Persistence and Change in the Ethnic Regionalization of Texas

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In 2003, the U.S. Census Bureau reported that Texas had achieved "minority-majority" status, joining just four other states that have reached this benchmark and continuing a long history of ethno-racial diversity. Previous research by distinguished cultural geographers has identified four major ethnic regions within the state, including the southwestern Hispanic borderlands, the northeastern Anglo-American realm, a strong African-American component in East Texas, and a fragmented, highly diverse "shatter belt" that characterizes the confluence of major migration streams. In this paper, I argue that traditional methods of delineating ethnic regions have the potential to obscure some important aspects of the state's ethnic geography. To remedy this situation, I employ the technique of factor analysis to analyze the settlement patterns of Texas's nearly 200 resident ethnic groups, as reported in the 2000 Census. My findings reveal the persistence of the four major ethnic regions previously identified as well as the recent expansion of the Hispanic borderlands and the erosion of the "German Belt" of Central Texas. In addition to updating and refining the boundaries of the state's major ethnic regions, I also demonstrate how the settlement patterns of more recently arrived immigrant groups diverge from those of longer-established groups. My findings should be of broad interest to the observer of American cultural geography as I propose an innovative methodological approach to the analysis of population patterns while also identifying trends within Texas that are expected to impact other parts of the country in coming decades.
Key Words: Ethnic regions, factor analysis, Texas.

Introduction

In his 1984 text *Texas: A Geography*, noted cultural geographer Terry Jordan described the state as a "confluence of cultures" (Jordan et al. 1984, 69). More than two decades later, Jordan's metaphor is as appropriate as ever: Texas's ethnic geography continues be shaped by converging domestic and international migration streams, eddying to form culture regions that have remained surprisingly stable in many regards since the early nineteenth century. In this paper, I begin with a brief overview of the historical development of these culture regions, drawing heavily from Jordan's extensive body of schol-

arship.[1] I then propose a map of contemporary ethnic regions of Texas, gener-
ated using the statistical technique of factor analysis. I demonstrate how this
powerful tool provides new insights into the identification and interpretation of
settlement patterns in a large and ethnically complex region. To contextualize
my findings, I briefly outline historical factors that have contributed to the de-
velopment of long-standing spatial configurations and identify contemporary
processes that are facilitating the emergence of new ethnic regions.

Historical Context

On the eve of Mexican independence, the vast expanse of territory that
would become the state of Texas was sparsely populated. The indigenous in-
habitants, originally representing hundreds of tribal and clan-based groups, had
been decimated by the introduction of Old World diseases and weakened by
the disruption of traditional trading networks. Compounding the natives' mis-
fortunes, the westward expansion of Anglo-American settlement and, ironi-
cally, the in-migration of Indian tribes from the eastern United States were
rapidly displacing their remaining populations (Klos 1991). The Spanish, who
held imperial control over much of the region for over 100 years, had failed to
effectively colonize the province, deterred by its lack of mineral wealth, hostile
encounters with the Apaches and Comanches of the western plains, and a pau-
city of sedentary Indian communities that would provide opportunities for mis-
sionary activities or economic exploitation (Newcomb 1961). In 1815, the
population of Spanish Texas numbered a mere 5,000 persons, scattered among
a handful of small, isolated settlements (Jordan 1980). Into these relatively
empty lands flowed four distinct streams of settlement: Anglo-American set-
tlers from the north and east, Mexicans from the south and west, African-
Americans from the Lower South, and a mixture of continental Europeans ar-
riving primarily through Gulf Coast ports. Of these, the Anglo-American
stream was the most significant, both in terms of its volume and the role it
would play in shaping Texas's future development.

Anglo Texans
The roots of Anglo-Texan dominance lie in Mexico's issuance of a land
grant to Moses Austin in 1820. Like other *empresarios,* Austin received a
large tract of land from the Mexican government, with the charge of introduc-
ing a specified number of settlers into the grant. Austin's efforts were unique
in that he was the first to receive the Mexican government's permission to re-
cruit colonists from the United States. Under the leadership of his son,
Stephen F. Austin, the rich prairies and woodlands of the Austin Colony at-
tracted a deluge of settlers from the east, who numbered as many as 9,000 by
1834 (Jordan 1980). Unorganized settlement further bolstered the Anglo pres-

ence as more American settlers infiltrated Texas's eastern and northeastern borders. In response, Mexico attempted to increase colonization by Europeans and by her own citizens; however, the new nation was unable to match the influx of Anglo-Americans. Ultimately, about 80 percent of those who settled Mexican Texas during its 15-year existence were of Anglo descent (Meinig 1969).

