

ECOLOGY OF ETHNIC INTERACTIONS IN NEW MEXICO, 1700 – 1850

William S. Abruzzi*

This paper offers an ecological explanation for the outcome of ethnic interactions in New Mexico between 1700 and 1850, the years when New Mexico was under Spanish (and later Mexican) administration. It focuses on the arrival and extension of two peoples --the Spanish and the Comanche-- and the effect that their respective expansions had on ethnic relations in the region. Although a sharp contrast existed between the mechanisms by which the Spanish expanded into Pueblo territory and the Comanche expanded against the Apache, both achieved the same result: excluding a less dominant competitor from access to and control of critical resources. The paper suggests that the resulting Spanish-Comanche Alliance evolved as the historical successor to the earlier Pueblo-Plains Trading System which prevailed during the Protohistoric Period. The paper also argues that the successive emergence of these two distinct ethnically-based, multi-habitat resource-redistribution systems in the same territory underscores the ecological basis of historical ethnic relations in the region.

Key Words: *ecology, New Mexico, ethnic interactions*

Background

When Spanish explorers first arrived in New Mexico during the mid-to-late 16th century, they encountered two distinct indigenous populations: Pueblo Indians living in compact agricultural villages along the Rio Grande and its tributaries, and small isolated groups of semi-nomadic Apache

Indians inhabiting the vast open grasslands east of the Rio Grande Valley. The Spanish were greatly impressed by the nature and extent of the trading system that linked Pueblo and Apachean populations and economies. The Apache traded buffalo meat, hides, suet, tallow, salt, tobacco and additional products of the southern plains, for cotton blankets, pottery, corn, beans, squash and other goods produced along the Rio Grande (see Worcester 1941b; Ford 1942; Kenner 1969:8-12; Snow 1981:367). So extensive was the trade that even individuals in the westernmost Hopi and Zuni villages wore buffalo robes and ate substantial quantities of buffalo meat (Kenner 1969:11), despite the absence of a single reference in the Spanish records to any Pueblo hunting expeditions (Gunnerson 1956:351).

The Pueblo-Apache trading system developed out of a growing interdependence between Pueblo and Plains populations over a period of nearly 500 years. As population increased in the Southwestern plains between AD 1,000 and 1600, an extensive system of trade evolved between Anasazi agriculturalists practicing irrigated farming along the Rio Grande River in northern New Mexico and indigenous mixed farming populations inhabiting the isolated river valleys of the Southwestern plains (see Abruzzi 2003). This trade remained a minor component of the adaptive strategy of local populations in each group, however, due to the limited size of the Plains population and the negligible competition that this produced between plains and river valley economies. Conditions changed, however, during the 15th and 16th centuries with the advent of Athapascan (Apache) immigration, whose population size quickly exceeded by several times that of all previous groups.

Due to their increasing numbers, their greater mobility and their superior hunting efficiency, the newly arrived Apache

* Muhlenber College, Allentown, PA. 18104

presented the indigenous Pueblo agriculturalists with formidable competition. As a result, Pueblo hunting declined and Pueblo-Apache trade increased. At the same time, pre-existing hunter-gatherer populations in eastern New Mexico disappeared from the archaeological record (Abruzzi 2003). I suggested that the *Competitive Exclusion Principle* from general ecology accounted for both the evolving interdependence of Pueblo and Plains peoples and the replacement of indigenous plains peoples by the Apache.

According to the *Competitive Exclusion Principle*, when two populations are complete competitors and one is dominant over the entire niche, the less efficient competitor will be eliminated from the arena of competition and *complete exclusion* will occur (see Gause 1934; Hardin 1960). This rule describes in ecological terms how the Apache came to replace the indigenous plains peoples who inhabited eastern New Mexico and Western Texas prior to their arrival in the region.

