Grande districts primarily reflect movement of communities that developed within Rio Grande districts, and that communities infrequently migrated from neighboring Plateau areas.

The appreciation of migration as a process has been hampered by archaeological concentration on single localities or districts. Evaluation of migration requires a scale of analysis above the site or local district. During the later periods of Pueblo prehistory, organizational developments encompass vast areas. The study of migration requires us to think on a comparable scale. The interplay between district-specific research and regional dynamics is central to continued investigation of migration. Even abandonments that appear to us as "events" based on our temporal resolution, such as that of Mesa Verde, benefit from being recast as processes. Appreciation of these parameters can provide additional insights to district-specific research.

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Endnote

1 Mark Varien suggested this possibility.
REFERENCES CITED

Adams, E.C.

Adler, M.A. (editor)

Adler, M.A., and M.D. Varien

Ahlstrom, R.V.N., C.R. Van West, and J.S. Dean

Anderson, A.B.

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Beeson, W.J.

Berliner, J. S.

Blake, M., S.A. LeBlanc, and P.E. Minnis

Bradley, B.A.

Breternitz, D.A.


Burton, J.F.

Cadwallader, M.

Cameron, C.

Caperton, T.J.

Carmichael, D.L.


Clark, G.A.

Clark, G.A., and J.M. Lindly
Clarke, J.I.

Cordell, L.S.

Cordell, L.S., D.E. Doyel, and K.W. Kintigh

Crown, P.L.

Dean, J.S.
1969 Chronological Analysis of Tsegi Phase Sites in Northeastern Arizona. Tucson: University of Arizona Papers of the Laboratory of Tree-Ring Research, No. 3.

Dean, J.S., R.C. Euler, G.J. Gumerman, F. Plog, R.H. Hevly, and T.N.V. Karlstrom

Dean, J.S., W.H. Doelle, and J.D. Orcutt

Dean, J.S., A.I. Lindsay Jr., and W.J. Robinson

De Jong, G.F., and J.T. Fawcett

Duff, A.I.
1995 Local Social Organization and Regional Interaction in the Upper Little Colorado River Region during the Pueblo IV Period (A.D. 1275-1400). Washington: National Science Foundation dissertation improvement grant (also available from author).

Duff, A.I., and K.W. Kintigh

Euler, R.C., G.J. Gumerman, T.N.V. Karlstrom, J.S. Dean, and R.H. Hevly

Fletcher, T.
1994 Archaeological synthesis. In Archaeological Data Recovery Excavations at the Sanders Great House and Six Other Sites along Highway 191 South of Sanders, Apache County, Arizona (T.

Ford, R.I., A.H. Schroeder, and S.L. Peckham

Gardner, R.W.

Giles, H., R.Y. Bourhis, and D.M. Taylor

Glassow, M.A.

Graves, M.W., S.J. Holbrook, and W.A. Longacre

Green, E.L.
1976 Valdez Phase Occupation near Taos, New Mexico. Dallas: Fort Burgwin Research Center, Southern Methodist University.

Gumerman, G.J., and J.S. Dean

Gumerman, G.J., and A.P. Olson

Habicht-Mauche, J.A.


Harbison, S.F.

Haury, E.W.


Haury, E.W., and L.L. Hargrave

Hayes, A.C.

Hugo, G.J.

James, H.C.

Judge, J.W.

Kershaw, A.C.

Kidder, A.V.

Kintigh, K.W.
1985 Settlement, Subsistence, and Society in Late Zuni Prehistory. Tucson: Anthropological Papers of the University of Arizona No. 44.

Kintigh, K.W., and A.I. Duff

Kroskrity, P.V.

Larson, D.O., and J. Michaelson

LeBlanc, S.A.

Lekson, S.H.

Lightfoot, K.G.

Lipe, W.D.

Longacre, W.A.

Lowell, J.C.
1991 Prehistoric Households at Turkey Creek Pueblo, Arizona. Tucson: Anthropological Papers of the University of Arizona No. 54.

Marshall, M.P., and H.J. Walt

Martin, P.S., J.B. Rinaldo, and W.A. Longacre

Martin, P.S., J.B. Rinaldo, W.A. Longacre, C. Cronin, L.G. Freeman (Jr.), and J. Schoenwetter
The Process of Migration in the Late Prehistoric Southwest

Martin, P.S., J.B. Rinaldo, W.A. Longacre, L.G. Freeman (Jr.), J.A. Brown, R.H. Hevly, and M.E. Cooley
1964 *Chapters in the Prehistory of Eastern Arizona, II.* Chicago: Fieldiana Anthropology 55.

Matson, R.G., W.D. Lipe, and W.R. Haase IV

McGimsey, C.R. III

Nelson, B.A., T.A. Kohler, and K.W. Kintigh

Nelson, M.C.

Neuberger, E.

O’Laughlin, T.C.

Oakes, Y.R.
1979 *Excavations at Deadman’s Curve, Tijeras Canyon, Bernalillo County, New Mexico.* Santa Fe: Laboratory of Anthropology Note 137.

Orcutt, J.D.

Peckham, S.

Pilles, P.J. (Jr.)

Plog, F.

Powers, R.P., W.B. Gillespie, and S.H. Lekson

Rafferty, K.

Reed, E.K.

Reid, J.J.

Rociek, T.R.

Rohn, A.H.
Roney, J.R.


Rouse, I.

Ruppe, R.J. (Jr.)

Schlanger, S.H.

Schlegel, A.

Spielmann, K.A.

Spoerl, P.M.

Stuart, D.E., and R.P. Gauthier
1984 *Prehistoric New Mexico, Background for Survey.* Albuquerque: New Mexico Archaeological Council.

Upham, S.


Varien, M.D., W.D. Lipe, M.A. Adler, I.M. Thompson, and B.A. Bradley

Wasley, W.W.

Watson, P.J., S.A. LeBlanc, and C.L. Redman

Weaver, D.E. (Jr.)

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MIGRATION AND REORGANIZATION: THE PUEBLO IV PERIOD IN THE AMERICAN SOUTHWEST

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