A DISTRIBUTIONAL ANALYSIS OF RURAL COLORADO ENGLISH

by

LAMONT D. ANTIEAU

(Under the Direction of William A. Kretzschmar, Jr.)

ABSTRACT

This dissertation describes a study in linguistic geography conducted in Colorado using the methodology of the Linguistic Atlas of the Western States. As such, the goals of this dissertation are threefold: 1) to provide a description of Colorado English with respect to select lexical, phonetic, and syntactic features; 2) to compare the results of work in Colorado with previous work conducted in the eastern states as well as in Colorado and other western states; and 3) to use inferential statistics to show correlation between the distribution of specific linguistic variants and the social characteristics of those informants who use these variants. The major findings of this study include the observation that linguistic variants are distributed according to a power law, that numerous variants have statistically significant social correlates at all levels of the grammar, and that the relative effect of social variables differ at each linguistic level.

INDEX WORDS: Linguistic Geography, Dialectology, Sociolinguistics, Language Variation, American English, Western American English, Colorado English, Rural Speech, Kruskal-Wallis

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DEDICATION

This work is dedicated to the good people of Colorado who welcomed me into their homes and into their lives.

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This work could not have been done without the help of a great many people. First of all, I would like to thank my committee members, who provided me with the tools and the guidance to complete this work. I would like to thank Dr. William Kretzschmar, who has been such a great influence on me as a scholar and thinker and who personally guided me through several of the facets required to complete this project. Dr. Lee Pederson introduced me to the LAWS project and encouraged me to do the best work possible within the constraints of Atlas methodology; I hope that I have done as much in these pages and I want to thank him for being such a great part of the work I conducted in Colorado. I would also like to thank Dr. Diane Ranson for her professionalism, her keen eye for detail, as well as her vision of the bigger picture, and her good advice and kind words when I needed them. And I would like to thank Dr. Marlyse Baptista for her enthusiasm for the subject of linguistics, which she has handed down to so many of her students in so many ways. In addition to my committee members, I need to acknowledge two scholars who have mentored me and whose work certainly influenced this dissertation in numerous ways. First, I would like to thank Dr. Ellen Johnson, who influenced me through her book on southeastern American English and in her teaching of a class in field methods the first semester that I attended the University of Georgia. Finally, I owe a debt of gratitude to the late Dr. Keith Denning, formerly of Eastern Michigan University, who introduced me to the subject of language variation and required me to do my first sociolinguistic fieldwork. Like many of his former students and colleagues, I miss Keith dearly, both personally and professionally.

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INTRODUCTION

This study serves as a report of work conducted in the American West as part of a Linguistic Atlas of the Western States (LAWS), a project intended to provide systematic data on the speech of a region that has been relatively overlooked in the study of variation in American English. As a study in regional linguistic variation, the aims and methods of the current study are in keeping with Raven McDavid's statement that "The principle upon which linguistic geography is built is the simple one of observing differences in grammar, pronunciation, and vocabulary, determining the regional and social distribution of these differences, and seeking their historical and cultural explanations" (1958: 486). While LAWS methods generally adhere to this same principle, recent technological advancements, particularly in recording and computing, allow for the data that is collected to be used in subfields of linguistic inquiry outside the scope of dialectology, such as corpus linguistics.

Specifically, this study examines language variation in Colorado, a state that serves as the cultural center of the Rocky Mountain region of the American West. Despite its strong association with the Rocky Mountains that cover much of the state, the topography of Colorado is diverse, with its eastern third serving as part of the western boundary of American's Great Plains, and its numerous mountain valleys and plateaus serving to create variety in the state's mountainous region. The diversity of the area's landscape and its physical advantages has attracted a variety of people from regions throughout the nation and the world to make their home in the Centennial State.

The goals of this dissertation are threefold: 1) to provide a description of Colorado English with respect to select lexical, phonetic, and syntactic features; 2) to compare the results of work in Colorado with previous work conducted in the eastern states as well as in Colorado and other western states; and 3) to use inferential statistics to show correlation between the distribution of specific linguistic variants and the social characteristics of those informants who use these variants. In addition to providing a

description of an area of the United States that has received relatively little attention with respect to variation in American English, an examination of the Colorado corpus may shed light on dialect formation in general. The dissertation also serves as a description of the methodology that was implemented in Colorado toward the compilation of a Linguistic Atlas of the Western States.

CHAPTER 1

A GEOGRAPHICAL AND HISTORICAL SUMMARY OF COLORADO

Although ultimately concerned with language, this study begins with a description of Colorado in terms of nonlinguistic factors that typically have some influence on regional speech patterns, including settlement history, physical environment, and economic activity. The first part of this chapter describes the survey site in terms of location, terrain, and climate. While these do not necessarily have a direct impact on the variety of American English spoken in Colorado, especially at the levels of phonetics and syntax, they have had an impact on the types of people drawn to Colorado, and these physical attributes of the land have exerted some influence on the lexicon of Colorado English. The description of Colorado's physical attributes is followed by a historical summary of Colorado that touches briefly on its earliest explorers and inhabitants before the focus turns toward more recent Anglo-American exploration and settlement of Colorado. The chapter concludes with a brief sketch of Colorado as it is today.

The Area

Forming a perfect rectangle measuring nearly three hundred miles from north to south and four hundred miles east to west, the boundaries of Colorado delineate nearly 104,000 square miles between the 37^{th} and 41^{st} parallels and the 102^{nd} and 109^{th} meridians. The location of the state is nearly equidistant between the Mississippi River to the east and the Pacific Ocean to the west, and between the American border with Canada to the north and Mexico to the south, putting it at the center of the American West. In contrast to many of the other forty-nine American states, no geographical features were used in the creation of the borders of Colorado; rather, the state comprises portions of several topographical regions, a characteristic of the state that is often overlooked due to its strong association with the Rocky Mountains that cover two-thirds of the state. The average elevation of Colorado is approximately 6,800 feet above sea level; however, there is a great range of variation in the altitude of the state, from a low of

3,385 feet above sea level near the Colorado-Kansas border to its high at the peak of the 14,431-foot Mount Elbert. Located in the shadow of Mount Elbert, the historic mining town of Leadville is the highest city in the United States, with an elevation of 10,152 feet above sea level. A portion of the Continental Divide runs through Colorado, making the state the source of several of the most important rivers in the American West.

Colorado consists of three distinct geographical regions: The Colorado Plains, the Colorado Rockies, and the Western Slope. As part of America's Great Plains, the eastern third of Colorado is relatively flat and dry but has two natural waterways that served as important avenues of early migration into the state: The South Platte River, which flows northeasterly into Nebraska and merges with the North Platte before draining into the Missouri River, and the Arkansas River, which flows southeasterly into Kansas, Oklahoma, and Arkansas before draining into the Mississippi River. The middle of the state includes the portion of the Rocky Mountain chain with which the state is typically associated and comprises 54 mountains extending over 14,000 feet above sea level. In addition to its great peaks, the Colorado Rockies also comprise enormous valleys that form a rough line from north to south in the middle of the state – North Park, Middle Park, South Park and the San Luis Valley, the latter of which Colorado shares with its southern neighbor, New Mexico. On the western side of the Continental Divide, which also extends north to south through the approximate middle of the state, Colorado's Western Slope has a varied topography that not only includes impressive mountains and canyons but areas of rolling hills and relatively flat land at the eastern edge of the Great Basin. In addition to these three primary regions, there is the Front Range, an area of transition between the Colorado Plains and the Rockies that has traditionally linked the people and the resources of Colorado's Rocky Mountains with other areas of the United States, particularly those states to the east. The Front Range is home to most of Colorado's major cities, including its capital, Denver, as well as Boulder, Fort Collins, Colorado Springs and Pueblo, and the majority of the state's residents reside in the area.

As part of the American West, Colorado experiences some of the same general climatic conditions that differentiate the West from the eastern United States. One of the most important of these

conditions is that it is relatively arid. Although there is a high degree of variability across the state, ranging from an average of eight inches per year in the driest areas to twenty-three inches in the wettest, the average for the state as a whole (16.5 inches) is well below the average of the eastern United States. Perhaps the major factor contributing to the aridity of Colorado is its distance from the major bodies of water that have the greatest influence on its climate, with the western border of Colorado being approximately 900 miles from the Pacific Ocean and the southern border of the state being roughly 700 miles from the Gulf of Mexico. The mountainous areas of the state receive the greatest amount of precipitation, much of it being in the form of snow. The state is relatively sunny, averaging 300 days of sunshine per year, and it is generally windy in Colorado, especially throughout its plains region.

Although there are few natural large bodies of water in the West, four major rivers originate in the Colorado Rockies and run out of the state. In addition to the South Platte and the Arkansas, the Rio Grande flows out of the southern part of the state through New Mexico and into El Paso, Texas, where it turns eastward to form the boundary between Texas and Mexico and eventually flows into the Gulf of Mexico. On the western side of the Continental Divide, the Colorado River originates at Grand Lake in Middle Park and runs out of the state in a southwesterly direction through Utah and Arizona and through Nevada's Lake Mead before heading due south into the Gulf of California. The rivers of Colorado have played an important part in history of the area: They have shaped the landscape, especially on the Western Slope; they have had an enormous influence on agricultural practices in the region; and they both enabled and controlled early movement into the state by early eastern Americans.

Settlement History

Long before Europeans landed on the shores of the Americas, the area now known as Colorado was inhabited by several different Native American tribes, each with its own culture and language. In the southwestern corner of the state, the Basketmakers of the Anasazi inhabited pit dwellings near the present site of Durango around 1 A.D., and by the year 700, Anasazi lived in the cliff dwellings of Mesa Verde before disappearing from the historical record by 1300 A.D. (Roberts 2003: 73). By the 1700s, the Ute

inhabited the Great Basin area on the Western Slope of Colorado, while several Plains tribes lived in the eastern portion of the state, notably the Cheyenne, Arapaho, Kiowa, Comanche and Jicarilla Apache. As Spanish and Anglo-American explorers and settlers entered the region, the numbers of indigenous people in Colorado diminished drastically due to warfare, the spread of diseases for which they had no natural immunities, and forced relocation to reservations established by the United States government (Fritz 1941: 50-52).

Spanish explorers were the first Europeans to set foot in the area now known as Colorado, although how early they may have done so is uncertain. Many historians have speculated that Coronado passed through the southeastern corner of Colorado on his way back to Mexico in 1541 after his expedition went as far north as Kansas seeking gold in the mythical Quivera and the Seven Cities of the Cibola (Fritz 1941: 59-60; Hafen 1970: 34; Hansen 1970: 32). Juan de Archeluta led expeditions into Colorado and Kansas as early as 1664 in pursuit of runaway Indians who had been enslaved and forced to work in the Spanish mines in New Mexico. On a similar type of expedition in 1706, Juan de Uribarri found evidence of the presence of the French in eastern Colorado and reacted by claiming the entire area in the name of Spain's King Philip V (Hansen 1970: 32). It was during this period that the Spanish began building trading posts in present-day Colorado, Kansas, and Oklahoma to facilitate commerce primarily between themselves and Native Americans, in such places as present-day La Junta, Colorado.

The Spanish also explored western Colorado, mostly seeking mineral wealth, of which they found little. On one such expedition, however, the Spanish discovered and named Rio Colorado 'reddish river.' When the route the Spaniards had established between Santa Fe and the missions of Monterey, California, was blocked by Hopi Indians in Arizona, two Franciscan explorers – Fray Silvestre Velez de Escalante and Fray Francisco Atanasio Dominguez – led an expedition in search of a new route in 1776, going northward from New Mexico into western Colorado and onward to Utah. Although the expedition was eventually forced to return to Santa Fe without meeting its objective, the event would mark the first European presence in northwestern Colorado (Hafen 1976: 23-30).

The Spanish also sought to establish settlements in parts of Colorado and first did so in the San Luis Valley, a relatively flat area surrounded by the Sangre de Cristo and San Juan Mountains in southern Colorado and northern New Mexico. Although early Spanish explorers had negatively assessed the area in terms of its farming and mining potential, it was eventually discovered that the rich soil of the valley compensated for its harsh weather, and the San Luis Valley became the site of many Spanish settlements, including San Luis, San Pedro and San Acacio, all of which were established in the early 1850s. These communities still exist today and, like the towns of the valley that were created more recently, are primarily populated by Hispanic and Mormon ranchers and farmers.

The French also had an early presence in the area, venturing northwestward out of New Orleans and southwestward out of Canada and the Great Lakes region to explore this region as early as the 18th century. For the most part, these early trappers and explorers ignored the Spanish claim to the region, considering it part of LaSalle's 1682 claim of the entire Mississippi Valley from the Alleghenies to the Rocky Mountains as a French possession and naming it Louisiana (Fritz 1941: 69). Although they never made much of an effort to defend the territory, the French had an economic interest in the fur trade of the region, especially as the price of beaver pelts in the European markets hit an all-time high in the early 1800s. The French trappers in the region, who may have been accompanied by Metis – the offspring of French men and Indian women who spoke a mixed language called Michif – were eventually joined in the early 1800s by American and British fur traders who were probably the first to speak the English language in the region. As the beaver population in the Rocky Mountains began to dwindle and the fur fad in Europe waned, the Rocky Mountain fur trade came to an end, and by the mid-1800s, trappers and traders had for the most part migrated to other places or had left the profession and deserted the fur trading posts that had been created (Ubbelohde et al. 1976: 41; Hafen 1970: 90-1). By that time, however, the French had established good relations with the Native Americans in the area, particularly with the Ute people with whom they created and operated a trading post near modern-day Delta in western Colorado, and had acquired a great deal of knowledge about the region and its people, making the

early French explorers much sought after as guides, negotiators, and interpreters with the advent of American exploration in the area (Fritz 1941: 96).

The earliest populations of Colorado were significant in many ways, but perhaps the greatest linguistic legacy that the early Spanish, French and Native American inhabitants left in Colorado is in the names of places and topographical features of the state. The early presence of the French, for instance, is attested in the names of the *Cache la Poudre River*, *Bayou Salada* (now known as *South Park*) and *Fontaine Qui Bouille* (now *Fountain Creek*); additionally, the French word *butte* is used as a general term for the flat-topped hills found throughout Colorado and the West and in some of the proper names of the communities that reside near them, such as *Crested Butte*. Evidence of the earlier presence of several Native American tribes and their languages is found in names of numerous communities and counties throughout the state, including *Apache, Arapahoe, Kiowa, Ouray, Saguache* and *Uncompahgre* (see Davidson and Koehler 1931: 180-1). Spanish place names are found in nearly the same number as Native American place names in Colorado, most notably in the name of the state and in the names of towns and cities in the southern part of the state, including *Alamosa, Conejos, Huerfano, La Jara, Pueblo, San Luis* and *Trinidad* (see Davidson and Koehler 1931: 182-3). Spanish is also well attested in topographical features named by early Spanish explorers, including rivers like the *Colorado River*, the *Rio de Nuestra Senora de los Dolores*, now simply called the *Dolores River*, and *El Rio de Las Animas Perdidas en Purgatoria* (later, the *Purgatoire River*, although it is usually called the *Purgatory River*, and, often, *Picketwire* by some of the old-timers in the area). As in the case of some of the French names, some Spanish place names have undergone literal translation from Spanish to English, as in the *Greenhorn Mountains*, which were originally called *Cuerno Verde* 'green horn' (for more on place names in Colorado, see Bright 1993).

In addition to the numerous Spanish place names in use throughout the state, the Spanish language has also made an impact on general terminology used throughout Colorado and the West for entities nonexistent or rare in the eastern United States. For instance, English borrowed Spanish words for western landforms (*arroyo, canyon,* and *mesa*), types of vegetation (*alfalfa* and *pinto* [beans]) and

species of animals (*armadillo* and *coyote*, of which the latter word was originally borrowed by Spanish from the Nahuatl word *coyotl).* But it is in the terminology of ranching, which has had a long tradition in Colorado and is derived in large part from the ranching culture of Mexico, that the Spanish language has made its greatest mark on the lexicon of the West, as in the use of such words as *bronco, chaps, corral, lariat, lasso, latigo, mustang, quirt, ranch,* and *rodeo* (for more on Spanish borrowings in American English, see Marckwardt 1958: 40-7; Atwood 1962; Bright 1971; Lozano 1976). Despite the spread of western-style ranching and knowledge of its vocabulary through the popularity of the activity in film, television, and literature, these words continue to be terms that, if not used solely in the West, have a strong association with the West.

Today, Spanish is an important language throughout the United States, as it is spoken by immigrants from countries in Central and South America, in addition to Spain, Mexico and some of the Caribbean Islands. To some extent, Hispanic presence is greater in the western states than it is in other parts of the United States because of the proximity of those states to Mexico and because of a long history of Spanish settlement in the region. In Colorado, Spanish-speaking immigrants continue to settle throughout the state, particularly in metropolitan Denver and in communities in the San Luis Valley. However, the Native American languages that once thrived throughout Colorado are now typically spoken only on the few reservations in the state, e.g. Ute is spoken on the Ute reservations in the southwestern portion of the state, while other Native American languages that were once used by Native Americans throughout the area are used rarely if at all. French is primarily restricted in its use as a first language to recent immigrants or tourists.

As early groups of Native Americans, French, and Spanish were exploring and settling in places in the West like Colorado, events in eastern North America were leading to the birth of a new nation: the United States of America. The area claimed by the newly-formed country was initially restricted to the land between the Atlantic Ocean and the mountains extending from New York to Georgia, but from the beginning, Americans were pushing their borders beyond the mountains and into new frontiers in the Ohio Valley and in the area now known as the Midwest. It did not take long before Americans began

looking toward the far West as they sought to realize their "Manifest Destiny" by taking possession of land from the Atlantic to the Pacific Ocean.

The acquisition of the entire area now known as Colorado occurred in three stages spanning nearly 50 years; however, the acquisition began relatively early in U.S. history, when President Thomas Jefferson struck a deal with Napoleon Bonaparte in 1803 to acquire the French holdings in North America for the price of $15 million, or about four cents an acre. Known as the Louisiana Purchase, the deal included nearly 828,000 square miles situated between the natural boundaries of the Mississippi River to the east and the Rocky Mountains to the west, and the acquisition nearly doubled the size of the United States, prompting General Horatio Gates' famous proclamation to President Jefferson: "Let the land rejoice, for you have bought Louisiana for a song." Both leaders were criticized to some extent for the deal – Bonaparte for giving up such a vast amount of land and Jefferson for acquiring the property with few Americans having seen any of it (Hansen 1970: 33); however, both leaders had good reasons for conducting the deal. Napoleon needed money for a war he was waging at the time against the British, and he believed that Americans would eventually take possession of the land regardless of the French claim to it; furthermore, the French had seen little profit in these holdings outside of the once-lucrative fur trade, which was beginning to decline by the 19th century. Jefferson's position, on the other hand, was that despite a lack of knowledge about the region, the acquisition of the land was vital to any plans the United States had of finding a route to the Pacific Ocean or, even more importantly, of extending the nation's domain from the Atlantic to the Pacific (Sheehan 2003: 348).

Immediately after striking the deal with Napoleon, Jefferson appointed Meriwether Lewis and William Clark to lead an expedition into the new territory in order to explore the new lands and to reach the Pacific Ocean. Taking a northerly route along the Missouri River through North Dakota, Montana, Idaho, and a strip of land that now serves as the border between Washington and Oregon, Lewis and Clark reached the Pacific in November 1805, and returned to St. Louis in September 1806. In addition to discovering a route to the Pacific, the Lewis and Clark Expedition proved beyond a reasonable doubt the value of Jefferson's deal in terms of natural resources. Although the expedition never ventured so far

south as to enter the region that is now Colorado, its success paved the way for more southern expeditions, the first of which commenced at approximately the same time as Lewis and Clark and their team were making their triumphant return to St. Louis.

The first American expedition into the Colorado region was led by Lieutenant Zebulon Pike, and it had several purposes. One was to establish relations with Indian tribes known to inhabit the area; a second was to document the plants, animals, and geographical features of the region; a third was to find the sources of the Arkansas and the Red River in order to settle a dispute between Spain and the United States over which one was the true southwestern boundary of the Louisiana Purchase; and a fourth was to gather intelligence on the Spanish defenses along the border (Fritz 1941: 74-75). In November 1806, Pike reached what is now the eastern border of Colorado and, a few days later, first saw the famous mountain now bearing his name. After setting up camp at the present site of Pueblo on the Arkansas River, Pike led his men westward into the mountains, eventually crossing the Sangre de Cristo Mountains and building a stockade on the Conejos River between the towns of La Jara and Alamosa in the San Luis Valley. Soon after raising the American flag over the camp, Pike and his men were arrested by Spanish soldiers and taken to Santa Fe for questioning and then were taken deeper into Spanish territory to Chihuahua, where they were held for nearly a year before being released at Natchitoches in Orleans Territory in July 1807.

In 1819, the United States reached an agreement with Spain, explicitly making the southwestern border of the United States the Arkansas River. The following year, the second great American expedition into Colorado was led by Stephen Long with the objectives of locating the headwaters of the Arkansas, Red, and Platte Rivers and discovering appropriate sites for military outposts on the new frontier. The trip was widely regarded as a success, but it was at the end of this expedition that Long made his infamous assessment of the area of the United States now known as the Great Plains as being:

> wholly unfit for cultivation, and of course uninhabitable by a people depending upon agriculture for their subsistence…This region, however, viewed as frontier, may prove of infinite importance to the United States, inasmuch as it is calculated to serve as a barrier to prevent too great an extension of our population westward, and secure us against the machinations or incursions of an enemy, that might otherwise be disposed to annoy us in that quarter (qtd. in Fritz 1941: 80-1).

Accompanied by a map on which the expedition's botanist and surgeon, Dr. Edwin James, had circled the Great Plains and labeled the area "The Great American Desert," the expedition's characterization of the region had a profound effect on the American perception (Fritz 1941: 80), especially the nation's farmers, who recognized that the same agricultural methods that had been used in the Midwest could not be used in a region that acquired less than twenty-two inches of rain annually (Pederson 2001: 283).

A year after Long's expedition, Mexico won its independence from Spain, but the southwestern border of the United States remained intact. The same year, William Becknell became the first person to travel the route that would eventually be called the Santa Fe Trail. Beginning in Independence, Missouri, and ending in Santa Fe, New Mexico, the trail was an important trade route comprising two different branches: The Mountain Branch ran parallel to the Arkansas River into Colorado, reaching Bent's Fort (1829-1852) near La Junta before heading southwest through Trinidad, over Raton Pass and merging with the southern branch of the trail to arrive in Santa Fe, and the southern branch, known as the Cimarron Cutoff, divided from the Mountain Branch at Dodge City, Kansas, going through the panhandle of Oklahoma before heading west into New Mexico. Although the southern route was shorter and the terrain less difficult than the Mountain Branch, there was greater heat, less water, and more danger of attacks by Native Americans, particularly by the Comanche. The Santa Fe Trail played an important part in the development of Colorado, not only in the trade opportunities it created in communities along the route, but also in providing a path for early settlers, especially during mining's boom years in Colorado.

The third explorer to lead an expedition into Colorado eventually led five expeditions into Colorado over the course of a decade for a variety of purposes. On his first expedition in 1842, John C. Fremont briefly explored the area around the South Platte River in northern Colorado, as the primary motivations of his first trip were to explore the region between the Missouri River and South Pass north of Colorado and to improve the route to Oregon. On subsequent expeditions, however, Fremont spent a great deal of time exploring the Colorado Rockies to determine the best locations for establishing railroad routes and communication lines over mountain passes. In addition to finding new trade routes, Fremont and his men were also responsible for the documentation of several new species of plants and animals,

some of which bear the name of Fremont, e.g. *Fremont's squirrel (Sciurus fremonti)* and *Fremont's geranium*. (For a more comprehensive list of the discoveries of Fremont and other early explorers in Colorado, see Fritz 1941: 83-4). Fremont's expeditions were also important in terms of the people who went on them, including the future governor of Colorado Territory, William Gilpin, and the famous trader and trapper Kit Carson, who served as a guide for Fremont's 1843 expedition.