Alternatively, where two potentially competing populations vary in their relative competitiveness in different portions of the niche, complete exclusion may not occur. *Resource partitioning* may occur instead in which each population comes to occupy a more restricted portion of their niche where the two populations occupy the same territory (cf. Crombie 1947; Brown and Wilson 1956; Boughey 1973:90-91). Exclusion may occur through either *exploitation* and/or *interference* (see Miller 1969). Exclusion through *exploitation* occurs when competing individuals have free access to a limiting resource and the outcome of their competition is determined by each individual's relative ability to exploit the contested resource efficiently. *Interference* occurs, on the other hand, when one

competitor prevents another competitor's access to the resource in question.

Spanish Colonization

Spanish colonial policy undermined the Pueblo-Apache trading system by draining off much of the resources needed to sustain it. Not only did the Spanish try (unsuccessfully) to control the trade, but throughout the first century of Spanish colonization the Spanish population subsisted largely by expropriating food and other resources from the various pueblos it had conquered. This practice reduced not only the resources available for Pueblo subsistence but also what could be traded with the Apache. Consequently, after a series of devastating droughts during the 1670s, the Pueblo and Apache joined together to expel the Spanish in what has become known as the Pueblo Revolt of 1680, but which Forbes (1960) regarded more broadly as "The Great Southwestern Revolt".

The Spanish reconquered New Mexico 12 years later. However, while the Spanish reestablished their control over the Pueblo, they were never able to extend that control to the Apache and had to contend with frequent Apache raids upon their communities. By the early 18th century, however, peaceful conditions had finally returned to New Mexico. Apache raiding had subsided, and generally stable relations had evolved among the Spanish, Pueblo and Apache based on the resumption of the Valley-Plains trade (Kenner 1969:23-27). Peaceful relations were not achieved through Spanish control of the trade, as previously attempted, but rather through Spanish participation in the trade as the dominant valley population. Although the Spanish dominated the Pueblo, the Apache remained beyond their control. As the Pueblo had done previously, the Spanish merely accommodated themselves to the

Apache as participants in a mutually advantageous and ecologically adaptive multi-ethnic trading system.

The Comanche

Just as peace and stability had returned to New Mexico, a new disturbing element entered the region: the Comanche. Forced from the northern plains by other nomadic groups (Secoy 1953), large numbers of Comanche began migrating into eastern New Mexico, lured in part by their desire to obtain Spanish horses and trade goods.

The Comanche first appeared at Taos in 1705 (Kenner 1969:28). Although initial contacts were largely peaceful, raiding soon increased. The Comanche quickly began to attack Apache villages and within a quarter century had driven the Apache out of most of their northern territories (Secoy 1953:30). The Apache were forced to move southwestward, creating a chain reaction of ethnic interactions. The eastern Apache fled westward to join the Jicarilla and other Apachean peoples, while other displaced Apache began to raid Spanish towns and settlements throughout southern Arizona and New Mexico, as well as in Sonora and Chihuahua states in northern Mexico.

The Comanche soon began raiding Spanish and Pueblo settlements as well. Comanche raiding intensified after 1740 (Kenner 1969:11) and became especially fierce during the 1770s and 1780s, a period of deteriorating regional climatic conditions (see Kenner 1969:48-49; Fritz 1965). Comanche raiders killed 150 Pueblo Indians at Pecos between 1744 and 1749, forced Spanish settlers at Ojo Caliente to abandon their homes in 1768, compelled those settlers living near Taos to seek refuge inside the pueblo village, and ran off most of the livestock at Sandia pueblo in 1775. In 1777, they killed 23 individuals at Valencia, 8 at Taos, 14 at Isleta and many others elsewhere. And in 1778 Comanche raiders

either killed or captured a total of 127 Spanish settlers and Pueblo Indians.