The Anglo-Texan population could be divided into two major subgroups of ultimately similar size, distinguished from one another by their geographical and ancestral origins and their eventual distribution within the state. The "Upper Southerners" consisted of slaveless yeoman farmers, mainly of Scotch-Irish, German, or English descent, who migrated from states such as Tennessee, Kentucky, Missouri, and Arkansas (Jordan et al. 1986). The "Lower Southerners" hailed from the Gulf and Atlantic coastal plains and practiced a less diversified, more market-oriented plantation agricultural system centered on cotton production (Jordan et al. 1984). The two Anglo cultures participated in a zonal migration that resulted in their localization within two distinct regions, separated by an imaginary border extending roughly from present-day Texarkana to San Antonio (Jordan et al. 1984). Areas to the northwest of this line were dominated by Upper Southerners, while areas to the southeast were the province of the Lower Southerners. Despite their differences, the two "old stock" Anglo subcultures together implanted American culture into Mexican Texas and successfully resisted Hispanicization (Meinig 1969).

Mexican Texans

While Anglo settlement reduced the relative size of the state's Mexican-derived population to a small minority by the 1830s, areas adjacent to the Rio Grande Valley continued to be dominated by Mexicans and Mexican Americans throughout the 1800s (Jordan et al. 1984). Those who settled Texas in the second half of the 19th century were pushed from their southern homeland by warfare, dictatorial rule, and widespread poverty and drawn toward Texas by employment opportunities in the agricultural sector (De León 2001). These push-pull factors remained significant beyond the turn of the century as the Mexican Revolution, coupled with the rise of irrigated truck farming in South Texas, triggered the first large-scale immigration of Mexicans into the state, beginning around 1910 (De León 2001, Jordan et al. 1984). This migration stream dwindled during the 1930s, owing to the Great Depression and efforts to repatriate and deport Mexicans living in the U.S., but it rebounded as a result of American industrialization and labor shortages associated with World War II (De León 2001). By mid-century, Mexican-Americans became Texas's largest minority group, surpassing African-Americans and reaching a total of 1.4 million by 1960 (De León 2001, Jordan et al. 1984). The growth and territorial expansion of the Mexican-American population is considered to be "the

most significant ethnic development of the twentieth century in Texas" (Jordan et al. 1984, 83). As I will demonstrate, continued immigration from Mexico and natural increase have resulted in a spatial expansion of the U.S.-Mexican "borderlands" that will become even more consequential as we enter the twenty-first century.

Black Texans

Owing to Mexico's opposition to the institution of slavery, Texas's African-American population was relatively small in 1836, numbering only about 5,000 (Dulaney 2001). However, the establishment of the independent Republic of Texas and its acceptance of slavery resulted in a wave of settlement from the Lower South, bringing large numbers of black slaves into East Texas. By the outbreak of the Civil War, the black population accounted for nearly one-third of the state's total and its spatial distribution mirrored that of the white slaveholders (Jordan et al. 1984). Black immigration declined sharply after the abolition of slavery, owing in large part to persistent racial tensions within the state. In addition to acts of harassment and violence perpetrated by individuals, the state legislature and several Texas cities enacted Black Codes to restrict the rights of African Americans, prevent their access to public facilities, and force them to remain in rural areas as agricultural laborers (Dulaney 2001). Despite elimination of the Black Codes in 1867, the state remained legally, socially, economically, and politically segregated until the civil rights era. This situation resulted in a large-scale emigration of black Texans to northern and western states, further reducing their representation within the state's population (Jordan et al. 1984). Despite this exodus, the African American population continued to grow as a result of natural increase, accounting for about 12 percent of the state's total population in 1990. While the highest concentrations of African Americans are still found in rural counties that were once part of the Plantation South, the majority of Texas's black population can today be found in urban areas, notably Houston and Dallas.

Continental Europeans

During the mid-1800s, Texas's reputation as a land of great economic opportunity was a powerful magnet for European emigrants who were displaced from their homeland by political upheaval, crop failures, the disruptive effects of industrialization, increasing land fragmentation, diminishing agricultural prices, mounting production costs, and rising taxes (Jordan 1966). Together, immigrants from continental Europe – notably Germans, Slavs, and Scandinavians – constituted the fourth major ethnic wave to reach Texas. Many of these immigrants entered the state through the port of Galveston – "the Ellis Island of Texas" – during the period between 1850 and 1920 (Hardwick 2003, 69).

Historically and presently, the largest and most persistent European element within Texas's population has been the German Americans. Johann Friedrich Ernst was the dominant personality who provided the initial impetus behind German emigration to Texas. In 1831, he received more than 4,000 acres in present-day Austin County, a parcel of land that would form the "nucleus" of Texas's "German Belt" (Jordan 2001). Through his "America letters"–some of which were reprinted in German books and newspapers – Ernst stimulated a process of chain migration that brought settlers to Texas from central and western Germany (Jordan 1968, 2001). Regardless of whether they were the first white occupants of a particular area, the Germans eventually became dominant, both numerically and culturally, in many of the places where they settled (Jackson 2006). By 1887, Texas's German population was surpassed in size only by its Anglo and black populations, with Germans outnumbering Hispanics three to one (Jordan 1986).