The second stage of the acquisition of Colorado by the United States began with the admission of Texas into the Union in 1846. The Republic of Texas, which had seceded from Mexico in 1836, claimed as its border the Rio Grande, as well as a line running northward from the source of the river in the San Juan Mountains to the 42nd parallel in present-day Wyoming. The admission of Texas into the Union, therefore, extended the United States border beyond the Continental Divide to include part of the San Luis Valley and a region of Colorado known as the Western Slope, which is now dotted with such communities as Gunnison and Steamboat Springs. The final stage of acquisition came with the United States victory in the Mexican War of 1848 and Mexico's agreement to cede to the United States all its territory north of the Rio Grande as one of the terms of the Treaty of Guadalupe Hidalgo. Since that agreement, the United States has been the sole possessor of the entire area that is now the state of Colorado.

In the years leading up to its becoming its own territory, parts of Colorado were claimed by several different territories. Beginning in 1805, the eastern third of Colorado was part of Louisiana Territory, which changed its name to Missouri Territory when Louisiana was admitted into the Union as the 18th state in 1812. Missouri Territory existed until 1820, when a part of the territory entered the United States as the state of Missouri and the remainder, including the eastern plains of Colorado, became Unorganized Territory, with the area in Colorado often referred to as Pike's Peak Country. In 1850, the land in Colorado west of the Continental Divide was organized as part of Utah Territory and the area south of the Arkansas River aligned with New Mexico Territory. In 1854, eastern Colorado was divided into two parts with the southern portion aligning with Kansas Territory and the northern portion aligning with Nebraska Territory.

Colorado's existence may have always been resigned to that of an area constantly shuffled among various territories before one of them gained statehood had it not been for the discovery of gold in the Pike's Peak region. The belief that gold deposits existed in the area had been held for many years, but physical evidence of the existence of much gold in the area eluded those who searched for it. The Spaniards, for example, had suspected there was gold in the Rocky Mountains and had deployed several mining expeditions to the area, but these expeditions discovered little in the way of mineral wealth. There is evidence in the historical record that some early fur traders and trappers discovered small amounts of gold in the mountains; for instance, the journals of the Pike Expedition contain an entry describing an encounter in New Mexico with a man who showed Pike gold that he claimed to have found in Colorado (Fritz 1941: 77). But it was not until the California Gold Rush in 1849 that prospectors began seriously considering mining in Colorado. While many eastern Americans journeyed to the minefields of California by setting out on ships going southward on the Atlantic Ocean to the Panama isthmus in Central America before heading northward on the Pacific Ocean to San Francisco, some opted to take the journey overland across the North American continent across the Plains, over the Rocky Mountains and through the West. Of those taking the overland route, some prospected along the way and found small amounts of gold in such Colorado waterways as the Cache la Poudre River before continuing on their way to the minefields of northern California (Fritz 1941: 104). On their return to the East, some of the more resilient miners retraced their routes through Colorado and found small deposits in Cherry Creek, which runs roughly through the middle of the state in present-day Denver.

The success of placer mining in the small streams of Colorado set in motion the first in a succession of mining booms in the area in the second half of the 19th century, and two mining camps were created on opposite sides of Cherry Creek at its confluence with the Platte River: St. Charles and Auraria. The former evolved from a camp to an important service and supply center for the burgeoning mining industry in the mountains, and eventually its name was changed to Denver. A branch of the U.S. Mint opened in Denver in 1863 as a repository and processing plant for gold and other precious minerals that were being mined, and the city grew in size and importance, becoming the capital of Colorado Territory

in 1867. Conversely, the growth of Auraria, named after a mining town in Georgia, was more limited, and the community was eventually absorbed by the city of Denver. Today, the site of the original Auraria community serves as the foundation of the Auraria Campus, which is home to the University of Colorado at Denver, Metropolitan State College of Denver, and the Community College of Denver.

In January 1859, three major deposits of gold were discovered in the mountains of Colorado: One by George A. Jackson in Idaho Springs; another by John H. Gregory in Black Hawk; and a third by a party of men at Gold Hill in Boulder Canyon (Fritz 1941: 116). Of these strikes, only the Gold Hill discovery was immediately publicized; nevertheless, the gold rush in the mountains of Colorado began in the spring of 1859 and gave rise to numerous mining towns throughout the Colorado Rockies. Many of these towns followed a boom-and-bust pattern, reflecting fluctuations in the market value of precious metals as well as the depletion of target minerals in a given area and the increasing costs of mining the deeper that mines tunneled into the ground. The town of Central City, for instance, boasted a population in excess of ten thousand at its peak in the 1880s and even had its own opera house; another town in Gregory's Gulch, Black Hawk, which is about a mile to the east of Central City, had its own smelter built in 1867 and had a population of 1,500 at its peak in 1880. By the early 1900s, however, the populations of both towns had declined to a few hundred residents apiece, and these numbers continued to dwindle throughout the 20th century. The passage of a 1990 state law allowing limited-stakes gambling in Colorado turned both Black Hawk and Central City, as well as Cripple Creek, into gambling towns, with some of the revenue from this venture earmarked for historic preservation of the towns.

Although many mining towns that sprang up in Colorado enjoyed a great deal of success, the odds for long-term success were much greater for towns established as – or, like Denver, transformed into – service and supply centers for the mining towns, providing food and tools to miners, serving as processing and shipping centers for the products that came out of the mountains, and facilitating communication between the mining towns and other areas. Located ten miles west of Denver in the foothills of the Rocky Mountains, Golden was founded in 1859 as a supply town comprising mills, breweries and smelters and was in close proximity to the mining towns of Central City, Black Hawk and

Idaho Springs. With Denver, Golden served as the co-capital of the Colorado Territory from 1862 until 1867. Golden later became home to the Colorado School of Mines and Coors Brewery and has a close proximity to popular destinations like Red Rocks Amphitheatre in Morrison.

Another town created early in Colorado's history was Boulder, which is approximately 30 miles to the northwest of Denver. In search of gold in the Boulder Creek and in the foothills and mountains in its surroundings, Anglo-American prospectors first visited the present site of the city of Boulder in 1858, and the town was incorporated as Boulder City in 1871. Boulder seemed destined to play an important role in the education of residents of Colorado from early on. In 1876, Boulder High School became the first high school with a graduating class in the Territory of Colorado. Plans for the University of Colorado began in 1861 with the intention that it would be a mining school, but instead, the Colorado School of Mines was built in Golden in 1873. It was not until Colorado was granted statehood that the University of Colorado became a reality but with a broader curriculum than had first been envisioned. Members of the first freshman class at the university matriculated in 1878, and the first graduation was held in 1882. Now a major research university, the University of Colorado is partly to credit for the presence of such institutions as the National Center of Atmospheric Research and the National Institute of Standards and Technology in Boulder.

Although a state constitution for Colorado was drafted in 1859, it encountered serious opposition, and even proponents were skeptical that statehood would be granted to such a small population. Consequently, the early inhabitants of the area opted for territorial status, and the new territory was named Jefferson Territory in 1859. On February 28, 1861, residents decided to rename the area the Territory of Colorado after the southwesterly-flowing Colorado River. At its first meeting, the government of the Territory of Colorado, which had the same external boundaries as it now has, was divided into 17 counties, and William Gilpin, who had heavily promoted the new territory ever since accompanying Fremont on one of his expeditions, was appointed as the first governor of the Colorado Territory, serving from 1861 until 1862. One of the early disputes among members of the territorial government concerned whether the capital of the territory should be located in Colorado City, Denver, or

Golden, with the latter two towns sharing the status of capital for several years (Fritz: 1941: 199). The majority of government assemblies were held in Denver, however, and its absorption of the neighboring town of Auraria (Ubbelohde et al. 1976: 83-84) and the creation of its own railroad line hooking into the Union-Pacific in Cheyenne, Wyoming, were just two of the factors leading to Denver being named the sole official capital in 1867.

Despite its new territorial status and its mining successes, the population of Colorado began to dwindle by the mid-1860s due to several factors. One was that miners were being drawn away from Colorado mines to profitable mineral deposits discovered in other areas of the West, e.g. the Comstock lode in Nevada. Some miners, having grown discouraged when the fortunes in mining that had been advertised failed to emerge, simply abandoned mining and headed home. Additionally, many men were drawn out of the mines and into the ranks of the Union and Confederate armies during the Civil War. The city of Denver suffered great losses from a fire in its business district in 1863 and a Cherry Creek flood in 1864, and, partially as a result of these catastrophes, the population of Denver increased by only ten people between 1860 and 1870. In spite of this minute growth, Denver remained Colorado's largest city with 4,759 people. In addition to Denver, the mining camps of Central City (2,360), Black Hawk (1,038), Nevada (973), and Georgetown (802) comprised the five largest concentrations of population in Colorado, according to the 1870 U.S. Census.

By the early 1860s it was apparent to many of the leaders and residents of the territory that continued growth and permanent settlement could not depend entirely on mining but would require development in other economic areas, such as ranching and farming, both of which had been practiced in Colorado during its gold rush on a limited basis but would need to greatly expand to meet the demands of a growing population. The early livestock industry in Colorado had largely consisted of Texas ranchers driving cattle northward into Colorado to supply mining camps with beef, but as railroad lines from the East began extending westward into Colorado, some of the great Texas cattlemen began driving their livestock to meet the railheads in eastern Colorado towns like Lamar, Brush, and Burlington rather than those in Kansas. The growth of a less transient population in Colorado led to the development of

permanent ranches in the area, largely following the methods of ranching practiced in Mexico and Texas, and Denver rose to prominence as a regional center for livestock trading and beef processing.

Taking advantage of the Homestead Act of 1862, by which settlers could claim 160-acre tracts of land provided they developed and maintained the property, farmers also began settling in the region, and faced their greatest challenge in the arid conditions that differentiated the West from the eastern United States. During the years between 1869 and 1872, several agricultural communities were established in the territory, particularly in northern Colorado, during a time of spreading utopian socialist ideals, railroad construction that provided access to cheap land in the region, new laws being written by the Colorado Territory encouraging cooperation and immigration, and competitiveness of farm produce in a region with a steadily increasing population (Fritz 1941: 228-31). Of these communities, which included the Chicago Colony, the Chicago-Colorado Colony, the St. Louis Western Colony and the Southwestern Colony, the Union Colony probably enjoyed the greatest success and had the greatest influence on agricultural practices throughout the region due to leader Nathan Meeker's vigorous experimentation in a variety of irrigation methods. Not only did these practices have a profound effect on northern Colorado, but also on the manner of agriculture practiced throughout the western U.S.

In addition to the difficulty of raising crops in the arid conditions of the West, farmers from the East who transplanted themselves in the Colorado region faced other challenges as well, particularly in the form of conflicts with other social groups competing for the land. One of these groups comprised the various Native American tribes that used the land as hunting and camping grounds. Native Americans were affected greatly by homesteading eastern Americans, initially by acquiring diseases carried by Anglo-Americans during the first wagon trains by Anglo settlers into the West. The movements of settlers across the Plains also disrupted the buffalo migrations that the Plains tribes relied on for food and clothing. Later, Anglo settlers engaged in direct warfare with Native Americans – most notably in Colorado at the Sand Creek Massacre of 1864, in which American soldiers attacked women and children in their eastern Colorado camp – and finally American policies effectively relegated the Cheyenne and the

Arapaho to Indian Territory in the fall of 1867, which facilitated the movement of Anglo-Americans into and through eastern Colorado.

Aside from their conflicts with Native Americans, farmers also competed with the area's cattle ranchers, who had become accustomed to an open-range system of livestock ranching on the prairie lands and had little regard for lands being developed as farmland by incoming homesteaders. Fortunately for the farmers, ranchers began losing the economic and political power since they had acquired in the second half of the 19th century due to several factors. First, there was conflict within the ranching industry, especially between members of the cattle industry and the sheep industry, particularly centering around the complaints of cattlemen that sheep rendered grasslands useless because they left the grass short and they damaged grazing lands with their hooves and wool. These complaints led to vicious fighting between those who raised sheep and those who raised cattle, with the overall result being the movement of sheep to the Western Slope (Colorado Writers' Project 1941: 63). Overgrazing on the prairie, hard winters and a drought late in the 1800s also took a toll on the cattle industry in Colorado. But the hardest blow dealt to ranchers using an open-range system of raising livestock came from the invention of barbed wire by Illinois farmer Joseph Glidden in 1874 and its subsequent implementation on the prairie, including privately-owned lands in Colorado.

Another industry that was initially developed to serve the early mining industry but later took on a life of its own was the railroad industry, which encountered formidable engineering challenges in Colorado because of the harsh terrain in the mountains beyond the Front Range. One of the ways in which the railroad industry dealt with these challenges at first was to avoid them. For instance, when planners for the Union-Pacific Railroad were planning the route from Omaha, Nebraska, to San Francisco, California, they considered a wagon trail and mail route over the Colorado Rockies called Berthoud Pass, but given its altitude of 11,316 feet above sea level, roughly the same altitude as other Colorado mountain passes, planner opted to go instead through Cheyenne and over the Continental Divide at the relatively gentle South Pass. Additionally, many of the nation's major railway lines ended in eastern Colorado, and passengers and cargo were transferred to local rail lines or stagecoaches.

Within the state, however, local planners and developers in the railroad industry enjoyed a number of successes, especially in the relatively flat plains section of Colorado. The first railroad in the state was the Colorado Central, the main line of which ran from Denver to Golden and north to Cheyenne, and later, the Denver Pacific Railway was built to connect Denver directly to Cheyenne. The real challenges in Colorado railroading, and subsequent innovations to overcome these challenges, however, were in the mountainous regions, where railroad developers began implementing narrow-gauge (three-foot) rails, the advantages of which "were lower costs of construction, operation, and maintenance; greater curvature and higher gradients; larger payloads in proportion to weight of rolling stock; and ability to penetrate areas closed to broad-gauge lines" (Anderson 1976: 129). The most significant of these lines was the Denver and Rio Grande Railroad, a project conceived by General William Jackson Palmer as a line that would connect Denver – a city of fewer than 5,000 people at the time of Palmer's plans – to El Paso, Texas, before going on into Mexico City. Aside from its vast length, the Denver and Rio Grande was innovative in that it primarily ran northward and southward, as opposed to the eastward and westward direction taken by its competitors. Although a number of difficulties arose that kept the project from realizing Palmer's original vision of a line into Mexico, the rail project did succeed in linking several Front Range towns, including Denver, Colorado Springs, Pueblo and Walsenburg, before heading westward into the mountains, providing railway transportation to many communities, as well as creating several communities, including the southwest town of Durango. Eventually, a second Denver and Rio Grande Railroad line was built that went westward out of Pueblo, past Grand Junction, and on to Salt Lake City. Lines like the Denver and Rio Grande Railroad made Colorado the center of narrow-gauge railroads and by "1873, over half the narrow-gauge mileage in the United States was in Colorado" (Anderson 1976: 129). Such improvements in transportation meant greater opportunity for people to visit and potentially settle throughout Colorado, and it improved communications throughout the region.

Although the Denver and Rio Grande Railroad constituted one notable contribution that Palmer made to Colorado life, he also planned the development of a resort town along his railroad line that would ultimately make an even greater impact on the state. Founded in 1871 and originally named Fountain

Colony, the town of Colorado Springs relied on its close proximity to such natural wonders as the Garden of the Gods and Pike's Peak to attract tourists by constructing fine restaurants and hotels, including the world-class Broadmoor Hotel. Colorado Springs also benefited from a growing health industry, as, because of its aridity, Colorado became a haven for those suffering from ailments like tuberculosis, and sanitoriums for the treatment of the disease were built throughout the area, especially in Denver and Colorado Springs. By 1880, Colorado Springs was the fourth largest town in Colorado with 4,226 people, and its population increased with strikes in the nearby mining town of Cripple Creek, developments in the tourism industry, and the construction of several military installations, for which the town is most well-known today.

As the economy of Colorado diversified, the booms and busts of the mining industry no longer had the same effect on the economy and the population of the territory as they once had. By the mid-1870s, the population of Colorado had grown to more than the 135,000 residents then required for statehood, and Colorado was admitted into the Union as the 38th American state on August 1, 1876, earning it the nickname "The Centennial State." Although there would be some major changes in government and policy as a result of statehood, several facets of the territorial infrastructure remained intact; for instance, when Colorado became a state, the presiding territorial governor and capital – John L. Routt and Denver, respectively – became the state's new governor and capital. By the time of its induction, the 17 counties of the Territory of Colorado had been subdivided into 26 counties, and these divisions were recognized by the new state as well.

The year following Colorado's induction saw the publication of Ferdinand Vandeever Hayden's *Atlas of Colorado* with its primary motivation being to introduce the state and its natural wonders to readers through maps, photographs and drawings. As the primary photographer of the venture, William Jackson carried his bulky camera equipment on horseback throughout the region, becoming the first to capture on film such sights as Mesa Verde, the Mount of the Holy Cross, the Black Canyon of the Gunnison, and other Colorado natural wonders. Jackson's black-and-white photographs, as well as the circulation of the stories of his harrowing experiences in obtaining them, created a great deal of

excitement about the new state. The publication also had some effects more linguistic in nature: "One achievement of the atlas was to bring permanence to the existing nomenclature that had accumulated throughout the ages" (Sprague 1976: 80). Additionally, as they sought to label all the topographical features included on the maps that they possibly could, Atlas workers created place names, many of which are still in use.

With its induction into the United States, favorable publicity generated by such sources as the *Atlas of Colorado*, and notable development in several of its industries, Colorado began attracting great numbers of settlers, far exceeding the national rate of population growth. From 1870 to 1880, Colorado's population increased by 388.5% in comparison to an increase in the overall United States population of 30.2%, and from 1880 to 1890, the population of Colorado increased 112.1% compared to the national average of 25.5%. Although the differences between national and state growth would be most extreme during these two decades, they would reflect a general pattern of Colorado growth exceeding the national rate, sometimes significantly so, as highlighted in Table 1.1:

Table 1.1: Comparison of Population Increases in the U.S. and Colorado, 1870-2000

Census Year	United States Population	Percent Increase	Colorado Population	Percent Increase
1870	38,558,371	22.6	39,864	-------
1880	50,189,209	30.2	194,327	388.5
1890	62,979,766	25.5	412,198	112.1
1900	76,212,168	21.0	541,483	31.4
1910	92,228,496	21.0	799,044	47.6
1920	106,021,537	15.0	939,191	17.5
1930	123,202,624	16.2	1,035,791	10.3
1940	132,164,569	7.3	1,123,296	8.4
1950	151,325,798	14.5	1,325,089	18.0
1960	179,323,175	18.5	1,753,947	32.4
1970	203,302,031	13.4	2,209,596	26.0
1980	226,542,199	11.4	2,889,733	30.8
1990	248,709,873	9.8	3,294,394	14.0
2000	281,421,906	13.2	4,301,261	30.6

Source: U.S. Census Bureau

As reflected by the figures in this table, there has only been one decade since Colorado was inducted into statehood that its population growth did not exceed the population growth of the United States as a whole

(1920-1930), and the Colorado population figures show growth far exceeding the national rate ever since 1940.

The settlers who arrived in Colorado came from a variety of places, especially from other regions of the United States. Although from the time of the Colorado Gold Rush American settlers had arrived from all regions of the United States, Goodykoontz (1948: 42) reports that

> exclusive of those born in the state, [Americans in Colorado] have come mainly from a compact block of states extending from New York and Pennsylvania on the east to Kansas and Nebraska on the west. In 1860 Ohio stood first in the number of transfers to the Pike's Peak country; Illinois, New York, Missouri, and Indiana followed, in that order. But all parts of the country – New England, the deep South, and the Pacific Coast – were also represented.

The trend of heavy Midwestern migration to Colorado continued through the 20th century, and only in the latter half of the century was Midwestern migration rivaled by migration from California and Texas.

While most people who migrated to Colorado did so primarily for the economic and homesteading opportunities the new state offered, the Mormons moved into parts of Colorado as part of a westward movement for religious freedom. Although the Mormon population of the United States is often associated with Salt Lake City, Utah, Mormon populations are scattered throughout the western United States (see Meinig 1965); in Colorado, Mormon populations are most prevalent in the small towns of the fertile San Luis Valley, particularly two that were founded as Mormon settlements. The first of these settlements was Manassa, which was built in 1878 by Mormons arriving primarily from Georgia and Alabama, and the community is best known as the birthplace of the great heavyweight boxing champion Jack Dempsey, also known as "the Manassa Mauler." In 1880, a second Mormon colony was established in the San Luis Valley by Mormons who had left Salt Lake City to lend support to the Manassa community. Known as Ephraim, this settlement was originally built near the confluence of the Rio Grande and Conejos River, but for a variety of reasons, including health concerns, the town was relocated to higher ground in 1885 and was renamed Sanford. Manassa and Sanford exist today as small

farming towns with populations of just over 1,000 and 800, respectively; residents of these towns are primarily Mormon and approximately half the population of each town is Hispanic.

Like the Mormons, African-Americans also migrated to Colorado and other parts of the West in search of freedom, specifically in their case from the bonds of slavery and discriminatory Jim Crow laws prevalent in the eastern United States. The presence of African-Americans in Colorado is noted as early as the 1820s, when Jim Beckwourth worked in the Rocky Mountains as a fur trapper and trader and, later, headed a trading post on the Arkansas River. During the Colorado Gold Rush, African-Americans worked in mines or in mining towns, often as the personal property of other miners. After the Civil War, some groups of freed slaves left the eastern United States to establish towns in the West, including the town of Deerfield, Colorado, which was located in the northeast quadrant of Colorado. Other African-Americans joined the U.S. military and arrived in Colorado as so-called "buffalo soldiers," who were often employed in Colorado due to their ability to negotiate with Native Americans. The African-American population in Colorado has always been relatively small, perhaps due to a historically strong presence of the Ku Klux Klan in Denver and Longmont. There was, however, a sizable African-American community in Denver's Five Points neighborhood, but this area has undergone considerable gentrification in recent years, and its population has become increasingly composed of white professionals. In 1991, Wellington Webb, an African-American born in Chicago but raised in Colorado, was elected the mayor of Denver for the first of three successive terms, overseeing much economic revitalization in the city's downtown area.

Since the days of the Colorado Gold Rush, there has been a significant foreign-born population in the state. From the mid-to-late-19th century, many immigrants arrived in the region to take advantage of opportunities in mining, smelting, farming and the railroad industry. Early groups included German, Swedish, Slavic, Russian, Hungarian, Polish and Irish populations from Europe; Chinese and Japanese from Asia; and Lebanese from the Middle East. While some of these immigrants arrived directly from their mother countries, others had previously lived and worked elsewhere in the United States, for example, in the mines of California or in Michigan's Upper Peninsula, and in the cities and mining towns

of Colorado in which they resided, there was a tendency for immigrant groups to create tight-knit neighborhoods and communities among themselves, as in the concentrated populations of Greeks and Italians in Pueblo and Denver. Immigrant farmers, however, sometimes created their own colonies, the best example of which is the Ryssby Settlement, a large Swedish colony founded in 1872 in Boulder County that has since been absorbed by Longmont.

Among the Colorado immigrant population, Germans comprised the largest group, constituting nearly 18% of the 39,790 persons of foreign birth reported by the Census of 1880. Sizable populations of Germans lived in Denver and in the farmlands northeast of Denver; many of the early sugar beet farmers along the South Platte and Arkansas Rivers were German-Russians who had practiced such farming in the Volga region in Europe. Germans arrived in such numbers in the 1870s that Colorado laws were printed in German, in addition to English and Spanish, from 1877 to 1889 (Jackson 1956: 2-3), and from its early days as a territory until World War II, a large number of German newspapers were published in Colorado.

While new settlers were arriving in the area, two populations with a relatively lengthy history were undergoing very different experiences in the new state. The Hispanic populations of the San Luis Valley continued to farm and ranch as they had for many years, and Hispanic populations continued settling in the state, especially in the San Luis Valley in the south-central part of the state and in cities like Denver and Pueblo, where they often worked in ranching, farming or in the smelter industry. Native American tribes, on the other hand, continued to lose land and to undergo relocation. By the time of statehood, the tribes that had roamed throughout eastern Colorado had been relocated to reservations in Wyoming and Oklahoma, and the Utes in western Colorado had been granted land in the southwestern corner of the state. But many Coloradans believed the land granted to the Utes to be excessive in size, and there was speculation that the land had substantial holdings of silver and other minerals. During the 1870s and 1880s, therefore, there were many revisions to treaties struck by the United States government and the Utes with the effect that the size of Ute reservation was decreased, and much of the land in southwestern Colorado was eventually opened to mining and farming to Anglo-Americans.