Due to Comanche raids, normal village life was disrupted throughout much of New Mexico, particularly in those towns and villages situated along the eastern margin of the Rio Grande. Irrigated fields could not be tended at Pecos because it was "so constantly besieged", while crops planted in the small dry-land fields immediately under the Pueblo walls failed because of the lack of rain. The same combined effect of drought and Comanche raiding forced villagers at Galisteo to beg for food in Spanish towns, as well as among other Pueblo villages. Those who remained at Galisteo survived by eating "the hides of cows, oxen and horses" and by "toasting old shoes." Drought and Comanche raiding caused population to decline throughout the eastern frontier communities. Galisteo witnessed a 50% decrease in population between 1760 and 1776, while Pecos' population declined from 446 to only 269 during the same time period.

Although Comanche-Spanish relations had become increasingly hostile during much of the 18th century, both groups eventually signed a peace treaty in 1786 which initiated nearly a century of peaceful coexistence, trade, and economic, political and military cooperation (Kenner 1969:40-97; August 1981). During this period, Spanish-Comanche interdependence steadily deepened as the alliance between the two peoples played an increasingly dominant role in their respective economies and societies. The treaty lasted from 1786 until 1846, when New Mexico came under U.S. jurisdiction.

Trade with the Comanche became a central feature of the New Mexican economy. Annual fairs were held at various pueblos during the summer and fall, the largest of which was held at Taos. So important was the Taos fair that it was

placed under the jurisdiction of the District Alcalde and scheduled to occur immediately preceding the departure of the annual trading caravan to Chihuahua (Simmons 1979:190). Furthermore, while the Comanche had sufficient power to devastate the Spanish and Pueblo, they chose to obtain Spanish and Pueblo goods through trade instead. As early as 1760, the Comanche were even selling horses and firearms stolen elsewhere to the Spanish. In addition, the Comanche provided the Spanish with military support against both internal rebellions and external attacks (see John 1984). So important did the alliance become that it weathered both extended periods of environmental deterioration and attempts by Anglo traders to undermine it (*ibid.*). Eventually, the Spanish-Comanche alliance evolved even greater stability than that displayed by Pueblo-Apache interdependence.

Expansion of the Spanish Population

The achievement of peace between the Spanish and the Comanche and the return of stable ethnic relations initiated a period of unprecedented growth and expansion of the Spanish population in New Mexico. Whereas in 1680, there were less than 2,400 Spaniards in New Mexico, by 1790 there were 4 towns with over 2,000 Spaniards each (Dozier 1970:86). At the same time, the Spanish population had quadrupled between 1750 and 1800 (*ibid.*). Totalling some 20,000 individuals in 1800, the Spanish population further increased to about 40,000 in 1840 and nearly 80,000 in 1880 (Dozier 1970:91; Table 1).

Due to increasing population pressure, Spanish settlements expanded throughout most of the Rio Grande Valley by 1800 and had already begun to appear in the river valleys radiating east and west of the Rio Grande (Meinig 1971:27-35). Although most of the Spanish population in 1840 still lived within a 50-mile radius of Santa Fe

(see Leonard 1943:31), Spanish settlement had by mid-century expanded into Colorado, Mexico, Arizona and Texas (see Knowlton 1961:450; Gonzalez 1969:6-7; Paul 1971:48).

Although Spanish settlements were founded as far west as the Little Colorado River Basin in eastern Arizona (see Abruzzi 1993), the principal direction of Spanish expansion was east of the Rio Grande Valley (Meinig 1971:30-31). The eastward thrust of Spanish expansion resulted largely from the combined effect of the Comanche peace, the growing importance of the Comanche trade, and the increasing prominence of sheep raising in the Spanish economy. Spanish subsistence during the 18th century was based largely upon irrigated farming in river valleys, supplemented by sheepherding on adjacent hillsides (Beck 1962:99). However, as early as 1900, sheepherding had surpassed farming as the mainstay of the Spanish economy. By 1840 some 1.5 million sheep existed in New Mexico, a number which increased to nearly 4 million by 1880.