Immigration from Germany to the U.S. began to dwindle in the last years of the nineteenth century. Nevertheless, German settlement continued to march westward across the state until the 1920s, with later-established communities being established by second- and third-generation German Texans (Jordan 2001). Although the Great Depression stemmed the expansion of German settlement and many rural dwellers migrated to cities during the twentieth century, the boundaries of the German Belt have remained fairly stable since 1930. However, the cultural identities of Europeans in Texas began to erode at this time because ethnic traditions and institutions were no longer reinforced by streams of new immigrants (Meinig 1969). The intrusion of Anglo Texan settlers into the previously isolated German Belt, rural depopulation, anti-German sentiment, intermarriage, and modern transportation and communication technologies all took their toll on German-Texan culture (Jordan 2001). Nevertheless, much of south-central Texas retains an "Old World charm" that is strikingly evident in the restored, preserved, and constructed cultural landscapes and ethnic celebrations in places such as New Braunfels and Fredericksburg, which have become popular tourist attractions since the 1960s (Adams 2005). Less tangibly, "German" continues to be the single largest European ancestry group reported by Texans, according to the 2000 Census.

The Macro-regions of Ethnic Texas

The historical processes described above have resulted in the development of four distinct ethnic regions in Texas: the southwestern Hispanic borderlands, the Anglo-American realm in the northeastern quadrant, a strongly African-American east, and a fragmented and highly diverse zone, characterized by significant European-derived populations, that straddles the center of the state. Several previous attempts have been made to trace the contours of these regions, utilizing data from published U.S. Census reports and unpublished

manuscript schedules (e.g., Jordan 1986, Meinig 1969, Zelinsky 1992). Geographers have typically mapped the largest ethnic group in each county or sub-county unit or they have identified areas in which a particular group exceeds a predetermined concentration.

Duplicating the first of these two methods to map data from the 2000 Census, I discovered that the ethnic geography of Texas continues to be defined largely by the four major groups previously discussed (Figure 1). The most significant difference that can be observed between my map and earlier maps is the sustained expansion of the Hispanic culture region. From the 1990 Census to the 2000 Census alone, the number of Texas counties in which "Mexican" was the most commonly reported ethnic ancestry increased from 93 to 113, and the absolute number of Texans of Mexican descent increased from 3.9 million to 5.2 million (an increase of nearly one-third). One-third of the Mexican Texans were foreign-born in 2000, demonstrating the persistence of migration streams that help to sustain the ethnic distinctiveness of the region.[2]
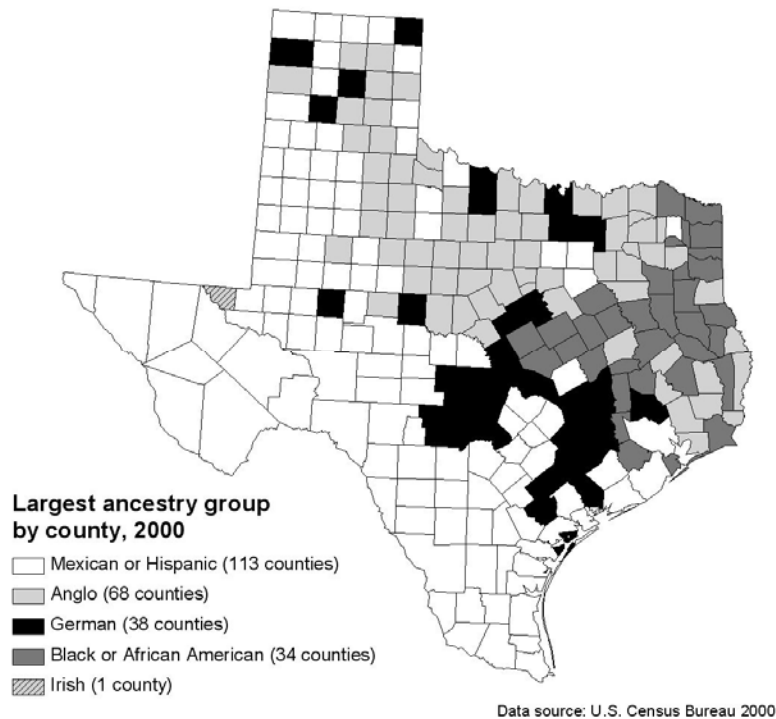

Largest ancestry group by county, 2000

- ☐ Mexican or Hispanic (113 counties)
- ☐ Anglo (68 counties)
- ■ German (38 counties)
- ▨ Black or African American (34 counties)
- ▨ Irish (1 county)