Although Colorado diversified in the decades after the original gold rush, mining was still important to its economy, and the adoption of the Bland-Allison Act in 1878, which increased the value of silver by requiring the U.S. Treasury to purchase and mint 2 to 4 million dollars of silver each month, set into motion a second mining boom in the state. One effect of this boom was to revitalize towns that had prospered during the gold rush but had begun to decline, as silver is often found in combination with such minerals as gold, copper, lead, and zinc and a high premium on silver can make the mining of these other minerals more profitable (Colorado Writers' Project 1941: 60). In addition to the known presence of minerals in their vicinities, these older towns were also attractive because a mining infrastructure was already in place. The best example of such a town is Leadville, which was the second-largest town in Colorado in 1880 (pop. 14,829). Known as the Cloud City because of its high altitude, Leadville had grown to prominence with the discovery of significant veins of gold in the area in 1860, and during its boom days, Leadville was reported to have approximately 30,000 inhabitants. With the silver boom, Leadville revitalized and, in later years, survived on discoveries of lead and molybdenum. With a current population of around 2,500 people, some mining is still done in and around Leadville, but the town also draws visitors interested in the colorful history of the town, which Leadville has gone to some lengths to preserve in its architecture and its creation of several museums. In addition, Leadville provides housing for seasonal workers in neighboring ski resorts.

The silver boom also led to the creation of several new mining towns in Colorado. Aspen was one such town, as prospectors set out from Leadville to discover in Aspen one of the richest silver lodes ever found. There were also several towns founded in the San Juan Mountains in the southwest quadrant of the state during the silver boom, including Silverton and Creede. By 1880, Silverton was the third largest town in Colorado (pop. 5,040), and nearby Durango was prospering as a railroad town with a terminal on the Denver and Rio Grande Railroad and as a supply center to the area's mining towns. Although Silverton and Creede barely survive as towns today, Durango thrives as a retail center for the area's tourists and skiers.

The smelting industry also benefited from renewed interest in mining, and several towns developed as important industries. One town that developed during this time was Pueblo, which, due to its location at the confluence of Fountain Creek and the Arkansas River, had already had a relatively long history. Spaniards traveling northward from New Mexico in pursuit of runaway slaves or searching for gold during the 17th century were familiar with the location and used it as a place to meet and trade with Native Americans; one of these Spaniards, Juan de Uribarri, is credited with giving the town its name. Americans encountered the place early in their exploration of the region, as Pike built a camp there during his expedition in 1806. But Pueblo became one of Colorado's major cities only after mine owners began building Pueblo's first smelters in 1881 as a way of realizing greater profits by processing ore locally rather than shipping it elsewhere**.** Once construction of the smelters was completed, the city attracted many laborers, particularly immigrants, including Latinos, Italians, Slaves, Poles, and Czechs. The smelters remained active through the first half of the 20th century and were particularly productive during World War II. The town retains its ethnic diversity and has one of the largest concentrations of Hispanic people in the state.

Much of the renewed interest in Colorado mining waned in 1893, however, as the United States leaned toward a gold standard. With the repeal of the Sherman Silver Purchase Act of 1890, which had replaced the Bland-Allison Act and had required the U.S. Treasury to purchase 4,500,000 ounces of silver at market value each month, the value of silver plummeted and resulted in the Panic of 1893, or the "Silver Panic," sending the mining towns of Colorado and the West into decline. The defeat of William Jennings Bryan – a presidential candidate running on a platform of "free silver" in 1896 – was the final blow to silver advocates, and the U.S. Treasury officially adopted a gold standard in 1900. The move toward a gold standard meant some increase in the demand for the precious metal, but profitable gold mining requires locating deposits of gold close to the surface and many of the once-profitable gold veins in Colorado had been depleted near the surface.

One area of Colorado that had been subject to rumors for years concerning the presence of gold was Cripple Creek, but until the 1890s, the only gold discovered in the area was found later to be "salted,"

a ruse by which metals are planted in an area by landowners in an effort to sell the land at high prices. Gold was finally discovered in Cripple Creek in 1891 by a rancher named Bob Womack. The rush to Cripple Creek was slow, perhaps because of its lava-covered terrain, which made digging and drilling difficult, but once mass production began, Cripple Creek became one of the richest mining camps in the world, producing nearly two-thirds of Colorado's total gold production in 1900. Part of the success of Cripple Creek may have been in its organization: At one time, the Cripple Creek mining district comprised 11 mining camps connected by an electric tramway system. Its population was reported to have reached 35,000 at one time, and it was one of the five largest cities in Colorado in 1900. Its reputation at the height of its popularity was that of a tough and colorful town, a reputation enhanced by the presence of two famous heavyweight champions: Jack Johnson, the first African-American heavyweight champion of the world, who worked as a bouncer at one of the many saloons in town, and Jack Dempsey, who worked in the local mines and fought one of his bouts in Cripple Creek. Cripple Creek gold veins were productive for decades before being depleted and the town's population waxed and waned several times during those years. Today, it is a town of just over a thousand people, many of whom are retired or work in tourism or in the gambling industry that draws visitors to the town.

Often overlooked in the literature on Colorado mining history was that coal mining was also an important activity in the state and was particularly important to the development of the southernmost stretch of Colorado's Front Range and is perhaps most strongly associated with the city of Trinidad. Located along the Front Range in the extreme south, Trinidad has had a long history as part of the Santa Fe Trail, but there was no real permanent settlement at the site of Trinidad until 1859. Eventually, Trinidad gained importance as a trade center and shipping point for the numerous coal-mining camps that began operating in the foothills west of the settlement in 1867, including the camps that later became the towns of Primero, Segundo, Tercio, and Weston. Trinidad suffered greatly during the economic depression of the late 1800s but rebounded with an increased demand for coal throughout the United States during World War I. Some of the other towns associated with coal in the state are Crested Butte and Cokedale.

In addition to fluctuations in the markets, mining in Colorado endured hardships similar to those encountered in other mining regions. Mining disasters and harsh working conditions helped give rise to organized labor movements, which often served to increase tensions between mine owners and mine workers. Occasionally, government at the state and federal level had to be called in to settle these disputes. Two major strikes occurred at Cripple Creek, one in 1894 and another from 1903-1904; another occurred in Trinidad from 1903-1904 and another at Colorado City in 1903. The strike from 1913-1914 at the Ludlow coal camp outside Trinidad turned tragic when federal troops were called in; five miners and a soldier died during the conflict, and by its end, two women and eleven children had also been killed, when the tent colony in which the striking miners and their families were living was set afire by the federal militia in the spring of 1914. Such tragedies and the increasing demands of labor, in addition to increasing costs associated with separating minerals from ore as mines are depleted, contributed to the higher costs of mining and resulted in many mines being closed during the 20th century.

According to the Colorado Writers' Project (1941: 50), "[a]s the nineteenth century waned, Colorado discovered that its greatest source of wealth lay not in its mines but in its farms." The boom in Colorado farming was the product of several factors, including technological advancements in plowing and in irrigation, the construction of more railroads to take prospective farmers to undeveloped land on the frontier, and, with the construction of sugar refineries in Rocky Ford and Grand Junction, the development of the sugar beet industry, which attracted to the area German-Russians with valuable experience in raising the crop. Just as supply centers had played an important part in mining regions, several towns grew in importance as supply and distribution centers for farmers as agriculture expanded throughout Colorado, including the towns of Rocky Ford and La Junta on the eastern plains, Grand Junction on the far western edge of the state, and Longmont, Fort Collins, and Greeley in the north-central part of the state.

In particular, the Plains region of Colorado became an important agricultural region, and thirteen new eastern counties were created there in 1889 as populations on the Colorado prairie increased. Record rainfalls in eastern Colorado during the 1870s and 1880s seemed to contradict Long's description of the

region as "the Great American Desert." Techniques of dry-land farming were being developed by such people as Hardy Campbell, the most famous spokesman of the movement, "who had worked out what he thought was a climate-free system of land use: deep plowing in the fall, packing the subsoil, frequently stirring up a dust mulch, and summer fallowing – leaving part of the ground unplanted each year to restore moisture" (Worster 1979: 87). Dry-land farming also depended on the development of drought-resistant grains, which began to replace corn as the chief crop on the plains. By 1910, developments in prairie agriculture helped farming to become the state's leading industry.

Despite favorable developments in agriculture, homesteading in Colorado, particularly on the Great Plains, was difficult, as farmers were dependent on cyclical weather patterns as well as on a state economy that relied heavily on the mining industry and its constant fluctuations. In the 1890s, farmers on the Colorado Plains were affected by both the Silver Panic and the impact of a four-year drought. However, the worst experience for eastern Colorado farmers was between the World Wars when eastern Colorado, like the rest of the Great Plains, became part of the "Dust Bowl," a situation created by overproduction, improper soil management and a drought that lasted from 1931 until 1935. In Colorado, the counties in the southeast quadrant of the state – Baca, Las Animas and Prowers – were the hardest hit by the Dust Bowl and resulted in population declines. The population of Colorado's most southeastern county, Baca County, for example, decreased by 33 percent from 1931 to 1936 (Worster 1979: 49). Some of the farmers affected by the Dust Bowl relocated to communities on the Western Slope or in the San Luis Valley with the aid of the Resettlement Administration, while others moved to California or to the eastern United States and continued farming. Still others gave up farming and moved into nearby cities such as Denver. The result of this exodus has been that Colorado's eastern towns have never reached the population they had before the Dust Bowl. Although Colorado did not experience the same losses as the states of Oklahoma, Kansas, and the Dakotas did, and even had a slight increase in its population, the decade of the 1930s was the only decade since its founding that the population growth of Colorado has been less than that of the national rate. However, due to the efforts of the Resettlement Administration, better soil conservation methods and greater rainfall, the farming industry in Colorado had rebounded by

the 1940s, contributing nearly twice as much to the state's yearly income than the mining industry (Colorado Writers' Project 1941: 54).

Although the presence of the United States military was always strong in Colorado, starting in the mid-1800s when fortifications were built throughout the area to protect the border and to protect settlers from conflicts with Native American tribes, during the 20th century, the military presence in Colorado was strengthened in a variety of ways. Fitzsimons Army Hospital was built just east of Denver in Aurora during World War I, primarily for wounded soldiers returning back to the states from the war in Europe. During World War II, several military installations were built, including Lowry Field in Denver, Camp Carson and Ent Air Force Base in Colorado Springs, Buckley Field in Denver, and Camp Hale, which was built for the 10th Mountain Infantry Division, a unit specializing in cold-weather survival, in Pando, just north of Leadville. A number of factories for manufacturing and storing weapons and munitions were built in Colorado, including an ammunition factory that opened in September, 1941, in the present city of Lakewood, just west of Denver; the Rocky Mountain Arsenal, which was constructed northeast of Denver in 1942; and the Pueblo Ordnance Depot, which was constructed in Pueblo in 1942. At the end of World War II, the ammunition factory was closed, converted into offices and renamed the Denver Federal Center, and grew into the nation's largest concentration of government agencies outside of Washington, D.C. During the administration of President Dwight D. Eisenhower, the military increased its presence in Colorado even more. The Dow Chemical Rocky Flats plant was built between Denver and Golden and opened in 1952 for the manufacturing of parts for nuclear weapons. In 1954, Colorado Springs was designated as the site of the Air Force Academy; construction began the following year and was completed in 1958, and the North American Air Defense Command (NORAD) was established and built its headquarters in Colorado Springs in 1957.

Just as the terrain of Colorado posed significant challenges for railroad transportation in the 19th century, the emergence of automobiles and the need for roads created serious engineering challenges in the 20th century. Wolf Creek Pass became the first highway in the Rocky Mountains to cross the Continental Divide when it was built in 1913. Soon after, construction began on a road that would allow

drivers to climb Pikes Peak, and the road was commemorated with the first Pikes Peak Hill Climb automobile race in the summer of 1916. Later, President Eisenhower's implementation of an interstate highway system also had a profound effect on the state. Some of the major highways constructed in the state during this time followed some of the same routes of migration of the early settlers; for instance, Interstate 76 enters the northeastern portion of the state from Interstate 80 near the town of Big Spring in western Nebraska, following the South Platte River before merging with Interstate 25 on the northeastern fringes of Denver. Other highways were constructed along east-west or north-south gridlines. Interstate 70 is the major east-west highway of Colorado, coming out of Topeka, Kansas, and entering Burlington, Colorado, before going through Denver and heading into the mountains, exiting the state after going through Grand Junction and into Utah. Work on a tunnel that would allow for Interstate 70 to traverse the Continental Divide in Colorado began in 1968 and was completed in 1973, and a second tunnel (for eastbound traffic) was completed in 1979. The result of this construction was the Eisenhower Tunnel, which measures over one and a half miles long and, at an average elevation of 11,112 feet, is the highest vehicular tunnel in the world. Colorado's main north-to-south highway, Interstate 25 enters Colorado from New Mexico over the Raton Pass and runs along the eastern edge of the Front Range through the cities of Trinidad, Walsenburg, Pueblo, Colorado Springs, Denver and Fort Collins, before leaving the state and heading northward into Wyoming and Montana.

With improved access to the mountainous areas of the state, tourism became a major industry in Colorado. From the beginning, the major tourism draws in the state have been Colorado's Rocky Mountains, especially the 55 mountains measuring at least 14,000 feet in height. Other natural phenomena that have attracted tourists are the Great Sand Dunes in the San Luis Valley and the Garden of the Gods near Colorado Springs. In contrast to the popular image of the Great Plains as a region devoid of interesting scenery, two national areas were set aside in eastern Colorado – Comanche National Grasslands in the southeast quadrant of the state and Pawnee National Grasslands in the northeast quadrant. Man-made attractions in the state include the cliff dwellings at Mesa Verde and the Air Force Academy in Colorado Springs, and tourists have also visited mining towns, such as Leadville and Central

City, for their colorful history. More recently, limited-stakes gambling was made legal in Black Hawk, Central City and Cripple Creek, with some of the revenues generated by gambling earmarked for costs associated with historic preservation in these three towns that played significant roles in Colorado mining history.

As an economic activity, outdoor recreation took on greater significance after World War II when members of the 10th Mountain Infantry Division began developing ski resorts in the Colorado Rockies, giving rise to a great number of towns within a few hours drive of Denver, including Winter Park, Aspen, Vail, and Steamboat Springs. Although the initial attraction of these resorts was almost strictly for those interested in downhill skiing, skiers have recently had to share the slopes with snowboarders, and ski resorts have also appealed to hikers and bicyclists in the summertime in an effort to create a year-round economy. The state has long been a destination for hunters of various wild game, including deer and elk, and trout fisherman; one of the most avid outdoorsmen among the American presidents, President Theodore Roosevelt spent time hunting and fishing in northwestern Colorado.

Although the importance of mining in Colorado declined during the course of the 20th century, discoveries of rich deposits of oil shale in northwestern Colorado on the Piceance Creek Basin in the 1970s made Denver second only to Houston, Texas, as a predominant energy center of the American West, and the industry enjoyed great success during the decade. However, with the end of the shale oil boom in 1982, and the drop in oil prices in reaction to the surplus of oil on the world market soon after, Denver's economy encountered serious setbacks in the 1980s as inflation skyrocketed, housing prices soared, and incomes remained the same (Dorsett and McCarthy 1986: 295), and Colorado turned its attention toward other industries to generate needed revenue.

As Colorado focused more on tourism as an industry, the state turned its attention on some of the environmental problems that had been created in great part by the mining and military industries. Production at Rocky Flats ended in 1989 after the plant was raided by the Federal Bureau of Investigation; cleanup of the contaminated site began in 1992 and is slated for completion in 2006. Pueblo Ordnance Depot, now known as the Pueblo Chemical Depot, was also slated for closure and

efforts are being made to clean up the site for reuse. As in other American states, several military bases were closed in the latter part of the 20th century. In 1994, Lowry Field, which by then had been renamed Lowry Air Force Base, was closed and converted into residential and commercial properties. Fitzsimons Army Hospital, renamed Fitzsimons Army Medical Center, was closed in 1999 and is now being developed as the Fitzsimons Medical Campus, a branch of the University of Colorado Health Sciences Center and the University of Colorado Hospital. Despite these closures, the military remains a vital presence in Colorado, especially in Colorado Springs, and the Air Force Academy is one of the greatest tourism draws in the state.

Like other cities of the United States, Denver has had to confront the challenges of urban renewal, and the response to urban blight in the 1960s and 1970s was to bulldoze entire sections of the city to make way for skyscrapers and parking lots. Historic preservationists in Denver, under the leadership of Dana Crawford, became a force by the late 1960s in time to preserve such historic places in the city as Molly Brown's house and entire blocks of old warehouses that have been converted to lofts and retail space in Lower Downtown Denver (or LoDo). LoDo also was greatly impacted by Denver's acquisition of the major league expansion team the Colorado Rockies in 1993, and the opening of Coors Field as the team's home park in 1995. The same year, Denver replaced Stapleton Airport, which had opened in 1944 as a major expansion of the Denver Municipal Airport, with Denver International Airport, which is now the nation's largest airport in total acreage and its fifth busiest airport.

Colorado Today

Today, Colorado ranks 24th in the nation in population with approximately 4.5 million inhabitants, including over half a million in Denver alone and another half a million in the Denver suburbs, including nearly 300,000 in Aurora, 150,000 in Lakewood and just over 100,000 in Westminster. The Front Range region, which comprises Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Pueblo, and Weld Counties, and, in addition to the cities mentioned above, includes the cities of Boulder, Colorado Springs, Fort Collins and Pueblo, accounts for over 80% of

Colorado's population; the greatest area of growth is in the suburbs of the cities along the Front Range, particularly between Denver and Boulder, as well as between Denver and Colorado Springs. Despite this growth, the ratio of people to land is relatively small, as, at 41.5 inhabitants per square mile, the ratio is nearly half of the national average of nearly 80 inhabitants per square mile. With the creation of Broomfield County in 2001, Colorado has 64 counties.

Racially, the population of Colorado is primarily white (3,560,005, or 83%). The African-American population of Colorado (165,063, or 3.8%) resides primarily in metropolitan Denver and Colorado Springs. Asians make up about 2.2% of the population (95,213), residing mainly in metropolitan Denver, Colorado Springs and Boulder. Native Americans comprise a small population (44,241, or just over 1%), primarily in metropolitan Denver, Colorado Springs and Fort Collins, but the Ute population is the majority in Montezuma County, primarily inhabiting the Ute Mountain Indian Reservation and the Southern Ute Reservation, which together comprise nearly 2 million acres in the southwestern corner of the state. Traditionally, the Hispanic population has been greatest in the southern portion of the state, particularly in the San Luis Valley, but, as in many parts of the United States, the Hispanic and Latino population (of any race) has increased in recent years, particularly in urban centers, and now accounts for 735,601 people, or 17% of the total population of Colorado. Hispanics account for approximately 32% of the population in the city of Denver (n=175,704).

With respect to other demographics, the population of Colorado is almost evenly divided between males and females (50.4% to 49.6%), varying only slightly from the U.S. average in which there is a slightly higher proportion of females to males. The adult population of Colorado on average has a higher degree of education than the overall population of the United States with 32.7% of Colorado's population over the age of 25 possessing at least a bachelor's degree in contrast to the average for the rest of the United States at 24.4%. The Census Bureau reported in 1999 that 9.3% of Colorado's population was below the poverty level compared to the national level of 12.4%. Part of Colorado's great population increase over the years has been its appeal as a home for people born outside of the state; according to the 2000 Census, 49%, or 2,109,169, of Colorado's residents were born in another state, and 8.6% of the

population was born outside the United States with 55.6% of this foreign-born population born in Latin America, 19.6% in Asia, and 17.6% in Europe.

With respect to language use, only about 15% of Colorado's population reports speaking a language other than English at home**,** with 10.5% of the population reporting to speak Spanish in the home (U.S. Census 2000). Although the vast majority of Colorado inhabitants are native English speakers, several facets of the current language situation in Colorado must be noted. The first is that as the Hispanic population has risen sharply in recent years (339,717 to 424,302 from 1980 to 1990, or a 25% increase, according to the U.S. Census Bureau), the number of Spanish speakers has also risen (from 179,607 in 1980 to 203,896 in 1990, or 14%; see Silva-Corvalán 2004). Languages other than English are used among Europeans and Asians to some extent in Colorado, especially in the major cities of the Front Range, although not nearly to the extent they were used in the late 19th and early 20th centuries. Among the indigenous languages of Colorado, Ute is the only one with any real presence in the state today and is spoken mainly in the southwestern quadrant of the state. Some efforts have been made to preserve the language at such places as the Southern Ute Indian Academy in Ignacio.

The Colorado Data Book (2004) presents the following figures on Colorado's primary economic activities for 2001:

Table 1.2: Total Gross State Product, 2001

Industries	Revenue	%
Services	$41,860,000,000	23
Finance, insurance and real estate	$31,816,000,000	18
Government	$20,532,000,000	12
Transportation, communication and utilities	$19,317,000,000	11
Retail trade	$16,909,000,000	10
Manufacturing	$14,991,000,000	9
Construction	$11,827,000,000	7
Wholesale trade	$10,714,000,000	6
Mining	$3,068,000,000	2
Agriculture, fishing and forestries	$2,738,000,000	2
Total	$173,772,000,000	

The diversity of Colorado's current economy is perhaps the clearest indication of how far Colorado has come since its earliest days in which the exploitation of its natural resources formed the basis of its primary economic activities in, respectively, the areas of fur trapping and trading, mining, ranching and farming.

Owing primarily to its history and varied topography, Colorado is often viewed as serving as a cultural crossroad in the western United States. Abbott, Leonard, and McComb (1994: 11), for instance, say that "Colorado is, in fact, the meeting point for three major sections within the American West…The Rio Grande ties the state to the Southwest, the Colorado to the range and plateau country of the Mountain West, the South Platte and Arkansas to the Great Plains." Thus, Colorado's geographic diversity serves as one of the factors contributing to its status as the cultural and economic center of the Rocky Mountain region. And it is this diversity – in topography, in economic activity, in the origins of its population – that makes a study of Colorado's linguistic geography interesting and worthwhile, as this diversity has effect at all levels of Colorado speech.

CHAPTER 2

DIALECTOLOGY AND THE LITERATURE ON COLORADO ENGLISH

The preceding chapter presented a history of Colorado, primarily focusing on nonlinguistic factors that earlier studies in language variation have found to influence the linguistic behavior of speech communities. This chapter provides a history of the study of language variation, beginning with the origins of dialectology in Europe in the late nineteenth century, proceeding to modifications to dialectological methods when they were adopted for the study of American dialects in the early twentieth century, and concluding with a discussion of some of the latest innovations in dialect research. This discussion includes findings from earlier dialectological surveys of American English that are the relevant to the current study, especially those surveys conducted in the eastern regions from which the early Anglo-American settlers of Colorado primarily migrated, as well as earlier work conducted in Colorado. The chapter concludes with a discussion of the current framework being used to conducted dialectological research in the western states.

Atlas Origins

While historical evidence suggests that interest in language variation extends at least as early as the Classical Era in Greece, and commentary on regional variation in English probably dates back as far as the twelfth century (Petyt 1980: 37), it was not until relatively recently that scholars began conducting systematic studies of language variation. The first systematic study of language variation is credited to Georg Wenker, a German linguist who intended to show that empirical data on language variation supported the Neogrammarian principle that linguistic change is regular and systematic. Toward this goal, Wenker sent postal questionnaires to schoolteachers in cities and villages throughout Germany in the 1870s, requesting that they translate 40 sentences into their local dialect and return the completed work. Wenker received approximately 52,000 completed questionnaires, and he went to work editing and

interpreting the work until his death in 1911. Thereafter, Ferdinand Wrede directed the project until it was discontinued in 1956 (Petyt 1980: 40).