As sheepherding became more important, Spanish settlement spread beyond the small mountain valleys adjacent to the Rio Grande and extended deep into the plains of eastern New Mexico. As early as 1794, for the first time in nearly 500 years, Pecos ceased to be the easternmost extension of Rio Grande settlement (Kenner 1969:63). By the mid-19th century, Spanish sheepherders, followed by Spanish settlements, had penetrated the Llano Estacado (Gonzalez 1969:6-8). Spanish territorial expansion continued unabated throughout the century and was only halted by an equally vibrant Anglo-American immigration, beginning in the 1870s, from Texas, Utah and the Mid-West.

The centrifugal expansion of Spanish settlement in New Mexico occurred largely through the issuing of land grants by

Spanish (and later Mexican) authorities. During the initial colonization, land grants were issued primarily to individuals as a reward or inducement for their participation. Following the reconquest, however, the Spanish population became directly involved in agriculture, and grants were issued primarily to groups of families for the purpose of settling specific basins (Kutsche et al. 1976:13). Grants included rights to farming plots, which were individually owned, and to water and pasture land, which belonged to the community. Pasture land generally constituted the largest portion of land grants. As population on a specific land grant increased and available agricultural lands became scarce, subsequent grants were issued to a portion of the families occupying the original grant (Carlson 1975:97). In this manner, existing settlements “spilled over” into adjacent microbasins and eventually expanded throughout entire drainage systems.

Pueblo Population Decline

The dramatic growth and expansion of the Spanish population in New Mexico occurred in conjunction with a sharp decline in both the size of the Pueblo population and the spatial distribution of Pueblo settlements. While the Spanish population increased from little more than 2,000 following the Pueblo Revolt to nearly 19,000 by 1800, the Pueblo population declined from about 14,000 to less than 10,000 during the same time period (Dozier 1970:63, 86; see Table 1 below). This decrease in Pueblo numbers followed the substantial decline that had already occurred from a pre-conquest population estimated at between 30,000-40,000 individuals (Spicer 1962; Dozier 1970:63). At the same time, the number of Pueblo villages in New Mexico decreased from 66 to 21 during the period of Spanish settlement (Simmons 1979:185). Finally, the surviving Pueblo

villages were all, without exception, smaller than the largest villages had been before the Spanish arrived. Due to a population decline of nearly 90% and consequent widespread pueblo abandonment, the size of the Pueblo region in 1800 was barely half as long and half as wide as it had been in 1600 (Meinig 1971:12). Furthermore, while the Spanish population increased four-fold throughout the 19th century, by 1900 the size of the Pueblo population had remained largely the same as it had been a century earlier.

TABLE 1

Date	Population	
	<u>Spanish</u>	<u>Pueblo</u>
1750	3,779	12,142
1760	7,666	9,104
1793	16,156	9,275
1799	18,826	9,732

SOURCE: Dozier (1970:86)

Several factors contributed to the decline of Pueblo population and settlement following the arrival and expansion of the Spanish population. Among the most prominent factors during the first 100 years were disease, famine, Spanish exploitation and warfare. However, as Pueblo-Spanish relations improved and stabilized during the 18th and 19th centuries, these factors were replaced by the systematic incorporation of individual Pueblo into the expanding Spanish population (see Dozier 1970:86-91). Only continuing Pueblo incorporation into the dominant Spanish population can account for the latter’s dramatic increase in the absence of both continuing Spanish immigration and Pueblo population growth.

As the size of the Spanish population grew and its demand for agricultural

resources increased, Spanish-Pueblo competition for land and water became greater, especially as the amount and distribution of arable farmland was severely restricted and already claimed by Pueblo settlements. Little direct conflict developed over land and water during the 17th century, however, as the Spanish population did not farm, but rather obtained the resources it required by exploiting Indian labor and by confiscating Indian food supplies. What agricultural lands were needed by the small Spanish population at that time could be satisfied by available unused lands. Furthermore, since most early Spanish land use was directed towards livestock grazing, their demand for land did not conflict with Pueblo needs, as the pueblo had no domesticated animals prior to Spanish arrival. Consequently, throughout the 17th century most agricultural land remained under Pueblo control.