Data source: U.S. Census Bureau 2000

Figure 1. Largest ancestry group by county, 2000

In contrast, the number of German Texans has dropped precipitously in recent years, reflecting a trend that can be observed throughout the United States at local, state, regional, and national scales. In the period from 1990 to 2000 alone, the number of Texans claiming German ancestry plummeted from nearly three million to just over two million. The flood of European immigrants dwindled to a mere trickle over the course of the twentieth century, and many later-generation European-Americans no longer identify with specific national origin groups, choosing instead to describe their ethnicity as simply "white" or "American" (Alba 1990). Nevertheless, Figure 1 demonstrates that there are 38 counties in which "German" is still the most frequently reported ethnic ancestry, representing 15 percent of all Texas counties. In many of these counties, "German" Texans constitute only a very narrow plurality of the total population, thus this particular cartographic depiction may be misleading in its attempt to effectively convey ethnic patterns within the state.

In light of the availability of computer-assisted quantitative analysis, I chose to explore whether the application of more advanced statistical techniques might yield additional insights into contemporary ethnic geographies. For those attempting to make sense of ethnic Texas, the vastness of the state (254 counties) and its impressive diversity (177 racial and ancestry groups reported in the 2000 Census) can pose a formidable challenge. However, the technique of factor analysis permits the quick and efficient identification of relationships among large numbers of data, facilitating their interpretation. Factor analysis employs a suite of procedures to remove the redundancy from a set of correlated variables and to represent them through a smaller number of derived variables, known as factors (Kachigan 1991). Variables that are highly correlated with one another will together form a factor, while variables that are not highly correlated will form separate factors.

I analyzed county-level data from the 2000 Census using the Statistical Package for the Social Sciences (SPSS-PC) software. For the purposes of this analysis, I made no distinction between "ancestry" and "racial" groups.[3] Because census respondents may claim multiple ancestries, the universe of cases for this study is the total number of *responses* tallied, whether alone or in combination with other responses, rather than the number of individual respondents within each category.

The first step was to group Texas's 254 counties into regions characterized by similar patterns of ethnic settlement. In factor analysis, each variable (in this case, each county) receives a "loading" for each derived factor that is returned, ranging from in value from –1 to +1. The magnitude of the loading indicates the extent to which the variable correlates with the derived factor. I defined "high" loadings as those with a value of 0.70 or higher, or those for which the derived factor accounted for about one-half (49 percent) of the variance within a given county's ethnic makeup. The advantage of selecting a

threshold of 0.70 is that a county could receive no more than one "high" load-
ing among the multiple derived factors returned, permitting each county to be
assigned to a single ethnic region.

The resulting component matrix yielded high factor loadings only for Fac-
tor 1. Therefore, I used a varimax rotation to minimize the number of variables
that have high loadings on a factor, thus enhancing the interpretability of the
results (Norusis 1990). After rotation, this cluster analysis yielded six factors
with eigenvalues greater than 1, which together explained over 99 percent of
the variance in the data set (Table 1).[4]

Assigning each county to a single "cluster" based on the results of the fac-
tor analysis resulted in a map depicting four major ethnic regions, as well as a
fifth region encompassing counties that did not have high loadings for any of
the derived factors (Figure 2). Cluster 1 counties are located in West and
South Texas, regions long known for their predominantly Hispanic populations
and cross-border cultural ties. In factor analysis, the variables with high load-
ings on a factor provide the meaning and interpretation of the factor (Kachigan
1991). Thus, reviewing the ethnic composition of Zavala County (Factor 1
loading: 0.997), confirms that the factor represents counties with a very high
Hispanic population, a small population claiming European descent, and very
few African-Americans.

Table 1 reveals that Factor 1 accounts for the greatest proportion – almost
three-quarters – of the variance within the dataset. This finding reflects the
fact that, in July 2004, Texas became the fifth state (along with Hawaii, New
Mexico, California, and Washington, D.C.) to achieve minority-majority
status, and Hispanics are expected to account for more than half of the state's
population sometime within the next 15 to 35 years, according to various esti-
mates (Murdock 2005 in Raymond 2005, Petersen and Assanie 2005, U.S. Bu-
reau of the Census 2000). Furthermore, The Center for Demographic and So-
cioeconomic Research and Education has reported that "Hispanic population
growth has…been the single largest determinant of population growth in the
state for each of the last two decades" (Murdock et al. 2002, 15).