Its status as a pioneering work in the field of dialectology notwithstanding, critics have noted several problems with Wenker's study. For one, the sheer volume of the data was so overwhelming that Wenker was able to analyze only a small set of words in a small geographic area of his study (Chambers and Trudgill 1980: 18), a problem that might have been avoided had the field of statistics and the notion of selective sampling been developed by the time of his study. The nature of the data that were collected was also problematic. For instance, the study's reliance on schoolteachers as informants raised serious questions about the reliability and consistency of the data. The schoolteachers who completed and returned surveys did not necessarily have any training in linguistics, leaving open the question of how representative the results were of actual usage or whether they instead reflected the attitudes of the teachers. Even more problematic was that schoolteachers did not necessarily know phonetic transcription, so they manipulated orthography to show pronunciation in the area; the kinds of choices they may have made in doing so created another problem for those trying to interpret the varied transcription practices of so many different people (Petyt 1980: 45). For Wenker, however, the biggest problem of the study may have been that it did not support the Neogrammarian Hypothesis of regular change; rather, the study suggested that variation in language is far more complex and disorderly than the highly systematic view the Neogrammarians had postulated (Petyt: 1980: 57).

Subsequent scholars interested in the issue of language variation sought to address the methodological issues found in Wenker's work and to overcome the challenges these issues created in their own work. The first of these scholars was Jules Gilliéron, a French dialectologist who created and directed *Atlas Linguistique de la France* in response to Gaston Paris' call for a survey of French dialects before they were obliterated by the spread of Standard French (Petyt 1980: 41). In planning his survey, Gilliéron compiled a questionnaire of 1,400 items covering aspects of local culture, such as names for various types of foods and animals, and created a grid of France indicating the communities in which he was interested in obtaining linguistic data.

The major departure of Gilliéron's work from Wenker's was in eschewing a methodology relying on postal questionnaires for one that relied on face-to-face interviews between native informants in their own communities and a field worker trained to record responses to interview questions in phonetic transcription. Gilliéron not only believed that employing an onsite field worker was far superior to using a postal questionnaire, he also had strong ideas about the qualities a field worker should possess (Petyt 1980: 41). First, Gilliéron believed a field worker should have a good ear for phonetic detail and the training to represent sounds in accurate and consistent phonetic notation. At the same time, field workers should not know so much linguistic theory that their recordings of empirical data might be compromised. Finally, Gilliéron considered the use of a single field worker for a project to be optimal because it would result in more consistent data collection than the use of multiple field workers would.

As someone who possessed many of the qualities Gilliéron deemed important, Edmond Edmont, a grocer by trade with an interest in linguistics and, as Gilliéron had observed, a good ear for phonetics, was deemed the perfect field worker for the French atlas, and he began conducting interviews in 1897. Edmont apparently had a great deal of physical stamina as well, as he used a bicycle that Gilliéron bought for him to travel to 639 communities throughout France and French-speaking areas of Italy, Switzerland and Belgium. Edmont used the questionnaire provided to him by Gilliéron but supplemented the already lengthy interview with additional questions, so that by the time he had completed fieldwork for the Atlas in 1901, the questionnaire consisted of approximately 1,900 questions. Edmont later conducted field work for other projects, including the *Atlas Linguistique de la Corse* (Petyt 1980: 41).

Although primarily motivated by the desire to separate hypothesis-making from data collection, the division of labor between analyst and field worker that Gilliéron insisted upon may have had practical benefits as well, allowing for analysis in the office to go on while field work was still being conducted (Chambers and Trudgill 1980: 20). At any rate, Gilliéron's framework proved to be successful in a way that Wenker's was not, in that it moved rapidly from data collection to publication, as the results of interviews were published on 1,920 maps in 13 volumes between 1902 and 1910 (Petyt 1980: 42). Like Wenker's work, Gilliéron's work raised serious questions about the validity of the Neogrammarian

Hypothesis, in that few rigid patterns were found in the areal distribution of groups of words, prompting the famous dictum typically credited to Gilliéron – "chaque mot a son histoire" (trans. "Every word has its own history"), which is a view that has been adopted by many scholars in the subfield of dialectology ever since the days of Gilliéron.

Despite its great success, Gilliéron's method has had several criticisms directed toward it. One was that Gillieron encouraged Edmont to use the target item in the question itself, resulting in questions of the type "How do people around here say the word X?" (where X is a specific lexical item). As many scholars have subsequently pointed out, the use of the target item in its prompt can potentially exert a great influence on an informant's response. Furthermore, although he sometimes interviewed as many as two people in a community, Edmont typically only interviewed one person per community, and a large majority of these informants was male, making it difficult for scholars to go beyond regional factors and look at other social factors that might play a part in language variation. Some scholars also thought Gilliéron's grid of France to be too broad, lacking the refinement necessary for adequate coverage. Finally, some argued that relying on one field worker might actually be problematic in that the entire dataset could reflect deficiencies in the scribal practices or phonemic inventory of the field worker (Petyt 1980: 48).

Nevertheless, the apparent efficacy of Gilliéron's method made it the model for subsequent dialectological research elsewhere in Europe and in the United States (Chambers and Trudgill 1980: 20). Most notably, the methodology was adopted by two of Gilliéron's students, Karl Jaberg and Jakob Jud, in their work on the dialects of Italy and Switzerland, although Jaberg and Jud did modify some facets of the methodology For instance, Jaberg and Jud placed more emphasis on collecting linguistic data in urban centers than Gilliéron had, and they modified the questionnaire by grouping related questions together in an effort to turn the attention of informants toward the subject matter and away from their own speech. Gilliéron's method was also modified for use in Germany, and in a second survey of France, called the *Atlas Linguistique Régional de la France*, which was initiated in 1939**.**

The Linguistic Atlas of the United States and Canada

In the United States, a large-scale dialect study had been in the planning since the inception of the American Dialect Society (ADS) in 1889, but it was not until Hans Kurath was appointed director of the Linguistic Atlas of the United States and Canada in 1929 that important steps toward realization of this goal were taken. Under Kurath's direction, the Linguistic Atlas largely adopted the methods of Gilliéron, in that Kurath began with a grid of the area that he wished to study, devised a questionnaire to elicit targets that could be collected and used in a systematic study of pronunciation, vocabulary and grammar, and relied on on-site interviewing rather than relying on postal questionnaires.

Like Gilliéron, Kurath avoided asking questions in his worksheets that could only be answered by a small segment of society, e.g. questions about blacksmithing or whaling, opting instead to focus on commonplace items that would be known by a majority of a population and would indicate dialect areas, as he clearly articulates in the following passage:

> Regional and local expressions are most common in the vocabulary of the intimate everyday life of the home and the farm – not only among the simple folk and the middle class but also among the cultured…Food, clothing, shelter, health, the day's work, play, mating, social gatherings, the land, the farm buildings, implements, the farm stocks and crops, the weather, the fauna, and the flora—these are the intimate concerns of the common folk in the countryside, and for these things expressions are handed down in the family and the neighborhood that schooling and reading and familiarity with regional or national usage do not blot out. It is the vocabulary in this range of life that gives us insight into the structure of the speech areas, large and small, their relation to settlement areas, trade areas, and culture areas, and the trend from local to regional and national usage. This is the important segment of the American vocabulary dealt with in this investigation (Kurath 1949: 10).

Like Gilliéron's work, analysis of the data would not be conducted in the field but in the office later, and Kurath (1939: 48) was quite explicit in his directions to field workers to not allow theory to get in the way of facts during the course of collecting data:

> Beware of preconceived notions. Do not be misled by what you know, but trust your ear and eye. Rejoice in discovering new facts, and in having your expectations disappointed. Alertness and keenness of perception are the important factors in this work.

Many of Kurath's basic principles for conducting dialect research, therefore, followed from the methods of Gilliéron.

In response to some of the criticisms that had been directed at Gilliéron's work, however, Kurath did modify some aspects of Gilliéronian methodology. For instance, like Jaberg and Jud, Kurath constructed a questionnaire that grouped related questions together to encourage more natural conversation during the interview. Also, Kurath encouraged field workers to avoid interviewing strategies that had been commonly employed by Edmont, except as a last resort:

> Do not suggest a response by asking, 'Do you say so-and-so?' until all other methods are exhausted. If the response is secured by direct suggestion, prefix *sug*. to it. The approach should be indirect, i.e., through the idea (Kurath 1939: 48).

As an example of a more indirect question, a field worker might ask, for instance, "What is a container with a handle used for carrying water from a well?" To compensate for the greater time that using indirect questions would create in the interviewing process, and to encourage participation by those informants who might balk at Gilliéron's interview of nearly 2,000 questions, Kurath devised a questionnaire of approximately 800 items designed to take about 8 hours to complete.

Kurath was also forced to modify Gilliéron's method to account for logistical differences between surveying a country the size of France and one the size of the United States. One thing that Kurath did, for instance, was divide the eastern United States into several regions in order that the Atlas might focus on one region at a time. Kurath also realized that no one field worker could be expected to do an adequate survey of the entire country in a timely fashion; therefore, he dismissed the notion of using one field worker to canvas an entire region and instead sought to train a number of field workers to produce comparable results. In creating grids of various regions of the United States, Kurath only suggested where interviews should be conducted but left some room for field workers to decide in which communities interviews should ultimately be conducted, whereas Gilliéron was quite insistent on

preselecting areas according to a spatial dimension even if Edmont ultimately deviated from this plan when faced with geographic reality (Petyt 1980: 46).

In planning the Atlas, Kurath integrated a number of theoretical considerations into his methodology as well, some of which were influenced by Jaberg and Jud's work, both in their own studies and in their roles as consultants to the American Atlas. Kurath assumed that while region played a large part in language variation, social stratification and age also played important roles in speech differences, and he structured the methodology of the Linguistic Atlas to take these factors into account and to enable researchers to use Atlas data to study the influence of such variables. Field workers were instructed to interview three informants of varying social types in each of the communities they conducted fieldwork. The first informant was to be an elderly person with a minimum of education and travel that Kurath called a "folk speaker," and it was this speaker that was deemed most important by proponents of Atlas methodology. In pointing out the importance of elderly informants, McDavid (1972: 37) argued that

> [w]hatever the current mode of interest in dialects may be, it is none the less true that the primary purpose of a linguistic atlas is that of historical linguistics, of providing a body of stable folk evidence, from which one may work backward, comparatively, to set up affiliations of the dialect regions with those in older settled areas and in the British Isles.

As for the emphasis on the lack of education and travel among these speakers, it was assumed these characteristics would make the speech of such informants the most representative of the place in which they lived, having not been influenced to a great degree by outside forces.

In addition to the folk informant, Atlas methodology typically sought at least one other informant in each community. This second informant was to be a common speaker who had a moderate amount of education, had read some, had other external contacts, such as travel or participation in social organizations, and was typically younger than the folk speaker of the community. Finally, a third informant who was to be a cultivated speaker possessing a higher education than the other speaker types, was well-read, and was associated with the leadership of the community was selected for interviewing in approximately 20 percent of the communities under Atlas investigation.

By 1931, the plan for the Linguistic Atlas had been completed and field work for the project began. Primarily due to a relatively long inhabitation of the northeastern United States by Anglo-Americans dating back to the early 1600s, but perhaps also because Kurath lived and worked in the region as a professor at Brown University in Providence, Rhode Island, New England was the first region to undergo Atlas investigation, with fieldwork beginning in 1931. With the motivations and aims of the project appearing in the *Handbook of the Linguistic Geography of New England* (Kurath et al. 1939), and the results of 431 interviews conducted by nine field workers appearing on 734 maps in three bound volumes published as the *Linguistic Atlas of New England* (Kurath et al.1939-43), Kurath's work in New England not only provided a model for dialect work in other parts of the country, but it showed that a regional dialect survey could proceed from proposal to publication in a relatively short period of time in United States.

In addition to the work in New England, Kurath directed a survey of the eastern seaboard beginning in 1933 that would eventually comprise 1,162 interviews in all the American states on the Atlantic Ocean from New York to Florida, as well as the landlocked state of West Virginia. Named the Linguistic Atlas of the Middle and South Atlantic States (LAMSAS), the survey was turned over to its principle field worker, Raven McDavid, before changing hands once again to its current director William Kretzschmar, Jr. Although never published in a cumulative form, the methods and aims of the project, as well as data concerning characteristics of the communities and informants represented in the study, were published as the *Handbook of the Linguistic Atlas of the Middle and South Atlantic States* (Kretzschmar et al. 1994). Additionally, a large body of linguistic data collected for the survey can be accessed via the Web at www.lap.uga.edu.

With the completion of the LANE project and with a great deal of LAMSAS fieldwork completed, Kurath and others began analyzing the data and publishing work on their findings. The first of three major publications using Atlas data to describe the speech of the eastern United States appeared in 1949, and, as suggested by its title, Kurath's *A Word Geography of the Eastern United States* (1949) focuses on the distribution of lexical variants in the eastern states. More specifically, the book focuses on

the social and regional distribution of more than 400 words in all the states covered by LANE and LAMSAS with its intent being

> to determine the present geographic and social dissemination of individual expression in the Eastern States, to observe the coalescing of word boundaries with a view toward identifying speech areas, and to relate these speech areas and their boundaries to settlement areas, trade areas, and culture areas. This procedure gives us a realistic historical account of a selected body of vocabulary in the oldest part of English-speaking America (Kurath 1949: 10).

Unlike his 1939 publication, in which he primarily presented data on maps, in *Word Geography,* Kurath not only shows the distribution of lexical features throughout the eastern United States but also attempts to use Atlas data to show the existence of dialect regions based on the distribution of these lexical features, as Kurath (1949: 11) maintained that

> [e]very word that is not in nation-wide use has its own spread geographically – as well as socially; yet the word boundaries tend to coalesce in some sectors and to be spaced more or less widely in others. Wherever they coalesce to form more or less close-knit strands or bundles, we have speech boundaries of varying importance. If we have at our disposal a sufficiently large number of regionally or locally restricted words, we are able to draw dialect boundaries.

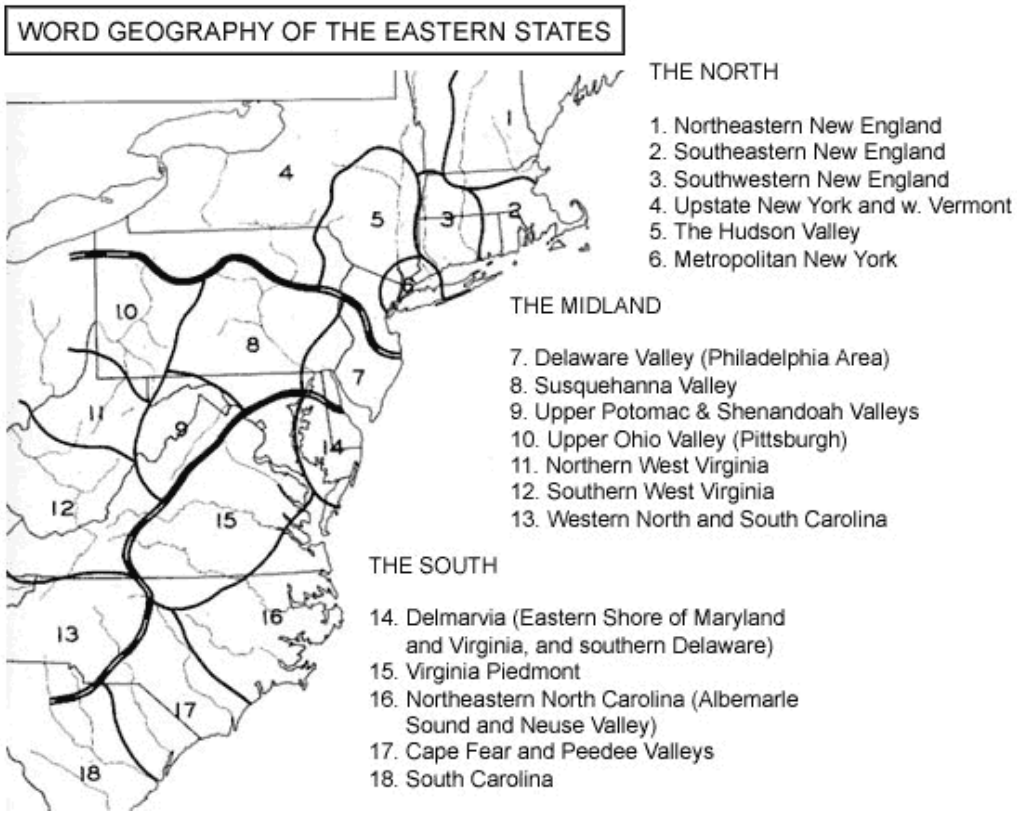
Central to this concept were Kurath's notion of the isogloss as a line demarcating areas in which variants commonly occur and areas in which they do not and of bundles of isoglosses as evidence of dialect regions.

In his analysis of the data, Kurath found lexical variation supporting the popular notion that there was a great deal of difference between the northern and southern United States. For instance, the Atlas recorded a large number of such variants as *pail* 'bucket,' *teeter(board)* 'seesaw' and *darning needle* 'dragonfly,' while in the South one would be likely to find such variants as *lightwood* 'kindling,' *light-bread* 'wheat bread,' and *you-all* as a popular form of the second-person plural pronoun. Kurath, however, thought the division of North and South was only one major distinction that could be made between dialects in the eastern United States and argued that "[t]he common notion of a linguistic Mason and Dixon's Line separating 'Northern' from 'Southern' speech is simply due to an erroneous inference

from an oversimplified version of the political history of the nineteenth century" (Kurath 1949: vi). Rather, Kurath argued for the existence of a third English dialect, which he called the Midland dialect area, in which Atlas records showed common usage of such variants as *blinds* 'roller shades,' *skillet* 'frying pan,' *spouting, spouts* 'gutters,' *a little piece* 'a little way,' *to hull beans* 'to shell beansExcerpt from Saguache Interview with Auxiliary Informant as Sole Respondent,' *pine, fat-pine, rich-pine, pitch pine* 'kindling,' *snake feeder* 'dragonfly,' *I want off* 'I want to get off,' *lamp oil* 'kerosene,' and *you'ns* as a popular variant of the second-person plural pronoun.

Geographically, Kurath (1949: 11) argued that the Midland region occupied the land south of a line running through the middle of Pennsylvania and north of a line running southwesterly along the Blue Ridge in Virginia, as depicted in Kurath's famous map of dialect divisions included below:

Figure 1: Kurath's Map Depicting the Division of Dialect Regions in the Eastern U.S.



Map source: Kurath (1949: 91)

Kurath's work was not only notable in arguing the existence of a Midland speech area, of which there is still some debate (see e.g. Davis and Houck 1992; Johnson 1994), as illustrated above, Kurath also made finer distinctions in the dialect regions of the eastern United States.

Although he acknowledged other factors at work, Kurath argued that most of the divisions in dialects of the eastern United States were the product of settlement patterns that could be traced back to the earliest British colonies in North America and perhaps even back to regional varieties of English spoken in Britain. Even when investigating the speech of inland states, Kurath (1949: vi) suggested that the primary reason for variation in a language were differences in settlement history:

> In the Middle West, the lower Mississippi Valley, and the farther West new words were coined, old words came to be used in new senses, and words were borrowed from the Indian languages, from the German and the Scandinavian languages spoken in the Middle West, and from the Spanish of the Southwest; but the main stock of the English vocabulary of these later settlement areas is nevertheless clearly derived from the speech of the earlier settlements on the Atlantic slope.

For Kurath, the importance of settlement history in dialectal variation was in its long-term influence.

In his study on grammatical variation, Atwood (1953: 1) used approximately 1,400 records from LANE and LAMSAS to test the long-held notion that "the most striking differences between cultivated and popular are to be found in the conjugation of verbs." As part of his methodology, Atwood focused on six different classifications of verbs, including tense, negation and subject-verb concord. More importantly, Atwood was careful to use only spontaneous occurrences of the verb forms and eliminated those forms that were suggested by the field worker or those that informants reported that they formerly used or that other speakers used, including those forms they attributed to certain social groups, such as the elderly, the poor, etc.

Although he does make some categorical distinctions in the distribution and use of some items, Atwood primarily examined the frequencies of forms and presents them as general percentages, as in his

characterization of the distribution of *oats are/is*: "Of the 50-odd occurrences of *is* in New England, four fifths are among the older (IA and IIA) informants" (1953: 30). In the case of a small number of occurrences, Atwood states exactly how many times the forms are realized in the data set, as in his discussion of variation in tensed forms of *shrink*: "*Shrinked* is used as the past participle by two informants, and *swunk* by two" (1953: 21). Like the model set by Kurath (1949), the emphasis in Atwood's book is on presenting data rather than constructing a theoretical model, and data is presented both in prose and in maps at the end of the book that show the geographical distribution of more than 30 target items.

Although Atwood (1953: 43) warns that "(g)eneralizations regarding popular usage of verbs must be made with extreme caution, since every verb offers its own peculiar problems, and every form shows its own unique distribution," Atwood discusses several historical trends in verb usage based on Atlas data, but it is his observations on the intersection of language variation and social class that serve as the most provocative aspect of his study:

> Usage is rather sharply divided along social lines, more sharply than in vocabulary or in pronunciation. That is, nonstandard forms are most common among uneducated speakers in isolated communities, and are strikingly less frequent among the more highly educated. However, not even the usage of the most cultivated speakers is entirely free of such variants (Atwood 1953: v).

Atwood concludes his work on verb forms with the prediction that while "the present trend…is for the older popular forms to retreat before the march of universal education and the middle-class aversion to rusticity" (1953: 44), there will most likely always be regional preferences for specific verb forms, competition between forms, and isolated cases in which verb forms defy the constraints of standardization.

In a study of pronunciation in the eastern United States, Kurath and McDavid (1961) used a slightly larger sample of the LANE and LAMSAS records than were used in Kurath (1949), incorporating interviews McDavid conducted in Georgia, Florida, and New York, as well as in Ontario, Canada, between 1949 and 1961 to bring the total number of informants to 1,500. The focus of the work is

primarily on vowels rather than consonants, due to greater variation between American English varieties in their vowel systems as opposed to their consonantal inventories. Of these vowel systems, Kurath and McDavid (1961: 5) report that "[a] systematic comparison of the major dialects of English spoken in the Eastern States shows that they have largely the same system of vowel phonemes, though they differ rather markedly in the phonic character of some of the vowels and in their incidence in the vocabulary." Furthermore, they state that "[i]nspection of these dialectal vowel systems shows that the differences are largely confined to the low and the raised low vowels" (Kurath and McDavid 1961: 7).

In the second chapter of their work, Kurath and McDavid comment on the data by presenting an analysis of the speech of 157 informants representing the elite or upper-middle class from 136 different communities. For each of the 157 informants, Kurath and McDavid provide an informant biography and vowel synopsis, and they arrive at the following conclusion:

> A rather marked social cleavage exists in the Eastern States only in the old plantation country (linguistically, the South) and in the old cities on the Atlantic seaboard, notably Boston, New York, Philadelphia, Baltimore, Richmond, and Charleston. Elsewhere there is rather a gradation from the cultured to the folk, especially in rural areas, both the cultured and the folk merging into the dominant middle class (1961: 11).

Like earlier works on Linguistic Atlas data, a great deal of data is presented in the book, mainly in the form of description of pronunciation usage for various words, but also in the plethora of maps at the end of the volume.

Adopting Kurath's methods for research in other areas of the United States, several autonomous Atlas projects were developed to extend the coverage of the Linguistic Atlas west of the Atlantic seaboard. One of these was the Linguistic Atlas of the North-Central States (LANCS), which comprises 564 interviews conducted from 1933 to 1977 throughout the Great Lakes states of the Midwest, as well as the state of Kentucky and the province of Ontario, Canada. Directed by Albert Marckwardt, LANCS was not published but is available in microfilm form. The difficulties encountered by LANCS in its struggles with funding and publication have been recorded elsewhere, particularly in McDavid (1979).