However, these circumstances changed dramatically after the reconquest. The *encomienda* system allowing Spanish settlers to appropriate Indian labor and resources was abolished, and the Spanish population became directly involved in agriculture. Competition remained limited during most of the 18th century due to widespread Pueblo population decline and village abandonment which yielded both a decline in Pueblo irrigation and a decrease in the amount of Pueblo land actively cultivated (Carlson 1975:95). Given the relatively small size of the Pueblo population at the time, the demand for irrigable land could largely be satisfied by that which had been abandoned.

By far, the most common method of Spanish encroachment on Pueblo land was through illegal squatting by Spanish settlers. Although this often resulted in Pueblo legal action being taken to protect their land, in many cases Spanish encroachment occurred without Indian objections, due largely to

Pueblo inability to utilize these lands at the time (Carlson 1975). In addition, many pueblos adopted private land ownership and exchanged small parcels of bottomlands with Spanish settlers (*ibid*:96-97). It was also not uncommon for Spanish settlers to be invited to settle on Pueblo lands in order to enhance their mutual defense against raids by nomadic Indians, especially during the 18th century (see Jenkins 1966:98; Simmons 1979:189). As a result, in 1765 San Juan and Taos were over 50% and 25% Spanish respectively; and in 1793, following two smallpox epidemics, San Ildefonso was nearly 70% Spanish.

Spanish encroachment on Pueblo land increased gradually as the size of the Spanish population grew. This encroachment occurred despite legal and administrative restrictions against Spanish settlement on Indian land (see Jenkins 1966, 1972; Simmons 1979:179). The availability of irrigable land within the northern Pueblo Indian Grants underlay continuing Spanish-American concentration in the *Rio Arriba*, (the region north of present-day Albuquerque). However, by the early 19th century, unclaimed irrigable land in the *Rio Arriba* had become scarce (Carlson 1975:91), adding momentum to an increasingly centrifugal Spanish expansion. However, following the Mexican Revolution in 1821, all previous obstacles to Spanish settlement on Indian lands were removed. Furthermore, with American acquisition of New Mexico in 1848, new grant lands in New Mexico were no longer available to Spanish settlers at the same time that outward expansion became increasingly blocked by Anglo westward migration. With its centrifugal expansion blocked and obstacles to settlement on Indian lands removed, the Spanish population (which had doubled in size between 1840 and 1880) settled increasingly on Indian land (see Carlson 1975:98-99; Spicer 1962:171-173).

Ecology of Ethnic Interactions during the Spanish Period

Three distinct sets of ethnic interactions occurred during the period of Spanish control in New Mexico. These include: (1) Comanche replacement of the Apache as the dominant nomadic bison-hunting population in New Mexico and as the Plains representative in the Valley-Plains trade; (2) Spanish expansion against and assimilation of the Pueblo, with Spanish replacement of the Pueblo along the Rio Grande and as the dominant Valley representative in the Valley-Plains trade; and (3) the evolution of increasing Comanche-Spanish trade and interdependence. All three of these interactions occurred in accordance with ecological expectations.

Comanche exclusion of the Apache occurred because both groups were in complete and direct competition for the same resources. Although the Apache practiced supplementary dry farming, their primary subsistence was based on bison hunting and on the exploitation of other undomesticated resources. Furthermore, bison hunting formed the basis of their participation in the Valley-Plains trade, which constituted a fundamental aspect of their adaptation to the New Mexican environment. Consequently, because Apache participation in the trade depended upon their ability to supply buffalo products, any interference with their access to buffalo constituted a threat to their survival. Their semi-sedentary residence in small isolated villages made the Apache vulnerable to surprise attacks and placed them at a distinct military disadvantage to the fully nomadic Comanche (Secoy 1953:30-32). As a result, the Apache were repeatedly defeated in battle by the Comanche and were, ultimately, excluded from most of their former territory in eastern New Mexico and western Texas.