Cluster 2 counties are located in the northeastern quadrant of the state and
in scattered pockets of southeastern Texas. Both areas were historically settled
by Anglos – the Southern-born descendents of old-stock Europeans (Jordan
1969). Montague County best illustrates the meaning of this cluster, with a
Factor 2 loading of 0.963. Here, "American" is the ancestry group most com-
monly claimed by residents (29 percent of all ancestries reported), while those
claiming ancestry from the countries of the British Isles (combined total of 34
percent of all ancestries) and other European ancestries (combined total of 26
percent of all ancestries) also comprise significant portions of the population.
The dominant "whiteness" of the counties in Cluster 2 is further demonstrated
by the fact that African Americans and Hispanics accounted for rather small

Table 1. Total variance explained by cluster analysis of counties

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	Percent of variance	Cumulative percent	Total	Percent of variance	Cumulative percent
1	186.204	73.309	73.309	93.585	36.844	36.844
2	38.662	15.221	88.530	82.400	32.441	69.285
3	13.878	5.464	93.994	50.570	19.910	89.195
4	8.880	3.496	97.489	20.760	8.173	97.368
5	2.252	.887	98.376	2.217	.873	98.241
6	1.874	.738	99.114	2.217	.873	99.114

proportions of the total population. Interestingly, although Anglo Texans have traditionally been considered the "host culture" within the state (Jordan 1986), a far greater amount of the ethnic variance between Texas counties is attributable to Factor 1 than Factor 2. A "host culture" is defined as the dominant, majority cultural group within a country or society, usually occupying a dominant socio-economic position (Jordan and Domosh 1999).[5] The notion that Anglo Americans continue to comprise the host culture of Texas is clearly challenged by recent demographic trends as well as the results of the factor analysis: by 2040, the state is expected to be majority Hispanic and only one-third to one-quarter Anglo in ethnic composition (Murdock et al. 2002).
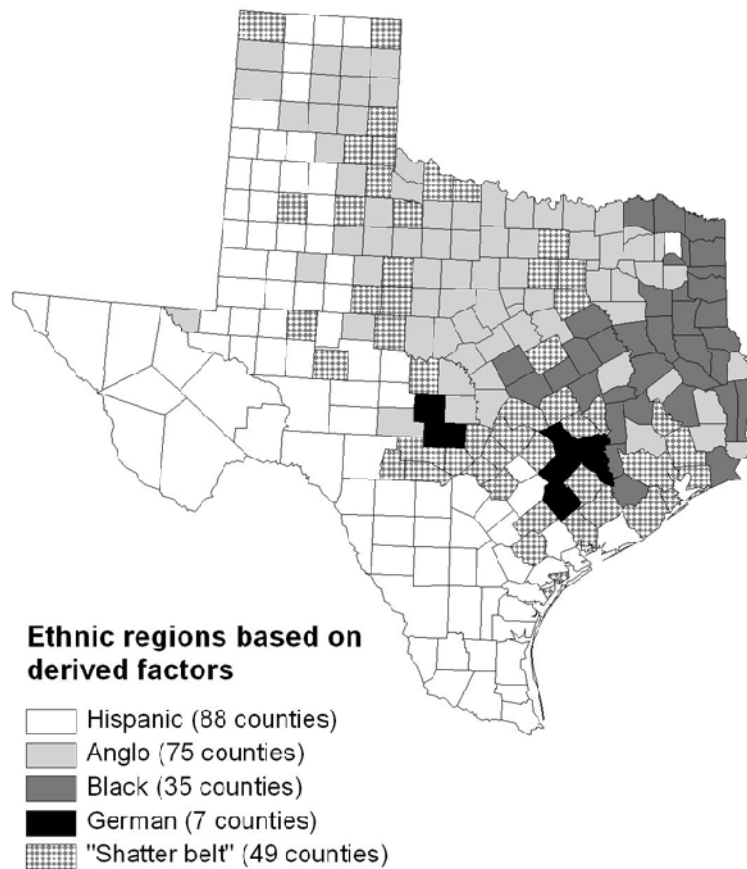

Ethnic regions based on derived factors

☐ Hispanic (88 counties)
▨ Anglo (75 counties)
▨ Black (35 counties)
■ German (7 counties)
▦ "Shatter belt" (49 counties)

Figure 2. Ethnic regions based on derived factors

Cluster 3 includes a number of counties in East Texas, the region historically associated with plantation agriculture. It is distinguished from the rest of the state by its relatively high proportion of African-American residents, as the ethnic composition of Jefferson County demonstrates (Factor 3 loading of 0.956). Here, African-Americans represent nearly 36 percent of all ancestries claimed by county residents. In terms of "racial" classification, however, African-Americans are nonetheless a minority, as white ancestries together account for approximately 46 percent of all ancestries reported. Comparing Figures 1 and 2, the reader will observe that the distribution of Cluster 3 counties is virtually identical to the distribution of counties in which blacks comprise the largest ethnic population.