Atlas projects also began west of the Mississippi River, and from the onset of this work, dialectologists recognized a variety of historical, cultural, and physical differences between the East and the West, particularly in the Rocky Mountain area, that might pose problems for the traditional Atlas methods that had been used in the East. Kimmerle, McDavid, and McDavid (1951) point out that in contrast to the orderly and gradual spread from the coast into the inland areas that had been the case in the eastern United States, the communities of the Rocky Mountain region were settled in leaps and bounds across wide areas, and even as late as the 1950s, there were great distances between significant populations in the region. Additionally, they explained that in other areas of the United States a great amount of distance between communities might make little difference in speech patterns, but the geographical barriers in Colorado made communication between populations difficult. Finally, the varieties of American English spoken in the Rocky Mountain region had often been transported from regions of the United States in which dialect mixture was already the norm, such as the Great Lakes region and the transition area in the Great Plains. Kimmerle et al.(1951) also observed challenges in finding suitable elderly native informants in communities due to the highly mobile nature of the population in the West and the fact that the histories of the communities were relatively short when compared to the communities of the eastern seaboard. There was also the problem that "even the earliest English-speaking settlers in the Rockies were accustomed to public education, so that their communities had a rather high percentage of literacy from the start" (Kimmerle et al.1951: 260).

Due to such differences, Kimmerle et al.(1951) predicted the types of patterns that a survey of speech in the Rocky Mountains would differ from its eastern counterparts in a number of ways. Their hypothesis was that Atlas methods would indicate the existence of dialect regions in the area, but these would be less clearly defined than the dialect regions that had been identified in the eastern United States. They also predicted there would be differences in pronunciation, but differences of vocabulary and grammar would be relatively rare. Furthermore, they believed that there would be less folk grammar due to the influence of mandatory education and widespread use of commercial terms in the region.

In a preliminary examination of the data collected in Colorado, however, Kimmerle et al. found evidence that the speech was neither "uniform nor randomly heterogeneous, but that vocabulary, pronunciation and grammar occurred in patterns correlating with the origins of the settlers and the routes of their migration" (1951: 263). Despite some difficulties and some necessary modifications, such as settling for younger informants than the original Linguistic Atlas model called for, Kimmerle et al. maintained

> that so many [items] are obvious on a preliminary analysis should dispel once and for all the notion that Atlas methods are inapplicable in the Rockies. That routes of migration into the northern and southern parts of Colorado are apparently reflected in the speech of those regions suggests that field work over a wider area – and the more intensive examination of the evidence collected – would reveal further correlation between speech and social forces (1951: 263-4).

Kimmerle et al. (1951) therefore concluded that the differences between studying the speech of the Rocky Mountain region and that of eastern regions were more quantitative than qualitative and that minor methodological modifications would enable researchers to conduct Atlas work in the region.

Several dialect surveys were conducted in the western United States in the mid-twentieth century, including the Linguistic Atlas of the Pacific Coast, a survey of California and Nevada under the direction of David Reed; the Linguistic Atlas of the Pacific Northwest, a survey of Washington, Oregon, and Idaho under the direction of Carroll Reed; and the Linguistic Atlas of Colorado, under the direction of its principal field worker, Marjorie Kimmerle. Like LANCS, these projects were not published in a comprehensive form, but the data were described to some extent in a great number of dissertations and articles focusing on the speech of these areas. Much of this data can only be viewed in its original form, much of which is housed at the University of Georgia, while the Colorado records are currently housed in the archives of the Norlin Library at the University of Colorado at Boulder.

Atlas work in the West coincided with a time when American dialectology was confronting serious challenges. Among these challenges, as noted by McDavid (1972: 33), were a host of external factors, such as the lack of funding for dialectological research due to the depression and World War II;

but within the field there was a major paradigm shift, as postwar linguistics placed emphasis on language pedagogy, including teaching English as a second language, and artificial intelligence, with the incorporation of newer generative theories of linguistics that favored data collection by introspection as espoused by Noam Chomsky.

Scholars in fields outside of linguistics were also critical of Atlas methods. In her review of the methodology of the Linguistic Atlas, sociologist Glenna Pickford (1956) directed a number of criticisms toward the absence of random sampling in Atlas methods in favor of judgment sampling, the emphasis on rural speech and the creation of informant types based partially on speech. Although not all of Pickford's criticisms were off target, Davis (1983: 62-64) points out several faults with Pickford's argument, chief among them that Pickford apparently assumed that the Atlas was interested in collecting data toward a comprehensive depiction of American English, when its aims had always more modestly strove to provide a foundation for future research on American dialects. Furthermore, Davis (1983: 64) points out that Pickford's criticism of the sampling methods of the Atlas came after years of development in the fields of statistics and sociology, which were not available to the creators of the Atlas at its inception and to incorporate very different theoretical concepts into the Atlas framework at a later stage would create data that was incompatible with data elicited using previous theoretical models.

Partially in response to some of the criticisms both in and out of the field of linguistics, scholars interested in language variation began directing their attention more toward social influences on language in the emerging sociolinguistic paradigm of the early 1960s. Building on earlier works by Fischer (1958) and the ideas of his mentor, Uriel Weinreich (see e.g. Weinreich, Labov and Herzog 1968), William Labov became the leading practitioner of sociolinguistics with his work on the speech of Martha's Vineyard and New York City in the 1960s, leading the way for others to investigate the relationship of society and language using a quantitative approach.

Although much of the early work in sociolinguistics had different aims and methods than those of dialectology, several sociolinguistic studies used previously-collected Atlas data as foundations for their own inquiries into sociolinguistic situations (see Kretzschmar 1995). Therefore, due in part to the

renaissance of interest in language variation because of Labov's work, as well as the tireless efforts of the individual project directors, two valuable resources in dialectology were published in the last quarter of the twentieth century. The first of these was the Linguistic Atlas of the Upper Midwest (LAUM). Directed by Harold Allen, LAUM was designed to provide coverage of Minnesota, Iowa, Nebraska, and the Dakotas, and data from the project were published in three bound volumes (Allen 1973-6).

Directed by Lee Pederson, the Linguistic Atlas of the Gulf States (LAGS) was designed to fill a gap in much-needed research by using Atlas methodology to survey the speech of natives of Alabama, Arkansas, Louisiana, Mississippi, Tennessee, and Texas, as well as parts of Florida and Georgia. LAGS not only provided a wealth of data to people interested in the language and culture of the American South, it showed that ambitious plans, like that of Gilliéron in his work on the French atlas, could be successful in modern times, as the project moved through planning, fieldwork and publication of seven bound volumes (Pederson et al. 1986-92).

The importance of LAGS went beyond merely filling a research gap, however, as it also made several advancements in dialectological research, particularly with respect to technology. The most important of these was that a tape recorder was employed in the field so that every word was fixed in magnetic form, which distinguished LAGS from earlier Atlas work, which sporadically used audio recording but depended on on-site transcription for records of the interview. LAGS also began with the creation of an electronic grid based on physical geography, settlement history, and political boundaries, which was something that earlier Atlas projects had not done before field work began. Additionally, LAGS introduced the idiolect synopsis, which provided a broad spectrum of comparable linguistic data from the speech of each informant. Finally, LAGS used microfiche to distribute the data to scholars of Southern American English.

The Linguistic Atlas of the Western States

In an article on the dialects of American English, Pederson (2001: 280) notes that:

> As social products of the nineteenth century, all major varieties [west of the Mississippi River] developed from Eastern sources. Western extensions of Northern, Midland, and Southern patterns reach to the Rocky Mountain states, where Spanish influence and cross currents of settlement reshaped the dialects as distinctive regional composites.

Pederson goes on to state that the "Western dialects suggest the immediate future of the national language more reliably than any other regional pattern" (2001: 287). This recognition of the value of western speech to scholars on American English led Pederson to propose a Linguistic Atlas of the Western States (1990) as a way to find out more about the speech of the western states and as a tool for compiling the autonomous Atlas projects.

In many ways, LAWS guidelines follow from the same deductive approach employed in earlier Atlas projects: After identifying a region as worthy of study, a questionnaire is devised for the project, a grid for conducting fieldwork in the region is established, a community is selected within each grid unit, a suitable informant in each community is located, an interview with that informant is conducted, and field records are collected and analyzed (Pederson 1995). In addition to taking a step toward unifying Linguistic Atlas databases (Pederson 1996b), Atlas work conducted in the West provides data on a region that has been largely overlooked in American dialect research and an area of the United States that, because of its relatively short, well-documented history, may offer scholars insight into the nature of American dialects and dialect formation in general. In addition to providing the phonetic and lexical data upon which dialectologists have traditionally relied, LAWS methods take advantage of technological advancements made since the inception of the Linguistic Atlas, especially in audio recording and computing, enabling researchers to conduct analyses of syntax and pragmatics using the methods of corpus linguistics.

Questionnaire

As in earlier Atlas work, the Linguistic Atlas of the Western States relies on worksheets designed to elicit comparable data across interviews, although the focus of the sheets has been modified to some extent. Pederson (1996a: 53) pointed out that

> [u]nlike the traditional atlas questionnaire, this tool gives no direct attention to morphological or syntactic targets. Such interrogation may yield information about the selection of function words and the inflections of speech parts, but in the process it can also irreparably damage otherwise relaxed conversation. For that reason, the worksheets aim to carry the interview forward in expectation of gathering syntactic data through relaxed discourse.

Designed to take approximately three hours to complete, LAWS worksheets target 360 specific items divided into 12 semantic components; three semantic components are intended to fill one side of a 90-minute cassette tape (i.e. 45 minutes) so that an entire interview requires two audio cassettes. Thus, the pacing of the interview is regulated to some extent by the physical act of turning over the tape, which serves as a reminder for field workers to stay on track with the interview and also provides opportunity for a break in the interview, should one be needed by the informant.

The twelve components of the interview are categorized by semantic domain with each domain pertaining to a single aspect of everyday culture, such as the house and household goods, clothing, local animals, etc. The "landscape" domain, for instance, includes the following targets (see Appendix A for complete LAWS questionnaire and the definitions of worksheet codes):

> 1 local streams# 2 CREEK+ 3 wet weather creek# 4 "MEADOW" 5 "park" 6 "basin" 7 SWAMP# 8 flat-topped hill 9 CLIFF/S+ 10 irrigation ditch 11 irrigation POND 12 ditch along upgraded road 13 poor soil+ 14 productive soil+ 15 sidewalk 16 "boulevard" 17 paved roads# 18 unpaved roads# 19 roadway through mountain 20 "badlands" 21 "high plains" 22 "hole" 23 "MOUNTAIN" 24 HILL# 25 draw 26 canyon# 27 waterfalls# 28 "white water"#(29 wild FLOWERS+ 30 "rock"/"stone"

Although they include few questions pertaining to those occupations that are geographically restricted, such as fishing and mining, the worksheets do include a number of questions about ranching and farming, economic activities that are conducted throughout the state and greater region. Shorter than the worksheets used in earlier Atlas projects, LAWS worksheets are designed so as to not discourage good informants who might balk at the prospect of a longer interview, while at the same time eliciting a great deal of data from all linguistic levels.

Another feature of the structure of the worksheets designed to encourage conversation and to put the informant at ease is that the first component comprises general questions about the informants' lives and the histories of the communities in which they live, positioning the informant as an expert at the onset of the interview. It is not until late in the interview that informants are asked to do tasks that might make them more self-conscious, such as reciting the days of the week and performing a variety of counting exercises.

Grid

Following LAGS methodology, the LAWS framework strives for the best coverage of the area under investigation with the fewest interviews, making the creation of a grid for the region under study critical. As discussed in Pederson (1990), creation of the LAWS grid was not based purely on location but also took historical factors into account. Although county lines are taken into account in the demarcation of grid units, geographically and culturally related counties are merged into single grid units. The LAWS grid comprises 280 units in the continental states west of, and including, Montana, Wyoming, Colorado, and New Mexico, as well as the western part of Texas that was not covered in LAGS. Work has been conducted in some of the grid units of California, by Allyn Partin, and West Texas, by Anne Marie Hamilton (Hamilton-Brehm 2003). Coverage of the LAWS grid has been most extensive in the Middle Rocky Mountain States, as Wyoming's 15 grid units were completed by Michael Madsen (Pederson and Madsen 1989) in 1989, before he went on to complete many of Utah's 22 grid units with the help of his students in the early 1990s. First-round coverage of Colorado's 28 grid units began in 1990 with 18 interviews by David Newton and was completed in 2004.

Field Workers

In contrast to the rigid distinction between field worker and analyst that Gilliéron insisted upon, LAWS operates under the notion that "records will be gathered by two or three interviewers, project participants who will be involved in all phases of the editorial work. This approach improves shared intelligence throughout the course of the investigation" (Pederson 1996a: 53). This methodology is based

on the assumption that fieldwork and analysis can be done by the same person without the tainting the data. After conducting a body of interviews, a field worker participates in transcribing, editing, and analyzing evidence found in these interviews toward the completion of a dissertation on an aspect of the work.

Like other Atlas projects, LAWS strives to use a minimum of field workers, in order to attain a level of consistency, but at the same time it takes into account the practical concerns of completing a region in a reasonable amount of time. As an aid to understanding the influence field worker styles might have on interviews, assessments will be made about individual field worker's styles, as has been done for earlier field workers in the Atlas tradition. For instance, Kretzschmar et al. (1994: 126) made the following assessments of the two primary LAMSAS field workers, Guy Lowman and Raven McDavid:

> [Lowman] observed fewer lexical variants than some other investigators, paid less attention to word meanings, and recorded relatively few forms from free conversation. Working very fast, he suggested rather frequently…McDavid emphasized history, folklore, and local traditions, encouraging alternate responses, synonyms and variant pronunciations. When he could not get a natural response, he would often leave the item blank; on the other hand, he recorded a very large number of conversational responses, especially for grammatical forms. Definitions are generally clear and full.

Such assessments will also be made for LAWS field workers and, to a much greater extent, may be corroborated by an examination of the transcriptions or the recorded interviews. Like other projects conducted in the American Atlas tradition, field workers are expected to conduct analyses of the data after the data has been collected.

Communities

As LAWS methodology relies on the best coverage of an area with the fewest interviews, great care had to be taken in the selection of communities for the study. The selection of a community is subject to several criteria: It must be old enough to sustain a native elderly population; it should serve as a cultural center of the grid unit under investigation; and it should be rural in character, leaving the cities of Colorado, such as Boulder, Colorado Springs, and Denver, for future investigation. As in previous

Atlas projects, field workers are responsible for finding suitable communities for study and locating informants who will agree to be interviewed.

Informants

At the heart of LAWS methodology is the informant, and while ultimately the selection of informants is at the discretion of field workers, the best informants possess several characteristics. Of primary importance is that informants are natives or near natives of the community they are representing. Additionally, first-round coverage requires an elderly informant in each community, for several reasons. Ideal informants are gregarious but not overly talkative, their hearing is good, they have no obvious speech impediments, and they are able to recall some details from their past.

Interviews

With an intended completion time of three hours, LAWS interviews are intended to be significantly shorter than older Atlas interviews, which often took about eight hours to complete. Ideally, LAWS interviews are held in the home of informants for several reasons. The most important is that people are typically most comfortable in their own homes, and the study seeks casual speech most likely "to be produced when people are comfortable. Another reason is that the study primarily elicits words for objects often found in or around the home and these objects can sometimes be used as visual cues when informants are having difficulty visualizing them from oral descriptions.

Each interview comprises four "programs," each of which is about 45 minutes, i.e. one side of a 90-minute cassette tape. In addition to the general Atlas format of prompts and responses, LAWS interviews incorporate two illustrations – one of a saddle and the other of a bridle. Both of these illustrations have numbered parts that informants are asked to identify. Pederson (1990) claims the use of these pictures to be more in the interest of seeing how effective the use of such tools in Atlas work would be than in the actual survey results.

Field Records

Rather than relying on on-site phonetic transcription of earlier works like LANE and LAMSAS, modern Atlas methods utilize mechanical devices to record details of the interview, the use of which has several advantages. First of all, use of recording devices frees the interviewer from on-site transcription, which means that he or she can focus on elicitation or conversation strategies instead. More importantly, however, audio recording provides scholars with speech data that does not rely on the perceptions or transcription practices of field workers. It also allows for entire interviews to be documented on paper and disseminated as texts, enabling researchers to examine features at all levels of language, including syntax and pragmatics. Furthermore, complete transcriptions also allow researchers to look at how items are used in the context of specific interviews to get a better idea of use and meaning. Finally, transcriptions allow researchers to investigate the frequency of specific linguistic items in the interviews, in addition to looking at categorical distinctions in language use.

Protocols

Done in the office rather than in the field, LAWS protocols are transcriptions of entire interviews written in standard orthography as a series of numbered prompts and responses, an organization that is intended to enable researchers to search the interviews for phenomena at all linguistic levels either with or without the aid of computational tools. At the top of each interview is a brief summary of characteristics of the interview in terms of when and where it took place, the name of the field worker conducting the interview, the name of the scribe or scribes, and dates during which transcription took place. Additionally, a list of vocal qualifiers devised by Pederson (1996a) is listed near the top of the first page of each interview to provide an economical way for scribes to communicate to researchers when the participants of an interview performed common nonlinguistic actions, such as coughing, laughing, or audibly hesitating.

Transcriptions are presented in a numbered prompt and response format that typically comprise one prompt and one response per number, as the following example illustrates:

Table 2.1: Excerpt from Alamosa Interview Showing Typical Prompt and Response

Alamosa, Alamosa County, Colorado (11/8/01)
#32
P: Okay. U(F) What's your occupation? And what was your occupation?
R: I was a seamstress at the Jerry Division for thirteen years until they closed it down and moved out and then I, you know I've been working here for five.

When auxiliary informants speak, there is the potential for three speakers per "adjacency pair" so that exchanges appear as in the following examples:

Table 2.2: Excerpt from Beulah Interview with Responses by Two Participants

Beulah, Pueblo County, Colorado (10/23/01)
#119
P: But you two met here in Beulah?
R: Yes.
S: Yeah.
#120
P: Went to school together?
R: No.
S: No, no. I had graduated when we came, when we came here and he was in his U(M) ready for his junior year I think when we came here. U(M)

Table 2.3: Excerpt from Lake City Interview with Responses by Two Participants

Lake City, Hinsdale County, Colorado (9/6/01)
#514
P: Are they heavy?
R: No. Light.
S: Light as a feather.
#515
P: Really.
R: G(A)

At times, primary and auxiliary informants engage in conversation without the field worker intruding, so that the following types of exchanges occur and are formatted as such:

Table 2.4: Excerpt from Lake City Interview with Auxiliary Informant as Sole Respondent

Lake City, Hinsdale County, Colorado (9/6/01)
#585
P: Yeah. Do they, do those grow?
S: Potatoes grow very well.
#586
R: They're. Yeah. It's a wonderful place.
S: Potatoes and cabbage and cauliflower and broccoli can be grown here.

Table 2.5: Excerpt from Saguache Interview with Auxiliary Informant as Sole Respondent

Saguache, Saguache County, Colorado (9/19/01)
#1152
P: Yeah. Are there different?
R: By and large our weather U(H) is pretty nice.
#1153
P: Yeah. Oh yeah.
S: We get sun how many days a year?
#1154
R: I don't know how many days a year.
S: Three hundred and fifty days of the year they said. Something like that.

The general rule for transcription is that there should be no numbered block in which any one speaker takes more than a single turn.

It should be noted that creating texts in standard orthography is only the first step to be taken in creating written representations of these interviews. Beyond these basic transcriptions, other transcriptions can be created that integrate phonetic transcriptions or part-of-speech tags.

Analysis

Although scribes are encouraged to record noteworthy aspects of the data as they convert the audio data of interviews into orthographic texts, most analysis of the speech takes place after interviews have been transcribed. As was the case in LAGS, LAWS methods preserve all the speech of interviews in audio form; however, unlike LAGS, LAWS represents all the aural data of interviews in written form and has as a goal the implementation of a means by which to distribute aural and written material via the Internet, providing researchers with data by which they may conduct their own analyses on the speech of

the LAWS interviews. This follows from the original goals of the Atlas as a resource, but LAWS methods will be able to provide primary data to a greater extent than earlier Atlas projects because of advancements in technology that have taken place since the advent of Atlas projects, such as audio-recording, computing, and the Internet.

Despite this kind of access for researchers, LAWS workers will present some aspects of the data as a way of summarizing findings. One of these is the creation of an idiolect synopsis for each informant, which was an innovation Pederson created for the LAGS project. These synopses will provide an inventory of phonemes and their phonetic realization in an array of linguistic environments, providing systematic information for students interested in the phonology of the region, as well as to gain insight into earlier lexical research in the West (Pederson 1996b: 235).

The examination of features at any linguistic level will benefit in that the context they occur in will be relatively easy to retrieve. The pragmatics of Atlas interviews, for instance, will be retrievable as researchers will be able to investigate the corpus for evidence of such phenomenon as linguistic accommodation between field worker and informant. Thus, LAWS data will be available for a variety of uses among students of western speech.

Distribution of Materials

In his report on the American Linguistic Atlas Projects (ALAP), Kretzschmar (2001) discusses the current status of Atlas databases and their future direction. He argues that in order for the Atlas materials to be most useful to students of American English

> [i]nterviews must be presented fully and fairly for analysis. Since there are many potential uses for interview results, no investigator can expect to do all the analysis at one time or in one place. The data itself should therefore be published, in line with the traditional practice of ALAP [American Linguistic Atlas Project]. Moreover, the data should be made as accessible as possible, preferably on the Web, in both text and sound files.

Additionally, Kretzschmar points out that for Atlas materials to be of the greatest value to researchers, ways must be found to expedite data collection, transcription and Web publication with moderate funding, if this type of research is to be practical and useful. Because they were conducted relatively recently and were all tape-recorded, LAWS interviews might serve as the best model for implementing the notions and reaching the goals that Kretzschmar sets.

More specifically, Kretzschmar calls for the implementation of XML to code data in the transcription and XSL to create style sheets to offer scholars the greatest possibilities for analyzing the materials. These tools will give users all methods for accessing and comparing data that are now being used to examine LAMSAS materials online, while using tools that can take advantage of newer methods in Atlas research, such as the use of sound files and full-length transcriptions.

Other Resources on Western American English

Aside from work in dialectology conducted using Atlas methodology, scholars of regional variation in American English have access to several sources, including the *Dictionary of American Regional English* (DARE), which was edited by Cassidy et al. and is being published in installments (1985-). DARE uses a variety of methods, including results from its own questionnaire, Atlas records, and American Dialect Society publications. Surveying the entire country, DARE conducted 2,777 interviews in 1,002 communities; editing began in 1975 and is an ongoing process. DARE also has 1,842 audiotape recordings that it made between 1965 and 1970 that it has begun remastering and duplicating as the original tapes grow brittle and has plans to digitize its collection once funding is acquired (Hall 2003: 51).

Using both DARE and Linguistic Atlas records, Craig Carver took an aggregate approach in compiling his book on American dialects (1987), including those of the western United States. Observing some of the same problems of using the methods of traditional dialectology that were observed by Kimmerle et al. (1951), Carver argues that "[t]he newness of the West is perhaps its single unifying feature, which at the same time is its most disunifying force, at least in terms of a dialectology that

attempts to describe the geography of speech" (1987: 243). Although he notes geographic distributions in several lexical items not only suggesting differences between the western and the eastern United States but between the Rocky Mountain region and the Pacific Coast, Carver concludes that the biggest obstacle to understanding the speech of the West comes not as a result of social and geographic conditions in the West, but as a result of the lack of data.

In their work on the Atlas of North American English, Labov, Ash and Boberg (1997) collected data using telephone interviews (TELSUR) with informants in the region and use the data as evidence for three dialects of American English based on the existence of vowel shifts. Targeting all cities with a population over 50,000, "the Atlas design is based on the bold assumption that the first two local residents to answer their telephones – people who were born and raised in the speech commu[n]ity – would represent the linguistic pattern of that community" (Labov et al. 1997: 2). Primarily concerned with phonological variation, Labov and his team use acoustic phonetics as well as impressionistic ratings to support the claim there are three major dialects of American English: the North (characterized by what Labov calls the Northern Cities Shift), the South (with its Southern Shift), and a third dialect spanning the Midland and West (characterized by a merger of two vowels, which Labov et al. refer to as the Low Back Vowel Merger). In their characterization of Western American English, Labov et al. argue that the phonological system emerging in the West was shaped by eastern influences, particularly the Midland region. Labov *et al.* also find that rather than the lack of linguistic character predicted for the region, a fair degree of homogeneity is emerging in urban dialects of the West with specific features that distinguish the area from other dialect regions of the United States. Specifically Labov et al. find that the combination of the Low Back Merger and fronted /uw/, which is in complementary distribution with the Low Back Merger in Midland speech, makes the West a unique dialect region. According to Labov (1991), while the Low Back Merger is not exclusive to the West, it is a salient characteristic of the region.