Comanche expansion against the Apache operated primarily through *interference* strategies and resulted in competitive exclusion through *expulsion*. No evidence exists which suggests that the Comanche were more effective bison hunters or that a superior exploitative strategy contributed to their removal of the Apache. Given the limited opportunities for *niche differentiation* among hunter-gatherer populations in eastern New Mexico, the Apache were virtually eliminated from vast areas of eastern New Mexico within a relatively short period of time. In this respect, Comanche exclusion of the Apache duplicated the Apache's earlier expulsion of the Antelope Creek Focus peoples from this same territory some 300 years earlier (Abruzzi 2003).

Spanish relations with the Pueblo were more complex than those between the Comanche and the Apache; Spanish expansion against the Pueblo occurred as a result of *incorporation* rather than *expulsion* and operated through a combination of *exploitation* and *interference* strategies. While Spanish military superiority was a dominant factor in the subjection and exploitation of the Pueblo, the adaptive superiority of the Spanish political economy to New Mexican environmental conditions underlay the expansion of the Spanish population during the 18th and 19th centuries. Spanish agriculture, which combined irrigated farming in river valleys with livestock grazing on nearby hillsides, provided a more diversified agricultural system than that which existed among the Pueblo. Spanish combination of irrigated farming in river valleys with sheepherding on nearby hillsides provided a successful adaptive strategy in the arid and highly variable New Mexican climate regime. Livestock provided a buffer to poor harvests and climatic instability. As a result, the Spanish political economy enjoyed greater

stability in the face of environmental variability. The Spanish also introduced a more integrated system of irrigation and expanded that irrigation system beyond the Rio Grande Valley where it had mostly been practiced by the Pueblo (cf. Simmons 1972:138; see also Colton 1979). Finally, by introducing livestock and new crop varieties and trade items, the Spanish increased both the level and the degree of village specialization in manufacturing and in local participation in the Plains-Valley trade system (see Kutsche et. al. 1976: 11-12).

The greater political and administrative centralization of the Spanish political economy compared to that of the Pueblo also contributed to the continued growth and expansion of the Spanish population. Greater centralization enabled a more successful military response to Plains Indian raids, an elimination of the manpower loss and destruction associated with internecine Pueblo warfare, a more effective initiation of new settlements, the development and maintenance of integrated irrigation system, the peaceful resolution of land disputes, and a more effective coordination and protection of trade caravans. Some authors have suggested that pre-contact Pueblo integration was greater than had previously been thought (cf. Wilcox 1981b; Plog 1980). However, the persistence of internecine Pueblo warfare, as well as developments surrounding both the Pueblo Revolt and the Spanish reconquest (cf. Sanchez 1983:133; Forbes 1960:232, 250; Schroeder 1968:299-300), clearly indicate that the level of Pueblo integration was quite limited and never approached what was achieved under subsequent Spanish administration. Indeed, the relative superiority of the Spanish adaptive system following the reconquest is illustrated by the steady expansion of the Hispanic population and by the systematic assimilation of the Pueblo into that system.

Important material considerations underlay the contrasting Comanche exclusion of Apache through *expulsion* and Spanish exclusion of Pueblo through *incorporation*. The differences were due in large part to the nature of each dominant population's expansion. Spanish expansion into Pueblo territory was gradual, occurring over two centuries, whereas Comanche exclusion of the Apache from eastern New Mexico occurred in a matter of decades. Ecological and demographic conditions also strongly influenced ethnic interactions in the two cases. Systematic transgenerational incorporation requires both increased productivity and a greater demand for labor, particularly in less desirable occupations. Spanish colonial society provided such conditions. Through the large-scale development of livestock raising, conditions were created for the exploitation of previously underused resources through the widespread utilization of cheap labor. Shepherding was undertaken through the *partido* system in which a flock of sheep, usually about 2,000, were sharecropped out to one or two men. The prevalence of *partido* coincided with the rise and fall of the sheep industry. Its prominence peaked around 1905 and then declined (Charles 1940:33).