Counties in Cluster 4 are concentrated in the central portion of the state, in areas long distinguished by their large continental European populations. Analysis of the ethnic composition of Fayette County, which had the highest Factor 4 loading (0.877), suggests that Factor 4 might represent the combined influence of German and Slavic (specifically Czech) settlement. Because the highest Factor 4 loading was comparatively low and because of my familiarity with the ethnic composition of other counties within this region, I determined that further analysis was necessary to accurately interpret the meaning of the factor. Analysis of the ethnic composition of the other six counties with Factor 4 loadings of 0.700 or higher revealed that all include a sizable German population (ranging from 25-37 percent of all ancestries reported), but the frequency with which Czech ancestry was reported varied widely (ranging from less than 1 percent to over 28 percent). Therefore, I interpret Factor 4 as indicating a high degree of "Germanness." Overall, the populations of counties in Cluster 4 are predominantly white and distinguished from the Anglo culture region by their high concentration of Germans and lower incidence of reported "American" ancestry.

When the map of ethnic regions based on derived factors is compared to Jordan's (1986) historical ethnic maps of Texas, one can observe a number of similar findings, including the continued northward and eastward expansion of the state's Hispanic region into the Anglo and African-American culture realms and the preservation of a German Belt in the "seam" between the Anglo and Hispanic regions (Jordan 1986, 409). However, Figure 2 provides additional insight by revealing a substantial number of counties that do not have high loadings for any of the derived factors. As the population of Travis County (Austin metropolitan area, see Figure 3 for location) demonstrates, these counties exemplify the concept of an ethnic "shatter belt," a region in which a number of different ethnic groups are represented and no single group is dominant (Jordan 1986, 385). The shatter belt counties, in which the four major ethnic groups are fairly evenly distributed, are frequently found along the boundaries between the four clusters, demonstrating Central Texas's tendency toward ethnic balkanization, which Jordan (1986) traced back to at least

1850. The juxtaposition of many major cities in and near the shatter belt also suggests that urban areas are contact zones among the state's numerous ethnic groups. While the existence of the shatter belt is not a new discovery, the technique of factor analysis permits the efficient and accurate identification of its constituent counties, and the large number of counties it encompasses attest to the importance of this region in understanding Texas's contemporary ethnic geography.

Islands in the Streams: Micro-regions Revealed

Perhaps the more powerful application of factor analysis to the study of places with complex settlement patterns is in the identification of ethnic distributions that might otherwise go unnoticed. Therefore, the second step in my research was to transpose the matrices of my dataset in order to reduce the state's 177 ethno-racial groups into a smaller, more manageable number of derived factors based on similar spatial distributions. The analysis returned nine factors with eigenvalues greater than 1, together accounting for over 95 percent of the variance in the dataset (Table 2). Because only one group loaded highly on Factors 5, 6, 7, 8, or 9 (Pueblo Indians, with a Factor 6 loading of 0.915), these factors have been omitted from the discussion.

By examining the distribution of the groups with the highest Factor 1 loadings – Uruguayans (0.959) and Colombians (0.954) – one can infer that members of groups associated with Factor 1 are concentrated in major metropolitan areas, with the majority residing in and around Houston.[6] These groups represent the "new" wave of immigration that has resulted from the immigration reforms of the 1960s and Central and South American, West Indian, Asian, and Arab groups and, to a lesser degree, Eastern Europeans. Thus, Factor 1 suggests an important role for Houston as a gateway for new immigrants. Census data confirm that Texas's most populous city is home to the fourth-largest foreign-born population in the U.S. at just over one-half million people, with the foreign-born accounting for more than one-quarter of Houston's total population (U.S. Census Bureau 2003). As presented in Table 3, African Americans are also among the groups loading highly on Factor 1, reflecting their concentration in the eastern portion of the state as well as their urban orientation (Jordan 1986).

Groups loading highly on Factor 2 include several smaller Native American tribes, "other" Hispanic and Melanesian groups, Panamanians, Senegalese, and Puerto Ricans. The residential patterns of the Paiute and Yaqui Native American groups (Factor 2 loadings of 0.841 and 0.780 respectively) suggest that groups loading highly on Factor 2, like those associated with Factor 1 are largely concentrated in metropolitan areas. However, the Factor 2 groups are smaller in terms of their overall size, distributed more evenly among Texas' major cities, and less focused on the Houston metro area than the groups loading highly for Factor 1.