Previous Research on Colorado English

Much of the early research on the variety of English spoken in Colorado focuses on the lexicon, particularly those words associated with economic activities that the cultural and physical landscape of the region offered, such as ranching and mining (see e.g. Crofutt 1881; Davidson 1930, 1938). Many, too, have examined the use of place names, including those of Spanish, French, and Native American origin (see e.g. Croffutt 1881, Davidson and Koehler 1931), and the prevalence and importance of these place names is the subject of some discussion in general works on Colorado (see e.g. Fritz 1941). Although these works are informative, they lack a systematic framework for examining issues of language variation in Colorado.

It was not until the late 1940s that the notion of using Atlas methods to collect linguistic data in Colorado was seriously entertained, when Marjorie Kimmerle of the University of Colorado at Boulder and T.M. Pearce of the University of New Mexico revised existing Atlas worksheets for use in the Rocky Mountains. The worksheets were first used by Glenn Johnson (1950) as a written questionnaire for his M.A. thesis on lexical variation among freshmen at the University of Colorado, and the results of Johnson's work encouraged Kimmerle to undertake a dialect study of the entire state using Atlas methods.

Fieldwork began during a seminar hosted by Kimmerle in Boulder and directed by Raven McDavid in the summer of 1950, with the use of the revised worksheets that included approximately 700 target items (Jackson 1956: xviii), some of which were considered unique to the West and had been selected to replace similar items in the eastern states. After establishing a network of communities that were chosen for either their importance in the settlement history of Colorado or their status as cultural centers for specific regions in the state, six field workers conducted 68 interviews in 29 communities scattered throughout the state using the tripartite classification system that had been pioneered in previous Atlas work, and the vast majority of these interviews were conducted by Marjorie Kimmerle. Many of the communities selected as part of the network were part of Colorado's Front Range because of the relatively high population density in the area and because the communities there were older and more stable than communities in other areas of the state; conversely, some of the counties in Colorado were so

sparsely populated at the time that no interviews were conducted in them. The majority of the Colorado informants were considered "*older*" (60 or over in 1950) rather than "younger" (46 older to 22 younger informants), were male rather than female (38 to 30) and were predominately Type I informants (Type 1=46, Type II=13, Type III=10; see Hankey 1960). The records were edited by Kimmerle and Elizabeth Jackson during the 1950s, but, like other Atlas projects of the western states, the Linguistic Atlas of Colorado was not published in a comprehensive form; rather, the original records and some analyses were stored in the archives of the Norlin Library at the University of Colorado at Boulder.

While there was no comprehensive publication of the materials, several articles and dissertations based on the finding of the Colorado Atlas did appear during the ten years following completion of the interviews, including Kimmerle (1950, 1952), Jackson (1956) and Hankey (1960, 1961). Kimmerle wrote on several aspects of language variation in the state, focusing on the areal distribution of various words in Colorado and speculating on historical reasons for these distributions. Kimmerle (1950) discusses lexical variation in Colorado affected by variation in topography, either in the words that are used or, more significantly, in the meaning attached to these words when it differs from the meaning attached to the same words elsewhere. In the first part of the paper, Kimmerle (1950) focuses specifically on *park, hole, cove,* and *lagoon* and their use in Colorado in the first part of the discussion. In the second part of the paper, Kimmerle focuses on economic activities and the words associated with these activities, in relation to topography, focusing in particular on the words *silo, pit, ditch,* and *cellar* and how these words have changed meaning in the West because of differences in the objects to which they refer. Although Kimmerle does not mention using Atlas records for the material in this article, and, in fact, does not explicitly state her methods, all the words she discusses in the article were target items of the Colorado Atlas, suggesting, at the very least, that the article was influenced by Atlas work in Colorado.

In an article published in 1952, Kimmerle explicitly discusses using Atlas records and again focuses on a small number of words, this time discussing the etymologies and areal distributions of lexical variants used for orphan lambs in the Colorado Atlas, of which she finds evidence of three: *penco, bum(mer),* and *poddy*. Of these, *bum(mer)*, which she notes is a word apparently derived from German

Bummer 'idler, loafer, lounger' and was first used in American English to refer to unemployed men, is the most commonly used variant for orphan lambs among the Atlas records that were available to Kimmerle at the time, but in general, Kimmerle found that *bum(mer)* was by far the most common variant in the northern part of the state. On the other hand, Kimmerle found *penco* to be most common in the southern part of the state. Although Kimmerle's research indicated that a wide array of meanings were attached to this Spanish word depending on the dialect of the user (for example, in New Mexico it was used as a term denoting any motherless animal), Kimmerle found that in the Colorado Atlas records it was typically used to denote an orphan lamb and was most common in the area of Colorado in which the Spanish-speaking population traditionally had its greatest concentration. With respect to the term *poddy*, Kimmerle found it to be the most restricted word of the three, occurring twice in the western part of the state near the Utah border and once in the northeastern quadrant of the state. While noting that in general usage the term is most often found in Australian English, Kimmerle found no evidence that Australians were more influential in the localities where informants used *poddy,* but she notes that Australians historically exerted a strong influence over the sheep industry. As an update on Atlas work in Colorado, Kimmerle also stresses that the results of her analysis are tentative and bound to change as more work in interviewing and editing the field records of the Colorado Atlas is conducted. She also notes out that some informants, especially in cities and mining towns, claimed to have no knowledge of sheep and therefore did not respond to questions about them, but speculates that some informants may have remembered the intense cattle and sheep wars that were waged in Colorado at one time and declined to discuss sheep as a result.

Basing her dissertation on the materials of the Colorado Atlas, Jackson (1956) sought to answer whether settlement history or other factors could account for variation in Colorado English by examining the results of Atlas interviews in Colorado and comparing them with corresponding records of the U.S. Census Bureau. Jackson (1956: 1) speculates that it would be challenging to find evidence of dialect regions in Colorado because

> in most Atlas settlements, as generally throughout the State, there has been a recognized cosmopolitanism from the first. Relatively easy transportation and communication east of the Continental Divide from the 1870's onward and an increasingly mixed and mobile population produced here within a quarter century a complexity of stocks which had taken up to ten times longer in many comparable areas of the Eastern United States.

In light of these patterns, Jackson (1956: 7) contends that

> after approximately ninety years of settlement, the speech of Colorado appears to be a blend, illustrating the emergence and spread of some forms and the submergence or complete disappearance of others brought in by various elements of the complex population and still found in the Eastern and Southern regions of the United States where Colorado settlers or their parents originated. Thus the settlement history of native Americans in Colorado seems to be the most likely key to any understanding of the speech of the State.

Furthermore, Jackson predicts that "[c]areful examination of census statistics for the period in which the older informants in these towns were acquiring their basic speech patterns should reveal the major influences that helped to create those patterns" (1956: xxi).

As an editor of the Colorado Atlas, Jackson had access to all the Atlas records that had been collected, but in the face of this overwhelmingly large dataset, she opted to examine a subset of the Atlas data based on community, age of informant, and specific linguistic variants. With respect to community, Jackson examined only those interviews conducted on the plains of Colorado, as well as those in the two largest mountain parks – North Park and San Luis Valley. The park towns, Jackson claims, were not selected haphazardly but each possessed a degree of stability due to its status as ranching, farming, and trade centers not shared by the mining communities in which fieldwork was also conducted; furthermore, the plains settlements and the park communities exhibited a similar isolated character (1956: xx). Jackson also points out that the communities found in these regions represented the range of diversity found in Colorado communities, with some being relatively homogenous in population and speech, e.g. Manassa, and others in which settlement was slow enough that many of the characteristics of the original speech community were still retained, e.g. Longmont, Sterling, and Trinidad. In terms of informant age, Jackson selected only those who were over 60 years old in 1950.

With respect to linguistic variation, Jackson opted to focus her study on lexical data in her subset of Atlas communities rather than phonetic or syntactic data; she further restricted her study to those items Kurath used to explore variation in eastern dialects in chapter three of his *Word Geography of the Eastern United States*. In this way, Jackson argued, Kurath's analyses could be used to determine whether the patterns of speech and word use in Colorado could "be said to have become established among whole communities or areas because a significant proportion of their early population came from one or another section of the Eastern United States" (1956: xxiii). Finally, Jackson also reserved part of her dissertation for words collected by field workers in Colorado that had not been collected in the eastern states using Atlas methodology.

Ultimately, Jackson found the census statistics that she examined to be of questionable value for the Atlas work in Colorado for several reasons. First, she observed that the early settlement of Colorado was of such a transient nature that census statistics from that period were unreliable:

> For the first decade of white settlement in Colorado…census statistics for the period before 1870 are of doubtful value in terms of population backgrounds for the lexical or phonetic study of languages because the population was extremely unstable. The first tide had come with the gold rush of 1859-1860, but receded rapidly when men's hopes of quick riches were dashed. It has been estimated that as many as 100,000 persons, mostly men, were in Colorado soon after the official census for 1860 set the population at 34,277. By 1870, surprisingly small gain reflected the migration back home of many fortune seekers. In that year the total population was 39,864 (Jackson 1956: 10-11).

Jackson also found it problematic to work with later census records because they only gave the name of the states where settlers were originally from and not the specific parts of the states, which was an important distinction, especially for those settlers who came from eastern states that had dialect boundaries running through them, such as Ohio and Pennsylvania.

Despite problems in using the census records, Jackson found evidence in her analysis suggesting that

> Midland is the principal source of Eastern Colorado dialect, a conclusion based on responses and borne out by the history of migration to Eastern secondary

> settlements in the East from which many Colorado settlers came and the history of direct migration into Colorado from Midland areas. Local, areal or regional peculiarities of topography, soil, climate, and special human activity have determined the use of some terms here that are not current in the Eastern United States (1956: Abstract).

Jackson also discovered that the routes of travel into the state from the different regions of the United States were at least partially responsible for the distribution of vocabulary items in the state, a conclusion that Kimmerle, McDavid, and McDavid (1951) had found in their preliminary examination of the Colorado records.

Among the variety of non-English speaking languages used in Colorado, Jackson found only two groups of non-English speakers that could have exerted any influence on the language of the state, viz. speakers of German and Spanish. In the late 1800s, for instance, the number of German settlers in Colorado was high enough to warrant printing the laws of the state in German, in addition to English and Spanish, and several German newspapers were published in the state. Despite the potential for German to have an influence on the English spoken in the state, however, Jackson found the German language to bear little influence on the English spoken there (1956: 3). Jackson (1956: 3-4) speculated that this was due to the way in which immigrants settled in the state, as many came to work in the mining or railroad industries, both of which are, to some degree, transient industries that do not typically allow workers to establish themselves in a specific community. As the state became more agricultural, the newer immigrants settled down on farms. Unlike some of the communities in the eastern states, however, there were few communities of immigrants in Colorado, as immigrants preferred to spread out and assimilated much more quickly than their eastern counterparts.

The exception to this rule was the Hispanic immigrants, who largely settled in the communities of southern Colorado:

> These were not immigrants filtering into an environment where another speech predominated, as were the other non-English-speaking stocks. In the early populations of such counties as Pueblo and Las Animas the situation was exactly the reverse of that experienced by other foreign stocks here: in southern Colorado counties, settlers from the Eastern United States often found

> themselves far outnumbered for some years. The New Mexicans among whom they settled already had an established speech and culture before the land became a territory of the United States in 1848 (Jackson 1956: 5).

Thus, the way in which speakers of Spanish became part of Colorado determined the extent to which it would have an influence on the speech of the region.

Completing his dissertation on the speech of Colorado in 1960, Hankey was the first to use all 68 records of the Colorado Atlas as the basis for his writings, even though, as he points out, some of the interviews varied in completeness. Hankey primarily focused on the distribution of eastern dialect variants in Colorado, using some the published works from the eastern Atlas projects as the basis for comparison. Although he found that many eastern expressions could be found in Colorado, and also found some evidence of dialect boundaries in the distribution of these expressions, Hankey more often found an overlapping, and sometimes highly irregular, areal distribution of eastern terms in Colorado (1960: 10). Given the previous work of Jackson showing that Colorado was a dialect mixture due to the large number of settlers that came out of other regions of dialect mixture, and the relative short history of Colorado communities compared to communities on the eastern seaboard, Hankey was not surprised with his initial findings but sought a methodology in which to learn more about the dialect mixture of Colorado.

To do so, Hankey used what dialectologists call a participation method, which relies on the categorization of variants as belonging to a certain social or regional group, such as Northern, Southern, or Midland, based on qualitative or significant quantitative relationships between the variants and that group. Specifically, Hankey categorized a community as Midland if a single informant provided 12 or more Midland responses, Northern if an informant used at least 11 Northern responses, and Southern if an informant used 10 or more Southern responses. While admitting that data might be distorted using this method (see Schneider 1988 for criticism of Carver's use of the participation method), Hankey contends that "only by some such simplification can we make any sort of concise general statement about Colorado usage" (1960: 17).

Through the use of the participation method, Hankey was able to make a number of observations about the use of eastern expressions in Colorado:

> No such statement of geographical limit is possible for Northern and Midland communities. Except for Georgetown, all communities show at least one of the three major Eastern dialects as prominent. While only Gunnison and Denver appear as "Yankee Islands" from this point of view, the absence of Northern strength in Akron, Trinidad, Saguache, Castle Rock, and Silverton indicates a greater Midland speech prominence. But, except for the exclusiveness suggested for Gunnison and Denver (Northern) in contrast to Castle Rock, Saguache, and Silverton (Midland), the overlapping of Northern and Midland is the rule in Colorado (1960: 19).

However, like Kimmerle et al. (1951), Hankey found that the mixture of linguistic variants was not entirely erratic and that the data provided some evidence for the influence of settlement patterns on the speech of Colorado. Furthermore, Hankey contended that while there were rarely definite dialect boundaries in Colorado, there was a linguistic environment from which a later Colorado dialect might emerge

Hankey arrived at several conclusions regarding the results of his study. His first was that Colorado English had Midland speech as its base, which was not only suggested by the distribution of linguistic items but by the state's settlement history:

> While we must often assume a mixture of these dialects outside Colorado, there are inferences to support the probability of an early Midland settlement that has continued to provide Colorado's basic usage. In addition to Miss Jackson's frequent appeal to Midland origins for Colorado speech, we find that a slight weight in numbers – both of items and of relative frequency – indicates the greater prominence for Midland usage. But the most important single reason for assuming a Midland base to Colorado's dialect mixture is the effect of comparing older and younger informants in determining which are Midland or Northern communities (Hankey 1960: 23).

But over this Midland base, Hankey noted the apparent spread of Northern forms, even where a surfacing of Northern forms would be unexpected. Hankey speculates that this situation might be the result of education, as "[p]erhaps Northern speech forms may have carried a measure of prestige" (1960: 73), and

also notes that a relative absence of Midland forms in the speech of younger informants in the survey suggests that Northern forms might spread even more.

With respect to Southern terms, Hankey found their use generally limited to eastern and southern Colorado and says that in none of the communities in either area was it the case that Southern was the only prominent dialect type in use. Hankey infers from this limited distribution, as well as from the observation that many Southern expressions were rare in Colorado, that Southern features should be considered dialect relics throughout most of Colorado.

Contrary to the expectations that many people had for the states of the West, Hankey found clear-cut distinctions for several terms, of which many were in reference to characteristics of the region: "In Colorado the bundling of isoglosses often depends upon the physical characteristics and local fauna of the state" (1960: 34). Because these differences were most evident in comparing the plains region of the state and the mountain region, Hankey discovered that bundles of isoglosses followed a north-south pattern along the Front Range in Colorado, rather than the east-west boundaries that were more typical of the dialect boundaries in the eastern states. Finally, Hankey found evidence within the state of three minor dialect areas: the eastern plains, southern Colorado, and the southwestern portion of the state, and he concluded that while Colorado had the dialect mixture characteristic of a transition area, the mixture was not completely erratic, but that there was a linguistic environment from which a dialect of Colorado and a dialect of the Rocky Mountain region might emerge.

As have others who have looked at Atlas records in the West (e.g. Kimmerle 1950, 1952; Bright 1971), Hankey discusses the use of Spanish in the Colorado records and noted not only the use of common words that had the potential of becoming national terms, e.g. *corral, ranch, canyon, adobe*, and *chaps*, but also terms that had more limited distributions, e.g. *lagoon, arroyo* and *penco*. Hankey found that *lagoon* was limited to eastern Colorado, while *arroyo* and *penco* were confined to the southern part, although they were both found a bit more to the north in the eastern part of the state than they did in the western. In addition to his examination of the lexicon of Colorado, Hankey discusses some matter of pronunciation differences in Colorado and makes a number of observations based on these observations.

For instance, he notes fairly widespread competition between [krɪk] and [krik], [bɑɹo] and [bero], and [rʊts] and [ruts].

In a 1961 article, Hankey explores the issue of semantic confusion in the Colorado Atlas records, discussing an array of words originating in eastern varieties of American English that took on new meanings in the West. Hankey found terms used to refer to a single thing in eastern varieties of American English were used for at least two different referents in Colorado English. For instance, several Colorado informants made a distinction between the relatively long dry period they referred to as a *drouth* and the shorter *dry spell*. Further adding to this confusion, Hankey points out also that a term may be used polysemously, as in the case of *go-devil*, which some people consider a generic term for all kinds of farming implement, while other informants believe that the word clearly refers to either a cultivator or a type of buck rake. Hankey recognized that Atlas records could be imprecise with respect to semantics but also believed that there was evidence in the records that could be used to look beyond the levels of vocabulary, pronunciation and grammar and into what informants mean by the words they use.

Although other works have dealt with Colorado English to some extent (e.g. Carver 1987, Labov 1997), they have done so as part of larger studies on Western American English and do not concentrate specifically on the speech of the state. Both Carver and Labov suggest that more data is needed on Western American English – Carver directly and Labov et al. (1997: 1) in saying that "the Atlas [of North American English] does not give information on many important rural dialects and many areas of small towns with a distinctive character of its [sic] own."

In general, the literature reveals a great deal of interest in the speech of a region that is showing some signs of an emerging regional identity, but one in which there is much to be done in the way of collecting empirical evidence in order to present an adequate description. Although they may be of some use for future studies done in the spirit of Ellen Johnson's (1996) real-time trend study on variation in the language of the southeastern United States, the Colorado Atlas records that were collected in the 1950s are of limited use in a description of current Colorado English because these records were collected

relatively early in the history of the region possibly before a linguistic identity had a chance to emerge. The LAWS methods proposed by Pederson (1990) will enable researchers to go beyond the limitations of earlier Atlas materials and to use the latest tools in computing to not only examine the lexicon and pronunciation of Atlas informants but also to investigate the grammar and discourse of the interviews as well. The project also aims to serve as a foundation for future sociolinguistic research in the region, just as early LAMSAS and LANE records have been used as the starting point for studies conducted in the eastern United States.

CHAPTER 3

METHODOLOGY

In the previous chapter, I presented a history of dialectology from its beginnings in Europe in the nineteenth century to more recent work in the Atlas tradition, as discussed in Pederson's (1990) proposal for a Linguistic Atlas of the Western States, and I summarized work that was previously done on Colorado English, much of it collected using traditional Atlas methods. In this chapter, I discuss the implementation of LAWS methods in Colorado, including field work and analysis, primarily focusing on my own experiences in completing first-round coverage of the state.

Colorado Field Work

Although LAWS research in Wyoming was conducted by a single field worker, several field workers contributed to first-round coverage of Colorado. LAWS field work commenced in Colorado in the summer of 1990 when David Newton conducted interviews as a doctoral student at Emory University under the direction of Lee Pederson, completing interviews in grid units that included the counties of Boulder, Chaffee, Clear Creek, Custer, Delta, Dolores, Douglas, Grand, Gilpin, Jackson, Jefferson, Lincoln, Moffatt, Park, Prowers, and Rio Grande. In 1991, Josephine Preston, a student of Michael Madsen at Brigham Young University, conducted an interview in the town of Kremmling in Grand County. These interviews, as well as recordings of interviews conducted in Wyoming and Utah, were kept by Pederson until he submitted them to the Linguistic Atlas office at the University of Georgia in 2000.

Interest in the LAWS project was renewed when Pederson and Kretzschmar led a seminar in phonetic transcription and LAWS methodology at the University of Georgia in the spring of 2000. Pederson had previously transcribed three of Newton's interviews (Del Norte, Rio Grande; Durango, La

Plata; and Idalia, Yuma), and students in the seminar each selected one of Newton's interviews to transcribe in order to inform discussion on the challenges of LAWS field work and transcription practices. During this semester, several slight modifications to LAWS transcription methods were suggested and the implementation of these will be discussed below. Several students considered doing LAWS field work for their own dissertation research projects, and applications were prepared and submitted to the National Science Foundation for funding of such projects.

After being awarded an NSF Doctoral Dissertation Grant in 2001 to complete Colorado field work and to write a dissertation on the subject, I prepared for Colorado field work by identifying those grid units in which Newton had not conducted interviews and attempted to identify communities in which I might find interview subjects. I also listened to Newton's interviews and assessed them in terms of completeness, quality of recording, and quality of informant. This assessment identified several interviews with problems, such as a short in the microphone cable during one interview (Limon) and an informant who was unable to complete the interview (Delta), and these issues would justify finding other informants in these grid units, if only to serve as supplemental informants. These grid units were added to the list of places to attempt to locate interviews after the completion of initial coverage.

As additional preparation for field work, I acquired a copy of the LAWS worksheets, made enlarged copies of saddle and bridle illustrations from Webster's International Dictionary, and gathered recording equipment, including a tape recorder, tapes, batteries and microphone. As I had acquired some experience in interviewing using several methods in projects I had done for Ellen Johnson at the University of Georgia and Keith Denning at Eastern Michigan University, I did not conduct a pilot interview before going to Colorado; however, I did test the equipment and familiarized myself with the worksheets, devising some strategies for eliciting some of the more unusual items in them.

For recording purposes, I elected to use a Marantz Portable Cassette Recorder PMD221 and primarily used high-bias Maxell XLII 90-minute cassette tapes. Although other audio-recording options had been considered, e.g. DAT and mini-disc recorders, I opted to use older technology for several reasons. First, earlier LAWS interviews, and more specifically, the earlier Colorado interviews, had all

been recorded on cassette tape, so that to continue using this medium would mean consistency in terms of format and sound quality. Also, at the time that I initially went into the field, home recording on compact disc had only recently become possible, so that finding recordable compact disks should I need them, especially in some of the more isolated areas of Colorado, might have presented a problem, whereas finding high-quality cassette tapes at the time would not. I was also very familiar and comfortable with cassette recording, and I assumed that many of my informants would be as well, so that a tape recorder would not be too intrusive in an interview situation, whereas bringing, for instance, a laptop computer into someone's home might create some tension among people not familiar with, or even a bit apprehensive of, such technology.

I also made two choices concerning options offered by the tape recorder. The first is that I chose to operate the machine on battery power, despite some of the problems associated with batteries, rather than on AC power for several reasons. One reason I chose batteries is that I was concerned with noise that could be created on recordings using a power adapter with an ungrounded electrical outlet, which I suspected had been the cause of some of the noise that I had heard on some of the earlier LAWS recordings. Additionally, I did not want to confine an interview to a certain part of the house simply because it had an outlet, and I did not want the interview to necessarily be restricted to one part of the house should an informant want to show me another part of the house or some household item in another room during the course of the interview. The interviews in Saguache and Gardner both benefited from this decision when, respectively, one of the informants showed me a lamp that had been made from a shotgun in the living room and the other allowed me to see a collection of letters from state and local politicians and magazine covers that were displayed on the walls of his garage.

The concern for mobility should the need arise was also one of the primary reasons I opted to use the tape recorder's internal microphone rather than an external microphone for interviewing. Other reasons included the self-consciousness that an external microphone might induce in an informant, and the additional technical problems that could result from the use of a microphone, such as noise created by an electrical short in the microphone cable, which had apparently created major audio problems on the

tape of the interview that Newton conducted in Limon in 1990. In short, I decided that recording with an external microphone that provided slightly better sound quality had fewer advantages than recording using the internal microphone of the tape recorder.