Puebloans were, for the most part, assimilated into the Spanish population through intermarriage, swelling the lower socioeconomic ranks of colonial Spanish society. As the Spanish population grew and became progressively more dependent upon livestock production, it became increasingly dominated by a numerically small elite (*ricos* and *patrons*) who owned or controlled a disproportionate share of community resources; who claimed pure descent from Spanish ancestors; and who attempted to maintain a separate and distinct lifestyle from the remaining population (see Paul 1971:35-36; Gonzalez 1969:44-46).

By 1867, some 500-700 wealthy families dominated a total population of approximately 70,000 semi-dependent villagers (Dozier 1970:19). In addition, a system of debt slavery had evolved which included up to 3,000 individuals and which had to be formally outlawed by the United States Congress (*ibid.*; Paul 1971:35).

In an important sense, due to extensive Pueblo assimilation Spanish expansion represented more an expansion of the Spanish socioeconomic system than the expansion of the Spanish population. In this way, it differed sharply from the Comanche expulsion of the Apache. Through intermarriage and the subsequent incorporation of interethnic offspring into Spanish society, the growing *Hispanic* population came to dominate and control formerly Puebloan resources as completely as the Comanche did Apache resources. Furthermore, as intermarriage and incorporation continued, the differences between the Pueblo and Spanish populations steadily declined. Indeed, so similar did the two populations become that had U.S. occupation of New Mexico not taken place, the two groups would likely have eventually merged to form a single population (see Gonzales 1969:28; Dozier 1970:113). Significantly, the new hybrid population expanded along the exact same route as that taken by the Pueblo during the 13th century (Kutsche et al 1976:13).

The third pattern of ethnic interactions that occurred during the Spanish/Mexican period was the evolution of the Spanish-Comanche alliance. This alliance represented a restructuring of the Valley-Plains economic interdependence that had existed prior to Spanish colonization. The Comanche trade became a fundamental feature of the New Mexican economy. So important did the trade become to both groups, and so solid did the alliance develop between them (see John 1984; August

1981:146ff), that the *Comanchero Trade* became an effective weapon of interethnic cooperation against Anglo immigration during the second half of the 19th century (see Kenner 1969), just as the Pueblo-Apache alliance had previously been used against the Spanish in 1680.

Conclusion

This paper has attempted to show that ecological considerations are primary to understanding ethnic interactions in New Mexico during the period Spanish, and later Mexican, control. Three distinct patterns of ethnic interactions occurred which were anticipated by ecological theory: (1) where complete competitors interacted and where environmental conditions did not permit their continued coexistence, the complete exclusion through *expulsion* of one group (Apache) occurred as a result of the superior military power of the other (Comanche); (2) where the demands of increasing productivity in the newly established adaptive system required increased labor, exclusion through expulsion did not occur. Rather, gradual exclusion through *incorporation* occurred instead (Spanish-Pueblo); (3) where resource differentiation selected for distinct adaptive populations trading the surplus of their discrete habitats, *resource partitioning* and ethnic coexistence occurred (Spanish-Comanche).

Furthermore, as had happened previously (see Abruzzi 2003), the indigenous multi-ethnic trading system underwent a clear pattern of evolution. Initial stable conditions, disrupted by the immigration of new populations, experienced a period of increased competition and conflict, which was gradually followed by a return to stable community organization. Despite considerable turmoil, economic and social disruption and extensive loss of life, as well as the complete replacement of the

participating ethnic populations in the region, a stable multi-ethnic trading system based on the Valley-Plains ecological distinction reemerged following Spanish and Comanche immigration based on an exchange of the very same resources as the earlier Pueblo-Apache trade.

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