Table 2. Total variance explained by factor analysis of ethnic groups

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	Percent of variance	Cumulative percent	Total	Percent of variance	Cumulative percent
1	158.891	78.659	78.659	85.349	42.252	42.252
2	12.311	6.094	84.753	38.279	18.950	61.202
3	7.306	3.617	88.370	30.445	15.072	76.273
4	4.640	2.297	90.667	21.135	10.463	86.736
5	3.023	1.496	92.163	7.312	3.620	90.356
6	1.951	.966	93.129	2.867	1.419	91.775
7	1.535	.760	93.889	2.651	1.312	93.088
8	1.369	.678	94.567	2.047	1.013	94.101
9	1.098	.544	95.110	2.039	1.009	95.110

Table 3. Summary descriptions of factors returned in analysis of ethnic groups

Factor	Representative Groups (Loadings)	General Spatial Distribution

1	South and Central Americans
	    Uruguayans (0.959)
	    Colombians (0.954)
	    Hondurans (0.944)
	West Indians
	    Trinidadians (0.949)
	    British Virgin Islanders (0.947)
	Pakistanis (0.923)
	Arabs
	    Egyptians (0.899)
	    Palestinians (0.892)
	    Syrians (0.832)
	East and Southeast Asians
	    Vietnamese (0.880)
	    Indonesians (0.864)
	    Chinese (0.863)
	    Taiwanese (0.855)
	African Americans (0.728)
		Metropolitan areas throughout state, with majority concentrated in Houston

2	Native Americans
	    Paiutes (0.841)
	    "Other" Hispanics (0.815)
	    Yaqui (0.780)
	    Apaches (0.765)
	Pacific Islanders
	    "Other" Melanesians (0.748)
	    Guamanians (0.695)
	    Native Polynesians (0.695)
		Relatively equally distributed throughout metropolitan areas of the state

3	Tongans (0.975) Zairians (0.891) Laotians (0.825) Albanians (0.821) Hmong (0.751)	Metropolitan areas throughout state, with majority concentrated in Fort Worth

4	Soviets (0.972)
	Sub-Saharan Africans
	    Ethiopians (0.898)
	    Sierra Leoneans (0.864)
	    Zimbabweans (0.819)
	    Cape Verdeans (0.772)
		Metropolitan areas throughout state, with majority concentrated in Dallas

Factors 3 and 4 represent two sets of ethnic groups, each focused on a specific urban destination. Groups with high Factor 3 loadings include Laotians, Albanians, Hmong, Sudanese, Kenyans, and Somalians, while groups with high Factor 4 loadings include Ethiopians, Sierra Leonians, Zimbabweans, and Cape Verdeans. Tongans and Zairians, the groups with the highest Factor 3 loadings (0.975 and 0.891 respectively), are concentrated in the city of Fort Worth, while the settlement patterns of immigrants from the former Soviet Union and Ethiopia (Factor 4 loadings of 0.972 and 0.898 respectively) reveal that Factor 4 groups are focused almost exclusively on the city of Dallas. The extreme localization of the Factor 3 and 4 groups suggests that processes of chain migration continue to funnel immigration from specific source areas to specific destinations. Furthermore, members of these groups are likely to represent refugee migrations and will thus be directed by refugee resettlement agencies to locations that can provide the resources and infrastructure to support their needs.[7]

None of the "old-stock" Northern and Western European ancestry groups – such as the Irish, Germans, Scandinavians, or English – was correlated highly with any of the derived factors. In fact, their factor loadings were markedly similar to those of Texans who identified their ancestry as "American" in the 2000 Census. Additionally, the distribution of residents who identified their ancestry as English closely approximates the distribution of the state's population as a whole (Figure 3). Both of these findings demonstrate the high degree of spatial assimilation one would expect among old-stock European Americans. Because the old stock European and "American" groups were moderately correlated with Factor 1 (loadings ranged from 0.500 to 0.699), one can expect a higher degree of assimilation among Factor 1 groups than among the groups that were highly correlated with the other derived factors.

Conclusion

The results of this study generally support pre-existing knowledge about the distribution of ethnic groups in Texas, but they also reveal hidden dimensions of the state's ethnic geography. When a map of each county's largest ethnic group is compared to the map of ethnic regions identified through cluster analysis, the advantage of factor analysis is revealed. Data reduction allows the efficient and rapid identification of shatter belt counties in which multiple ethnic groups share dominance. Of particular interest within Texas are the expansion of the Hispanic borderland and shatter belt regions and the dramatic reduction in the number of counties associated with the German Belt. What this study contributes, then, is not a radically new and different scheme for dividing Texas into ethnic provinces, but a methodological proposal for making the task of delineating these regions more efficient and accurate.