As I was preparing for the field, a ten-year hiatus in Colorado field work came to an end when Meredith Barna – an undergraduate linguistics major at the University of Georgia at the time – conducted an interview in the town of Crested Butte in Gunnison County while visiting a friend in the area in August of 2001. Although it does not contribute to the data set I am analyzing for this study, Barna's interview and the story of her experiences in getting it were helpful to me as I prepared for my own venture into the field and the interview she conducted in Crested Butte should be the subject of future research.

In late August 2001, I drove from Georgia to Colorado and conducted my first interview in the northwestern town of Meeker in early September. Because, in some sense, I was filling in gaps in the Colorado grid, and as Newton had covered all the grid units within easy distance of Denver, the distances I had to drive were great. For instance, after leaving Meeker, the nearest grid unit that needed coverage was in the south-central part of the state, where I conducted an interview in the mountain town of Lake City before driving out to the far southeastern county of Baca, conducting an interview in the plains town of Springfield on September 10.

The grid units on the map I had were clearly labeled and had some suggestions of communities that might yield good informants; however, the proposed communities varied in their suitability for such work. For instance, some of the communities were so small that they lacked any gatekeeping institutions, e.g. a library, church, or senior citizen center, where I might be referred to suitable informants, forcing me to abandon some of the communities I had preselected for nearby towns that did have such institutions. Fortunately, it seems that many small towns in Colorado take their history quite seriously, so they at the very least have museums that proved to be useful for finding informants. Unfortunately, I discovered that the informants I found through museums often had very preconceived notions about what the interview was about, even when an attempt was made to articulate that history was only a small part of the interview. Other institutions that served well as gatekeepers in searching for suitable informants in

Colorado were senior citizen centers, libraries, county extension agents, and newspapers, one of which – the *Saguache Crescent* – is printed on one of only a handful of hot-lead presses operating in the United States today. Although the Internet was useful in researching potential communities for research, it was not very helpful in finding specific informants, except in the case of one informant who I found through the website of a local historical society of which he was a member. Even then, however, I did not contact him directly through the site but was referred to him by a younger person who maintained the site.

Other communities had gatekeeping institutions but simply did not have a body of elderly native residents from which to select a potential informant. For instance, as was the case with many towns that originated for the sole purpose of mining, Cripple Creek's population was relatively transient, as people left when opportunities in mining vanished almost as quickly as they had arrived during the town's boom days. For those who did try to stay and engage in other activities besides or in addition to mining, the difficulty of surviving physically and economically at 9,000-plus feet became a significant challenge. The last straw for most of the remaining old-timers came with the advent of legalized gambling in the early 1990s, and they moved to Colorado cities or to neighboring states such as Arizona. By all accounts, only one elderly couple born in the community still remained in Cripple Creek by the time I arrived in October 2001, and they were unavailable for interviewing due to health issues and scheduling problems. Fortunately, I found an interview in nearby Florissant through a librarian at the town library.

I should mention that I typically avoided telling my gatekeepers or my informants for this project that the interview focused on language, linguistics or dialect, simply to minimize self-conscious use of language in the interview. Instead, I simply mentioned that the interview was concerned with the culture of the region as expressed through language. This vagueness usually worked well, except that some informants were then surprised at the end by the elicitation, for instance, of the days of the week and months of the year, which forced me to be more specific about the goals of the interview. Most informants, however, had recognized the goal of the interview by then, and understood the reason for being more explicit about the nature of the interview from the onset. The only other problem that occurred in reaction to my vagueness on the subject of the study was that some people assumed the

interview to be more historical than it is intended to be, despite my telling the informants that it was not a historical survey. This misunderstanding can be attributed partially to the focus on history at the beginning of the interview, partially to the popularity of the oral narrative in historical field work, and partially attributed, at least in the case of some of the interviews, that I had located them through the local museum. Most informants were able to shift away from an historical perspective once we progressed through the interview.

Among the potential informants that I had been directed to approach by gatekeepers, several were reticent to submit to a three-hour interview with a stranger, while others were simply uninterested in the project. In some communities, such as in the San Luis Valley where illegal immigration is common, residents are said to often eye strangers with suspicion, mainly out of fear they are with the I.N.S. All-too-frequent stories in the news about fraudulent schemes designed to trick the elderly out of their money or possessions serves to make entering someone's home for legitimate field work challenging at times, and the events of September 11, 2001, near the beginning of my first venture into the field, also served to heighten the suspicions of potential informants. Other potential informants said they simply did not have the time, or they would submit to an interview but they would not allow it to be tape recorded. Despite some of these problems, many people did go out of there way to help me in this project, as it is in their nature to help younger people, and some were flattered by the attention of being interviewed by someone from the academic community.

Due to the challenge of finding suitable informants willing to submit to a lengthy interview, some allowances had to be made for informants who were not necessarily ideal informants. For instance, some of the informants were born in the neighboring states of Nebraska and Kansas and had moved to the community at a young age. Also, some informants had spent a portion of their adult life in Denver or overseas, especially during World War II. And while the parents of few informants were actually born in the same community in which the interview had taken place, and many were instead from neighboring states or from the eastern United States, only a small number of informants were from families whose involvement in the community stretched back several generations.

Despite some of these problems, which were among some of the concerns discussed in Kimmerle et al. (1951), I was eventually successful in finding interviews with suitable informants in all the grid units needed to complete Colorado, conducting interviews in the counties of Rio Blanco, Hinsdale, Baca, Teller, Saguache, Huerfano, Las Animas, Morgan, Lake, Lincoln, Hinsdale, Saguache, Baca, Alamosa, and Conejos between 2001 and 2004. Not all of these interviews were completed but all have been saved and archived with the intention that incomplete interviews might have some use as auxiliary interviews. Although informants varied in the amount of data they contributed to the project, all were of some use to me, if only in the experience I acquired that allowed me to grow as an interviewer. Perhaps the most important thing that I learned from field work is that, as a rule, interviews are seldom ideal in every aspect, and I was often reminded of a biographical sketch of one of Raven McDavid's LANCS informants in which McDavid made the following observation: "Clear mind, no teeth."

Interviewees were informed at the beginning of the interviews that they request the tape-recorded be turned off at any point in the interview or that the interview could be terminated at their request. The latter never happened once an interview was in session. As for the former, there were few times that informants asked for the recorder to be shut off, and those few times were usually ones in which informants were going to either use a word that could be deemed offensive, such as an expletive or a racial slur, or were going to impart some biographical information that they wanted to keep private. Another reason for informants requesting the tape recorder be shut off was when they wanted to ask me a question in order to get clarification on a portion of the interview. I usually made sure to shut the tape recorder off when the informant had to take a phone call or when someone, usually a family member, had come home and we were introduced. Other than one miscommunication in which a tape recorder was left on without the informant's knowledge, there was never any problem with recording; most informants realized that tape recording was standard in this type of work and were confident that the information on the tapes would be treated with care to keep the informants anonymous. For ease of reference, as well as to guard their anonymity, informants are identified by their community or by their grid unit throughout the study.

Although most interviews were conducted in a single three-hour session, with several going a little over the three-hour allotment, there were some exceptions. A few interviews lasted only two and a half hours, due to either impatience on the part of the informant or a prior commitment they had to keep. Other than not lasting the entire three hours, these were good interviews in that they covered approximately 75% of the items on the worksheets and, as such, they are considered primary interviews. One interview (Lake City) was conducted in two sessions with a break for lunch in between; the portion of the interview done after a big lunch is markedly slower and less energetic than the first part, but the interview was completed without difficulty and ended up being just a little over three hours. Additionally, two interviews were each conducted in two sessions with a relatively long period of time in between, and in neither of these interviews was the second session conducted in the same place as the first. The first of these interviews was conducted in Alamosa in the informant's workplace and was followed-up with a short session within the year in the local chapter of the Veterans of Foreign Wars, of which the informant was a member. The two sessions of this interview culminated in over three hours of tape-recorded speech. The second of these interviews was conducted in the informant's workplace in Manassa and was followed up a few months later with a short telephone interview between the informant's home in Manassa and the field worker's home in Athens, Georgia. Although no provision is made for telephone interviewing in LAWS methodology, this part of the interview was short and was done merely to complete what was already a nearly complete interview. It should be noted that while this interview is part of the Colorado database, it will not be analyzed in this study, as the Alamosa interview is the primary interview for the lower San Luis Valley grid unit. On a final note, although the only evidence is that which is on the tapes, several of Newton's interviews were apparently done in multiple sessions, sometimes over a period of days and in different places, but there are no noticeable differences between the styles of these interviews, other than the occasional shift in deixis, e.g. an informant referring to her house as "over there" in the first part of an interview and as "here" in the second part.

During some of the interviews, I took notes on a pad of paper and, although these notes were sometimes helpful as part of the interview process, they were not done systematically and are, therefore,

of little use for the data analysis part of the project. My taking notes was also often more of a distraction for the informant than they were of use to me, so I would typically stop taking any notes and put them away during the course of interviews. Worksheets could sometimes be obtrusive as some informants realized that at least some of the target items appeared on the sheets. Fortunately, the few times that informants tried to refer to the worksheets for a possible answer, I did not have one.

One component of the interview is worth discussing here – that of using illustrations of a saddle and a bridle and asking informants to identify the numbered parts of each illustration to the best of their ability. Many informants had trouble with the illustrations simply due to the fact that it had been so long since they had ridden a horse that they could not remember the names of parts of riding gear; nevertheless, some informants were able to remember some names of parts that they probably would not have been able to without the illustration. Another problem was the illustrations themselves, as many informants had trouble seeing the parts or had used a slightly different saddle or bridle that did not have identical parts. As an unintended result of this confusion, however, some informants may have used some of their most unguarded speech during this segment of the interview. Furthermore, informants also used the numbers in a way that was probably much less guarded than the counting task used later in the interview. In general, using the illustrations had mixed results as far as lexical data are concerned, but their use has some effect on speech that should be developed in future research.

Each interview concluded with a discussion of the human subjects consent form that I was required by the University of Georgia and the National Science Foundation to have each informant sign. Although I mentioned this matter at the beginning of each interview, the language of the form is very formal and I wanted to create as comfortable an interview environment as possible, so I used informal language to summarize the key points of the document, including where the interviews would be kept and their ability to access them, and their right to terminate the interview at any time, and then told my informants that we would take this matter up again at the end of the interview. After the interview, I gave them the form, allowed them time to read it, and offered to answer any questions they had about it. Those few questions that informants had about the form were usually minor concerns that were easily answered,

and informants signed the form and gave it back to me. I left a copy of the form with the informants for their own records, so they could refer back to the agreement if they needed to at some point and because the form included contact information for the Atlas office and myself should informants have any questions about their involvement in the project later and the signed forms are on file in the Atlas office at the University of Georgia. No informants expressed any issues with the form or the interview in general, either at the time or since.

The only other forms signed by informants were an option for those who agreed to the inclusion of their interviews in the American National Corpus, a corpus of spoken American English being compiled under the direction of Randi Reppen at Northern Arizona University. Under this agreement, informants were paid $50 for the interview, which also required the signing and subsequent submission of a form to the University of Georgia. As this opportunity arose only after I had been in the field for some time, I had the chance to ask only a few informants if they would be interested in doing this and two of the four informants I asked agreed to it; copies of the interviews that I conducted with them and the signed consent forms have since been submitted to Northern Arizona University. The two informants who rejected the offer were wary because they were required to submit their social security number for tax purposes.

In order to safeguard my work, I duplicated interview recordings while I was in the field and sent copies to the Linguistic Atlas office at the University of Georgia. The master recordings I kept on hand so that I could begin transcription on them when not preparing for or conducting other interviews. There are now three tape copies of all interviews besides the two interviews that were sent to Northern Arizona University: One set is housed in the Atlas office, another in the archives of the University of Georgia, and another set is in my possession. Finally, interviews are undergoing digitization so they can be stored on compact disk and computer hard drives, which allows for more secure long-term preservation.

Although there is the potential for more field work in Colorado, e.g. a round of interviews with a younger generation of informants, informants of Hispanic origin, or urban residents, first-round coverage of the state was completed with an interview I conducted in Limon in 2004. In all, the Colorado Corpus

comprises 39 interviews conducted by four field workers from 1990 to 2004, and these interviews vary in completeness and quality. Several interviews are incomplete and should be considered auxiliary interviews at best. If there is subsequent coverage of Colorado, the field worker or field workers should assess these interviews and seek to replace those interviews that fall below a set standard.

Transcription

Because of the length of LAWS interviews**,** transcription of the Colorado interviews has been a time-consuming process. In the late 1990s, Pederson transcribed several interviews conducted by Newton, including the Durango interview, which was used as the model for subsequent transcription. Several of Newton's interviews were then transcribed by graduate students enrolled in a seminar taught by Pederson and Kretzschmar in 2000 and there was some discussion about modifications that should be implemented as part of the transcription protocol to improve transcriptions.

Each transcription is created as a document written in Microsoft Word. The top of the document includes information vital to the interview, including where and when the interview was conducted, who the field worker was, and who transcribed it; the header also included the key for the codes used to represent extralinguistic variables that occur in the interviews, such as false starts, laughter, and coughing, which need to be represented in the interviews because of the impact they can have on syntax. Transcriptions are written in a prompt-and-response format in numbered adjacency pairs, as dictated by LAWS methodology. Punctuation is kept to a minimum in transcription.

Although most of my time in the field was spent traveling between towns and trying to locate informants once I arrived at my destinations, I did manage to get some transcription done while in Colorado, using pen and paper to transcribe interviews, entering them into the computer at a later time. Doing this not only helped me get a head start on transcription, but it also forced me to assess my own interviewing style while I was out in the field, giving me the opportunity to make adjustments and improvements as I went. I transcribed several interviews conducted by all three field workers, and the

NSF grant enabled me to hire workers to transcribe my interviews. The following table shows the status of each interview concerning transcription:

Table 3.1: Status of Colorado Interview Transcription

Interviews (by comm.)	Transcription Status	Scribe(s)
Craig	not transcribed	
Walden	completed	Betsy Barry, Lamont Antieau
Kremmling	completed	Lamont Antieau
Black Hawk	completed	Lamont Antieau
Georgetown	not transcribed	
Hygiene	completed	Lamont Antieau
Longmont	not transcribed	
Sedgwick	completed	Lamont Antieau
Brush	completed	Lamont Antieau
Brush (aux)	completed	Lamont Antieau
Meeker	completed	Lamont Antieau
Leadville	completed	Tim Riley
Buena Vista	completed	Zeina Maalouf, Lamont Antieau
Jefferson	not transcribed	
Idledale	not transcribed	
Larkspur	not transcribed	
Idalia	completed	Lee Pederson
Limon	completed	Lamont Antieau
Limon (aux)	not transcribed	
Delta	completed	Clayton Darwin, Lamont Antieau
Crested Butte	not transcribed	
Gunnison	not transcribed	
Lake City	completed	Lamont Antieau
Saguache	completed	Carla Johnson
Westcliffe	partially transcribed	Susan Tamasi
Beulah	completed	Kathryn Morgan
Beulah/Burnt Mill (aux)	not transcribed	
Peyton	completed	Lamont Antieau
Lamar	completed	Lamont Antieau, Kathryn Morgan
Durango	completed	Lee Pederson
Dove Creek	not transcribed	
Pagosa Springs	completed	Lamont Antieau
Alamosa	completed	Carla Johnson, Tim Riley, Lamont Antieau
Manassa	not transcribed	
Gardner	not transcribed	
Trinidad	partially transcribed	Lamont Antieau
Weston	not transcribed	
Springfield	completed	Brooke Heller, Lamont Antieau, Ed Cowan

Of all the scribes, five were students in a seminar conducted by Pederson and Kretzschmar in 2000 (Antieau, Barry, Darwin, Maalouf, and Tamasi), two were other students I hired in 2002 (Heller, Johnson), and three were acquaintances I hired (Cowan, Morgan, and Riley). Aside from those graduate students in the seminar, all scribes were trained to use a template that I provided them for LAWS scribal work; all scribes had formal linguistic training except for Cowan and Riley, but the use of orthographic transcription to represent the speech of the interviews meant that such training was not required. In all, there are now 22 complete transcriptions ranging from 95 to 224 pages; additionally, two interviews have been only partially transcribed.

Just as transcription is still ongoing, editing the transcriptions is also an ongoing process. I have edited all the interviews transcribed by others and have found that the most recurring problems are scribes' difficulties in interpreting the names of some of the more obscure local towns that informants mentioned, such as Saguache or Buena Vista. In these cases, scribes typically used names that were more familiar to them, misinterpreted place names as something other than names, or simply marked that they could not determine what was being said. Since I had more familiarity with these places, having visited them or having heard informants use these names in conversation, it was usually easy for me to correct these problems. Some of the more obscure target words also gave the scribes trouble, such as *shivaree*, but these were easy enough for me to locate and fix. Additionally, there are some folk terms not included in most standard dictionaries for which there is little consensus, and I used the *Dictionary of American Regional English* (DARE) when I could to identify the best spelling for each; for those with no entry in *DARE* or other reliable sources, I simply chose the spelling that I thought best represented the sound of the word. Lastly, some of the individual expressions and conversation fillers that informants used, that perhaps we all have to some extent in our speech, sometimes gave the scribes real trouble in interpreting what was being said, but careful listening over time was typically enough for me to transcribe these properly. At least one editing pass will be completed before we begin with text markup procedures.

As a final step of the editing process, I will modify all transcriptions in order to preserve the anonymity of informants. In addition to labeling the tapes and the transcriptions in code, there are some

instances when informants stated their addresses or used the names of friends and relatives and these need to be expunged from the documents. There is also some highly personal information that is irrelevant to the focus on dialect and culture in the interviews that needs to be assessed and possibly eliminated from the transcriptions made available to the public, although these details will be retained in the originals that will be archived.

Analysis of Field Records

As a dialect study, this study will use data collected in Colorado to describe the speech of Colorado and to show how this variety of speech owes much of its current usage to settlement history, especially with respect to eastern American dialects and Spanish. The examination will begin with an inventory of features used in the Colorado corpus at various linguistic levels, including the lexicon, pronunciation, and syntax. Comparison will then be drawn between features observed in this inventory with the same types of features found in the seminal works of eastern American English, namely Kurath (1949), Atwood (1953), and Kurath and McDavid (1961).

Community Characteristics

Due to the length of time required to transcribe an interview in its entirety and the desire to restrict the examination to completed transcriptions, only a subsection of the entire set of interviews can be analyzed at this time. In order to provide broad coverage of the entire state, I selected five of the seven interviews (n=20) conducted in each of the four latitudinal sectors of the Colorado grid in order to get the best coverage I could from east to west across the state. In order to get the best possible coverage of the state from north to south, I used at least two interviews from each of the seven longitudinal sectors. The following map shows the location of selected interviews, and the community synopsis identifies these interviews by grid unit, county, and community (the latter in parentheses):

Table 3.2: Synopsis of Communities Selected for Study

H17 Jackson (Walden); H18 Grand (Kremmling); H19 Gilpin (Black Hawk);
H21 Boulder (Hygiene); H22 Sedgwick (Sedgwick)

I16 Rio Blanco (Meeker); I17 Lake (Leadville); I18 Chaffee (Buena Vista);
I21 Yuma (Idalia); I22 Lincoln (Limon)

J17 Hinsdale (Lake City); J18 Saguache (Saguache); J20 Pueblo (Beulah);
J21 El Paso (Peyton); J22 Prowers (Lamar)

K16 La Plata (Durango); K18 Rio Grande (Del Norte); K19 Archuleta (Pagosa Springs);
K20 Alamosa (Alamosa); K22 Baca (Springfield)

It is important to note that the speech used in these interviews played no part in their selection; rather, selection was made based on completion of the interview and with the goal of completing the Colorado grid.

Informant Characteristics

Nearly all of the informants were born in the grid unit in which the interview was conducted, with some notable exceptions. The Sedgwick informant was born in Nebraska, just across the border from where he made his home in Colorado at the time of the interview. The Beulah informant, as well his spouse, was born in southwestern Kansas, and he did not move to Beulah until he was six years old. The Alamosa informant was born in Boulder, as her family was relocating from the eastern Colorado town of Burlington during the Dust Bowl to the Waverly Settlement near Alamosa. However, each of these informants came to the community at a relatively young age and did not come from a different dialect region from the Colorado community they represented, e.g. the Deep South or New England.

Although most of these people were lifelong residents in their community, some had spent time in either the military overseas during World War II or the Korean War or had worked in the ammunition factories of Denver during World War II. Some informants who had gone to college had moved to be closer to the schools they attended, typically in Boulder or Denver, but none went to college out of state for any length of time. Generally, informants who moved out of the area did so for only a few years

before moving back to their hometown. The Beulah informant is one exception to this rule as he lived and worked in Denver for many years. He stressed in his interview, however, that he had always kept in contact with the people and town of Beulah and visited often; he moved back to Beulah almost immediately after retiring. Most of the informants were well-traveled, especially throughout the western United States, although some had traveled throughout the eastern states as well. A few had traveled internationally, particularly into Mexico and Canada, but some had also traveled to Europe and Asia and even Australia and New Zealand. Some wintered or had wintered in the nearby states of Arizona and New Mexico

Table 3 illustrates social characteristics of the selected informants, including age at the time of interview, level of completed education, and sex:

Table 3.3: Social Characteristics of Selected Informants

ID	County	Community	FW	Int. date	Sex	Age	Education
H17	Jackson	Walden	DN	07/18/90	F	82	hs grad
H18	Grand	Kremmling	JP	05/22/91	M	81	hs grad
H19	Gilpin	Black Hawk	DN	07/10/90	F	72	10th grade
H21	Boulder	Hygiene	DN	06/22/90	M	82	10th grade
H22	Sedgwick	Sedgwick	DN	07/11/90	M	91	11th grade
I16	Rio Blanco	Meeker	LA	09/04/01	F	74	college grad
I17	Lake	Leadville	LA	10/31/01	F	85	college grad
I18	Chaffee	Buena Vista	DN	06/27/90	F	71	hs grad
I21	Yuma	Idalia	DN	07/13/90	M	70	college
I22	Lincoln	Limon	LA	08/05/04	F	74	hs grad
J17	Hinsdale	Lake City	LA	09/06/01	M	88	9th grade
J17a	Hinsdale	Lake City	LA	09/06/01	F	82	bus. college
J18	Saguache	Saguache	LA	09/19/01	M	77	hs grad
J20	Pueblo	Beulah	LA	10/23/01	M	81	college grad
J21	El Paso	Peyton	LA	09/13/01	F	74	10th grade
J22	Prowers	Lamar	DN	06/25/90	F	75	11th grade
K16	La Plata	Durango	DN	06/08/90	F	86	college
K18	Rio Grande	Del Norte	DN	06/09/90	M	83	hs grad
K19	Archuleta	Pagosa Springs	LA	09/25/01	M	63	12th grade
K20	Alamosa	Alamosa	LA	11/08/01*	F	64	hs grad
K22	Baca	Springfield	LA	09/10/01	M	75	hs grad

This table includes grid units in the first column; in the fourth column are field workers (DN=David Newton, JP=Josephine Preston, LA=Lamont Antieau); in the sixth column informants are categorized with respect to sex (F=female, M=male); and in the eight column, the education of each informant is provided (hs grad=finished high school, college=had at least some college, twelfth grade=entered but did not finish twelfth grade, college grad=graduated from college, etc.). In-depth community and biographical sketches are provided in Appendix B.

As shown in Table 3, the 21 informants selected for this study were elderly: Informants' ages range from 63 to 91; the average age was 77; and the mode was 74 years old. Related to the issue of age, the time in which interviews were conducted is almost evenly split between those done in the early 1990s and those done from 2001-2004. Although the difference in time between Newton's interviews and my own is pertinent today, in future research the lapse of 11 to 14 years might seem insignificant.

More an accident of fortune than the result of conscious effort, there is an even distribution of primary informants according to sex in this sample with ten females and ten males. It should be noted that during many of these interviews, the informant's spouse was seated nearby and contributed to the interview in varying degrees, depending on the specific interview, and within the interview, often depending on the semantic domain that was being discussed. Auxiliary informants tended to only contribute when they could be helpful, e.g. helping clarify a question for an informant when that person was confused by a question or helping an informant remember a specific name or event in response to a question. Most auxiliary informants generally did not intrude on the conversation, but instead realized that the primary informant was the one being interviewed and not them. In one interview that I conducted (Lake City), the spouse nearly becomes the primary informant as she takes over for her husband, who has some difficulty hearing and staying awake during the interview. Responses given by auxiliary informants will be noted in the analysis, and their social characteristics will be noted when it is possible to retrieve that information.