Comparison of all ancestries reported and English ancestry

Distribution of total ancestries reported
- <1%
- 1% - 3%
- 3% - 5%
- 5% - 10%
- >10%

Reported English ancestry, by county
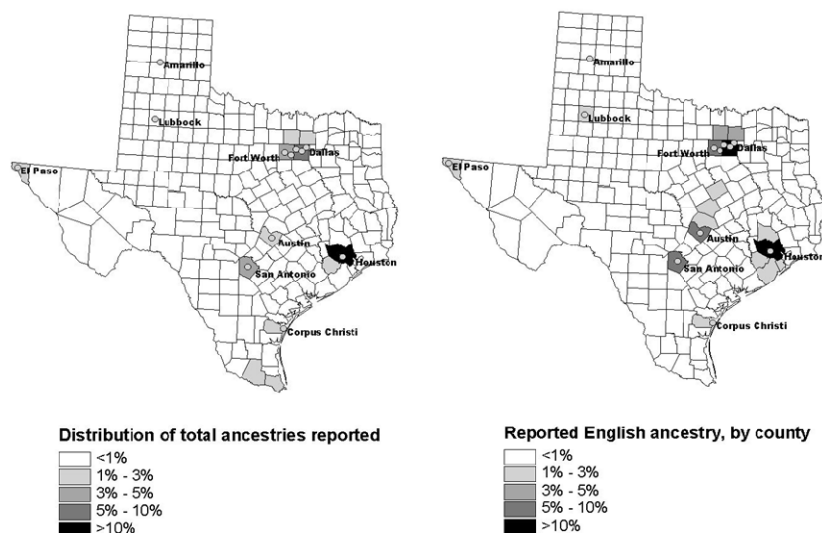- <1%
- 1% - 3%
- 3% - 5%
- 5% - 10%
- >10%

Figure 3. Comparison of all ancestries reported and English ancestry

Some have argued that the derived factors identified in a factor analysis could easily be identified from a simple examination of the data set (Kachigan 1991). However, factor analysis allows researchers to consider the impact of even the smallest groups on patterns of ethnic settlement. Considering the small populations of many groups that helped me to interpret the meanings of the derived factors returned in the second phase of my analysis, it is unlikely I could have detected these patterns without using the procedure, especially considering the extremely large size of my initial dataset (nearly 45,000 individual datum).

In sum, I have demonstrated the "key players" shaping settlement patterns in Texas have remained constant over the past 150-plus years, but their dominance within the state's ethnic geography obscures the contributions of smaller, more recently arrived groups to the cultural mix. Factor analysis can help researchers to locate these smaller ethnic populations and facilitates cross-group comparison. Furthermore, it can tease out evidence to highlight processes of cultural change that are steadily – yet often subtly – reconfiguring contemporary population patterns. The spatial (re)evolution currently taking place in Texas is worthy of consideration by anyone interested in deciphering the cultural geography of the United States. As State Demographer Steve Murdock portended in 2003: "The Texas of today is the U.S. of tomorrow" (quoted in Raymond 2005).

Notes

1. In addition to Jordan's significant body of work, there are numerous excellent texts that explore the culture regions of Texas (ethnic or otherwise), including Donald Meinig's classic work Imperial Texas (1969), T.R. Fehrenbach's recently updated Lone Star: A History of Texas and the Texans (2000) and Seven Keys to Texas (2001), and Daniel Arreola's Tejano South Texas: A Mexican-American Cultural Province (2002). Readers interested in exploring historical ethnic and race relations and evolving ethnoracial identities among Texans are encouraged to consult David Montejano's Anglos and Mexicans in the Making of Texas, 1836-1986 (1987), Alwyn Barr's Black Texans: A History of African Americans in Texas, 1528-1995 (1996), and Neil Foley's The White Scourge: Mexicans, Blacks and Poor Whites in Texas Cotton Culture (1999).
2. The Pew Hispanic Center (2006) estimates that Texas's population included 2.3 million foreign-born from Mexico in 2005 and that the state's total foreign-born population increased by 23 percent from 2000-2005.
3. The following tables from Census 2000 provided the data compiled for this analysis: Summary File 3, Table PCT018 (Ancestry); Summary File 1, Table PCT011 (Hispanic or Latino by specific origin); Summary file 1, Table P9 (Race); Summary file 1, Table PCT07 (Asian); Summary file 1, PCT03 (American Indian and Alaska Native); and Summary file 1, PCT10, Native Hawaiian and other Pacific Islanders.
4. Because none of the 254 counties had a high loading for either Factor 5 or Factor 6, and because these factors each accounted for less than 1 percent of the total variance in the data set, they have been omitted from the discussion.
5. It should be noted that the term "host culture" has largely fallen out of favor among social scientists, owing to its implicit marginalization of indigenous and non-white peoples and their cultural contributions.
6. The Texas Department of Human Services (2002) reports that more than 90 percent of the state's foreign-born are concentrated in just 10 metropolitan counties.
7. In 2001, major source areas of refugees who settled in Texas included Sudan, the former Yugoslavia, Cuba, Vietnam, and Iran. According to the Texas Department of Human Services (2002), approximately 4,000 refugees are resettled in Texas each year and are concentrated in the cities of Amarillo, Austin, Dallas, Fort Worth, Houston, and San Antonio.

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