Although informants of the lowest educational levels were sought, a variety of levels is represented, ranging from ninth grade to college graduate. This sample includes three college graduates, two informants who had some college but did not graduate, eight high school graduates, and seven informants who attended between nine and twelve grades of school without graduating.

The social class of the informants is not easy to ascertain, except through occupation and superficial observations about their houses and clothing, and few comments made in the interviews could help one pinpoint the social class of any one informant. I would speculate that most, if not all were middle class, and at least a few were of the working-class variety of the middle class. The Lake City couple owned a great deal of property and had made many investments over the years, and both were active in politics and business organizations. On the other hand, it seemed that the Alamosa, Pagosa Springs, and Springfield informants lived relatively modestly.

In general, the Colorado informants were socially active in the local community, which was the primary reason for their being referred to me by gatekeepers. Most informants, for instance, were active in one or more churches in the community and some also belonged to fraternal organizations or their sister organizations. Many of the informants belonged to the local historical society and were active in the local museum or library. Some were well-known in the community due to their profession, as in the case of one informant who was a schoolteacher, and others due to political positions they had held, as in the case of one informant who had served as a member of the local school board and as the waterworks commissioner.

Attempting to categorize informants using earlier Atlas distinctions of "old-fashioned" or "modern" proved to be difficult, even when there was evidence of old-fashioned attitudes in the interviews or old-fashioned living in the home. Perhaps the informant that I interviewed who could most easily be characterized as old-fashioned was the Springfield informant, a farmer who seemed old-fashioned in his work ethic and his philosophy, as well as in the way he lived, but other informants were not easy to categorize in such a manner. Furthermore, such distinctions based solely on speech can lead

to circularity in the analysis of linguistic features. Therefore, I did not use the old-fashioned/modern distinction in categorizing informants.

Although a few informants considered themselves primarily to be ranchers or farmers (e.g. Sedgwick, Springfield), the informants selected for this study claimed a broad range of occupations, ranging from a teacher (Leadville) to an accountant (Beulah) to a mechanic (Pagosa Springs) to a textile mill worker (Alamosa), and some had held many jobs throughout their lives; for instance, the Lake City informant considered himself to be a rancher, builder, and trout farmer, and he also owned and worked a small mine. Some claimed a primary profession but had semi-retired and were working in other professions. For instance, the Alamosa informant claimed textile mill worker as her primary occupation, but now in semi-retirement, she helped out at the senior citizens center, which is where I met her and where we conducted the first part of our Alamosa interview. Nearly all of the informants, however, had some experience in ranching or farming if only in their early years.

As a final observation on the social characteristics of the informants selected for this study, but one that does not appear Table 3.3, all informants were Caucasian and their ancestors were either the early English settlers of this country or European immigrants who came later, including Germans, Scots-Irish, French, Irish, Slavic, and Dutch. No one in the Colorado survey claimed African-American or Native American ancestry. Although the absence of minorities might be problematic in a larger regional survey, given the small populations of these groups in Colorado in general, and specifically in the communities and counties that interviews were conducted in, this should not be viewed as problematic. The same cannot be said for the lack of Hispanic ancestry among Colorado informants, given the relative size of the Hispanic population in Colorado. Hispanics are represented in some of the Colorado interviews that were not chosen for this study, but the interviews were conducted in grid units that were not selected or the interviews were considered supplementary interviews that will not be dealt with here.

Interview Styles

Unlike field work in Wyoming, which was conducted solely by Michael Madsen, interviews were conducted by several field workers in Colorado, and it is important to assess each interviewer's style in order to account for the influence that field workers exert on their subjects. This study examines only a subset of the Colorado interviews and includes only those conducted by Newton, Preston and myself, leaving Barna's interview, as well as several of Newton's and my own, for future research. Because Preston conducted only one interview for this project, there is not enough data to truly evaluate her style of interviewing; however, a cursory examination of Newton's style and my own reveals clear enough differences between the two styles that they might have some effect on the distribution and interpretation of data and therefore they will be noted here (Bailey and Tillery 1999; Bailey, Wikle, and Tillery 1997).

Both Newton's interviewing style and my own began with working from the LAWS worksheets. Generally speaking, Newton was more focused on eliciting target items than I was; for instance, there were several times that Newton requested informants pronounce words they had already indicated they did not use. On several occasions, Newton spelled items that he was having difficulty eliciting using more natural means, which was a strategy that I only employed a few times, notably for the names *Sarah* and *Nelly* that proved to be difficult to elicit by other means. Because Newton's interviews were sharply focused on target items, there was often tape remaining after the worksheets had been entirely covered, so that Newton would often finish interviews by asking very open-ended questions about family or community history in the area in order to elicit narratives from his informants and finish the fourth and final cassette side. These narratives covered such topics as mining history or the history of icehouses in the area and varied between being highly conversational to being somewhat formulaic, as if the informants had often told these stories before.

In contrast to Newton's style, my own interview style tended to be less focused on target items and more on conversation throughout the interview, precluding the need for long narratives to fill up the last side of the second type; since I put a great deal of emphasis on free conversation, several of my

interviews ran over the allotted three hours, although none lasted any longer than an additional fifteen or twenty minutes. Although some target items were missed using this style, many surfaced during conversational stretches in the interview and are relatively easy to retrieve using current computational tools. In general, informants seemed relaxed during the interviews I conducted. Although there was an apparent effort on the part of some to elevate their speech at various points in the interviews, most people tended to be rather casual and enjoyed conveying what they knew or remembered to an interested party.

Since only one interview in the Colorado corpus was conducted by Josephine Preston, there is perhaps too little from which to draw any hard and fast conclusions about here interviewing style, but in general, she was less target-oriented than Newton, allowing the interview to deviate from the worksheets at times. One difference that she and Newton had from my own style, however, and one that had some consequence in the lexical analysis, is that Newton and Preston often began eliciting a target item by trying to elicit the supernym of the category, whereas I would often use the name of the supernym in trying to get at more specific variants. The following excerpts of questioning informants on the supernym *worms* – the first conducted by Newton in Black Hawk and the second by me Meeker – illustrate this difference:

Table 3.4: Excerpt from Black Hawk Interview

Black Hawk, Gilpin County, Colorado (7/10/90)

#711
P: Did, now what do people use for bait, live bait, what are?
R: Colorado, I wonder, do U(F) I don't think they are allowed to use metal or anything here because that puts metals in the water which is not too good.
#712
P: How about and I'm thinking of another?
R: They use fish eggs.
#713
P: Fish eggs. Okay.
R: Salmon eggs, I want to say salmon eggs.
#714
P: How about a little something that kind of wiggles when it's on the water?
R: Oh yeah. We have lots of worms they use.

Table 3.5: Excerpt from Meeker Interview

Meeker, Rio Blanco County, Colorado (September 4, 2001)
#686
P: What about worms? Do you have different types of worms?
R: Angleworms.
#687
P: Angleworms. What are they like? Are they bigger worms?
R: G(A) Night crawlers. U(H) We have the U(F) a lot of the those little, they call them inch worms. They're about that long. They curl up. I don't know their technical name, but we call them inch worms.

With respect to these general target items, I assumed that informants would use broad target items like *worms* in their response, if not in isolation, then in compound nouns.

Although no action was taken to weigh the responses of informants based on the field worker who interviewed them, some caution was used in interpreting the responses of informants. For instance, responses that were merely repetitions of words the field worker used in the questioning were flagged as doubtful in both the lexical and phonetic analysis; those words that were elicited through the field worker spelling the word were also flagged as doubtful for lexical analysis. Furthermore, those words that informants used during the interview, but for which they qualified with statements to the effect that the words were older terms, or were used by people in a different region were also flagged during analysis. Finally, each variant tested using statistical means was tested statistically for the effect of field worker. Although significant correlation between a field worker and a specific variant did not eliminate that variant, field worker effect was noted in the discussion of that variant.

Data Analysis

Once the selected interviews were transcribed in their entirety, analysis of the data began with the goal of arriving at a clearer picture of the vocabulary, pronunciation and syntax of Colorado speech. Because a description of features used in Western American English benefits from comparison to similar features in the speech of the eastern states, the analysis began by determining those LAWS items that had previously been described in terms of their social distribution in the eastern states, particularly those items that had been discussed in the works of Kurath (1949), Atwood (1953), and Kurath and McDavid (1961).

Additionally, since part of the goal of this work was to examine linguistic variants with a strong association with the West that were not covered in the eastern Atlas work, I consulted earlier works on western speech, particularly those works that had been the product of Atlas methods.

Because lexical choices are important markers of dialectal variation, and because the first round of transcriptions was done orthographically and not phonetically, the analysis of the Colorado data began with an examination of the lexicon. As a guide to words that appear in the Colorado data that have their origins in the eastern United States, I relied on Chapter 3 of Kurath (1949), "Regional and Local Words in Topical Arrangements." As a guide to those words that appear in the Colorado data that did not originate in the eastern states – and are often Spanish or Native American words relating to the unique landforms, plant and animal life, and economic activities of the western United States – I referred to such works as Kimmerle (1950, 1952), Hankey (1960, 1961), and Carver (1987). Using these sources as guides would not only serve to narrow the range of data for this study, but it would also create an opportunity to take a historical approach to some of the data.

After using these sources to create a list of words that I wanted to isolate, I then uploaded the selected transcriptions of the Colorado Atlas into WordSmith Tools to create a concordance comprising words found in the interviews. Although the creation of a concordance is a useful method for finding out which words were used in the interviews, it is not immediately apparent by looking at a concordance who used the words or in what context, for instance, whether it was the field worker or the informant who used the word first. However, WordSmith allows one to look at larger chunks of discourse in investigating these types of issues. In order to make distinctions based on how a word was used in an interview, I had to devise a system for identifying the context each of the target items occurs in. Despite the myriad of possible distinctions for categorizing context, I settled on four labels – "conversational" for when an item occurs during a narrative rather than in response to a prompt by the field worker; "suggested" for when the field worker suggests the item, whether by saying it or spelling it; "heard" for when a form was reported to be heard but the informant did not use it, and "auxiliary" for when an auxiliary informant

answers a question for the primary informant. Those items that appear in this analysis untagged should be viewed as responses to prompts in typical Atlas fashion.

I began analyzing the lexical data of the Colorado corpus by creating an Excel spreadsheet for each target item, or headword. For instance, LAWS target item C1 is concerned with variants of the headword *bucket*, a much-discussed dialect marker in the eastern United States, and a question that typically evokes one of two variant responses – *bucket* or *pail*. As a way of organizing the data, I entered community information in the first three columns of the spreadsheet moving from left to right. Column A was reserved for the grid letters (GL) of each informant's community and Column B for the grid number (GN), so that sorting could later be done by letter, which roughly correspond to the latitudinal sections from north to south in ascending order, and by number, which roughly correspond to longitudinal sectors from east to west in descending order. Column C was devoted to the name of the informant's community. Subsequent columns are used for variants of the headword that are realized in the interview (Column D); coded comments pertaining to the nature of the elicitation of the response, that is, whether the response was conversational (CON), used by an auxiliary informant (AUX), suggested by the field worker (SUG), or a form that the informant reported to have heard but did not use (HRD) (Column E); a doubt flag that is applied to variants that were suggested by field workers or were the subject of such remarks as "the old-timers used to use that word" or "some people say that word" (Column F); and collocates of the word if it, for instance, was used as part of a compound (Column G) with the position of the target item in the collocate noted by the use of an underline mark.

To illustrate, a portion of one of the tables that was constructed for this stage of the analysis – that constructed for the target item *bucket* – is provided below:

Table 3.6: Portion of the Annotated Spreadsheet for the Headword *bucket*

GL	GN	Community	Item	Commnt	Doubtflg	Comtext
H	17	Walden	buckets			tin_
H	17	Walden	bucket	CON		
H	18	Kremmling	bucket			
H	18	Kremmling	pail			milk_
H	19	Black Hawk	bucket	CON		
H	19	Black Hawk	buckets			galvanized_
H	21	Hygiene	bucket	AUX		
H	21	Hygiene	bucket			
H	21	Hygiene	buckets			granite_
H	22	Sedgwick	pails			
H	22	Sedgwick	bucket			_of paint
I	16	Meeker	bucket	CON		
I	16	Meeker	pail	SUG	Y	same as bucket
I	16	Meeker	bucket	CON		_fed lamb

It is important to note that informants may use multiple variants or use variants in different discourse environments; each of these variants is given its own line in the spreadsheet, as illustrated in Table 3.6.

Once these tables were completed for the individual variants for the headwords that were ultimately selected for lexical analysis, I created two sets of tables. The first type of table was one in which I displayed the variants that were used for each headword and the number of informants that used that variant. To facilitate the reading of these tables, I listed each variant of the headword from top to bottom in descending order of frequency. An example of one of these tables – for the target item *frying pan* – is shown in Table 3.7 below:

Table 3.7: Lexical Variants of the Headword *frying pan* in Descending Frequency

C11 Frying pan

frying pan(s)	15
skillet	11
iron skillet	2
cast-iron skillets	1
Dutch oven	1
fry pan	1
old iron skillet	1
sauce pans	1
steel skillets	1

H17	frying pan	tin
H21	skillet	old term
I16	skillet	no difference between ___ and frying pan
I17	skillet	___ and frying pan the same thing
I22	skillet	same thing
J20	skillet	frying pan smaller, __ is cast-iron
K20	frying pan	skillet and ___ the same
K22	frying pan	older
K22	skillet	cast iron, heavier; frying pan tin or thin metal

In order to show as much possible variation for the community that the interviews would allow, the tables displayed compound words as individual variants; however, variants that differed only by inflectional endings, such as plural *–s* or past tense *–ed*, were collapsed into a single variant that included the optional inflectional suffix in parentheses, as in the case of *frying pan(s)* above. Variants used by auxiliary informants during the course of the interview were counted for these informants, but each variant was only counted once for each time it occurred in an interview, whether it was used once or a dozen times, and whether it was used by a primary or an auxiliary informant. Beneath each table, I included comments the informants used about specific variants; these items are identified by the grid row and column of the informant who made the comment, the variant they were commenting on, and the comment with underlined spaces denoting the slot in which the variant was used. These comments pertained to both items that were counted for these tables and those that were judged as doubtful, a judgment often based on the comment that is displayed. These tables are displayed in Appendix D.

The second set of tables that was created displayed all the variants used for each of the target items and indicated whether each of the informants used each of the variants in their interview or not. In these tables, one row was dedicated to each informant, and the first column was devoted to the specific variant that was being tested for that table. If an informant used the variant, the numeral 1 appears in the cell intersecting the informant and the variant. If the question was not asked of the informant or if the informant only used the word after it was suggested by the field worker, a 0 was entered into the cell to show that there was no response or that the response was doubtful. These tables were used in the statistical analysis component of this study and will be discussed in greater detail below.

Pronunciation is another linguistic level in which variation is prevalent and for which social and regional correlates can be found; many of the LAWS targets are included in the survey because phonetic variation in these targets has been observed either among the dialects of eastern English or as differences between eastern and western American English. Analysis of Colorado pronunciation began with the compilation of an idiolect synopsis for each of the 20 primary Colorado informants and the auxiliary informant for which there was adequate data for phonetic analysis. I adopted Kurath and McDavid's (1961) work for the structure of these synopses and included many of the same words that they did, most of which are words for everyday items in the home of a farmer/rancher. These words provide evidence for vowels in American English. Forty-six of the words were for common everyday items in rural life that were also collected and analyzed as part of the Linguistic Atlas of the eastern states; I added to this inventory, *corral,* a word historically associated with the western United States and Mexico.

Similar to the synopses constructed by Kurath and McDavid (1961), the synopses devised here are intended to show the full range of phonemic realizations in American English and can be used to show pronunciation patterns within the speech of a single speaker as well as among the various speakers in the study. Working with Microsoft Excel spreadsheets, I began these synopses by presenting the phonemes of American English, /i/ through /u/, as headers of their own columns in the top row of the page. In the first column, I keyed in target words that commonly include the full range of front vowels /i/ through /æ/, the low-back vowel /ɑ/, and the diphthong /ai/ found in *wire, twice,* and *five* in that order. Working up

from the right-hand column, the synopses begin with the diphthong found in words like *joint*, then moves up through the diphthongs in *drouth, down*, and *out,* before moving up to words that commonly include /ɔ/ and words that include /ʌ/ and concluding in the upper-right corner with the tense high-back vowel /u/. For illustration purposes, as well as to save space, most of the spreadsheet rows are to accommodate the phonetic representation of two items: A word in the first column and one in the last. While in most cases, especially near the top of the spreadsheet, this sharing of rows creates no problems because of the distance between the vowels on the spreadsheet, there are some cases that did prove to be problematic, a problem I will return to below.

Using data written in impressionistic phonetic transcription, these synopses display the pronunciation of phonemes in various environments, e.g. intervocalic, before voiced fricatives, etc. The generalizations that can be made from these synopses will then be compared to features of variation in the eastern United States, particularly those highlighted in Chapter 5 of Kurath and McDavid (1961), "Regional and Social Differences in the Incidence of Vowels and Consonants." Additionally, I discuss the pronunciation of target words that occur in the Colorado corpus but were not discussed in the earlier eastern data, e.g. *corral.* Finally, I compare vowels used in the speech of the Colorado informants with Labov's findings of dialectal variation in the western United States and throughout the United States.

In order to analyze the use of phonetic variants in statistical terms, I set up tables much like the ones that were used for the analysis of lexical items. Although there was not the range of pronunciation variants for each item that there was for possible lexical variants, there was some room for variation. For instance, several pronunciations of Colorado are attested in the corpus, including [kalərædo], [kalərædə], [kalərado], and [kaləradə], and some informants varied in their choice of the pronunciation they used during the course of the interview. While each pronunciation that an informant used for a particular item was identified in the individual variant table, in those cases in which a variant was used that was the same pronunciation that the field worker had used in the preceding prompt, the variant was flagged as if it were a suggested item.

In Chapter 6, I examine syntactic features of the Colorado corpus. At this time, the development of tools to examine the corpus deductively have not been adequately explored or developed; therefore, I will focus on those syntactic features that have been previously discussed in the literature of eastern dialects, such as tense forms, double modals and positive *anymore*. In this manner, the study supplies data on a number of syntactic features found in the Colorado corpus, providing a foundation for studying the relationship of Colorado syntax to other varieties of English, while also providing data for future research into the syntax of Colorado English and the syntax of spoken American English in general.

In addition to examining the linguistic distribution of lexical, phonetic, and syntactic features within their respective domains, I also examined the regional and social distribution of variants by coding each informant by several social variables, including grid row, region, education level, origin of father, origin of mother, year of interview, age of informant and sex. Although numerous factors have been shown to have an effect on language use in the sociolinguistic literature, the variables chosen for this study are commonly found in dialectological and sociolinguistic studies, and they are relatively easy to determine from the interviews. Other social variables that are discussed in some sociolinguistic studies, e.g. social class and profession, on the other hand, are more difficult to ascertain from the interview without resorting to theoretical models that have not been adopted for the current study.

With respect to grid row, I used the grid rows that were used in the creation of the LAWS grid for Colorado (Pederson 1990). Although grid rows were not established solely on the basis of latitude of location, latitude was one component of identifying grid units so that they locate informants roughly on a north-south scale. A comparable number of informants in each grid row were interviewed and selected for this study to facilitate such an analysis, as illustrated in this table:

Table 3.8: Selected Communities by Grid Rows and Columns

Grid Rows	Grid Columns						
	16	**17**	**18**	**19**	**20**	**21**	**22**
H		Walden	Kremmling	Black Hawk		Hygiene	Sedgwick
I	Meeker	Leadville	Buena Vista			Idalia	Limon
J		Lake City (aux)	Saguache		Beulah	Peyton	Lamar
K	Durango		Del Norte	Pagosa Springs	Alamosa		Springfield

Therefore, statistical significance for grid row of informants will suggest a distribution of linguistic variants affected by latitude, or more accurately, north-south settlement patterns, which would be in line with much of the findings on linguistic differences in the eastern United States.

Since there were as few as two informants representing one grid column, it was not feasible to test for statistical significance of variants from east to west using the grid system. Therefore, I took an approach using intrastate regions that are widely recognized in Colorado, although by no means the only view taken on divisions within the state. The first region identified for this study was the plains region, which comprises all the area from the eastern border of the state to the Front Range of the Rocky Mountains. The second region recognizes the Rocky Mountain range, including the Front Range, as part of the mountain region. The third region recognizes the southwestern corner of the state, comprising all the area between the Sangre de Cristo Mountains that form the eastern and northern edge of the San Luis Valley and Colorado's southwest corner, which, with Utah, New Mexico, and Arizona, forms the Four Corners region of the United States.

The table below shows how each of the selected interviews was categorized according to the region of the community that the informants lived in:

Table 3.9: Selected Communities by Region

Region		
Plains (n=5)	**Mountains (n=9)**	**Southwest (n=7)**
Sedgwick	Kremmling	Lake City
Idalia	Walden	Lake City (aux)
Limon	Black Hawk	Saguache
Lamar	Hygiene	Durango
Springfield	Meeker	Del Norte
	Leadville	Pagosa Springs
	Buena Vista	Alamosa
	Beulah	
	Peyton	

Among the communities categorized by region in Table 3.9, the only one that proved difficult was Peyton, due to its being east of the Front Range. Ultimately, it was categorized as part of the Mountain Region because it was part of a grid unit that was clearly in the mountains, consisting of such Front Range communities as Colorado Springs and mountain towns like Cripple Creek. Furthermore, the informant had been born and raised in Peyton, but she had lived and worked much of her adult life in the mountains and was actually interviewed in Florissant, which is west of Colorado Springs.

I also took into account the birthplaces of each informant's father and mother, assigning them to 1) a group consisting of parents born in Colorado; 2) a group of parents born in other states of the Great Plains, including Texas and Missouri; and 3) a group of parents born in the eastern United States and Europe, and one parent whose origin was unknown. Unfortunately, the small number of informants selected for this study meant that I could not create categories based on more specific locations from which informants' parents originated.

The breakdown of interviews by the origin of the informants' fathers is shown in the following table:

Table 3.10: Communities by Origin of Father of Informant

ORIGIN OF FATHER		
Colorado (n=6)	**Great Plains (n=10)**	**Elsewhere (or unknown) (n=5)**
Walden	Kremmling	Sedgwick
Black Hawk	Hygiene	Leadville
Meeker	Idalia	Limon
Buena Vista	Lake City (aux)	Durango
Lake City	Saguache	Del Norte
Alamosa	Beulah	
	Peyton	
	Lamar	
	Pagosa Springs	
	Springfield	

As the table indicates, most of the informants' fathers were born in one of the Great Plains states other than Colorado, while the number of fathers either born in Colorado or in a category comprising fathers born outside the Great Plains states or whose origin was unknown is nearly equal.

Although sometimes coinciding with origin of father, the origin of informants' mother is different often enough to warrant its own table below:

Table 3.11: Informant by Origin of Mother

ORIGIN OF MOTHER		
Colorado (n=11)	**Great Plains (n=6)**	**Elsewhere (or unknown) (n=4)**
Walden	Leadville	Sedgwick
Kremmling	Lake City (aux)	Limon
Black Hawk	Beulah	Durango
Meeker	Peyton	Pagosa Springs
Buena Vista	Lamar	
Idalia	Springfield	
Lake City		
Saguache		
Del Norte		
Alamosa		
Hygiene		

Although it might prove fruitful to examine parental origin in more specific detail, the numbers of informants are not great enough to enable such a study at this time.

I also analyzed informants by their age, assigning those informants who were 82 years or older to one group (n=7), those informants 74 to 81 years old (n=9) to a second group, and those informants from 63 to 73 years of age (n=5) to a third group, as shown in Table 3.12:

Table 3.12: Informants by Age

AGE		
Oldest (n=8)	**Middle (n=8)**	**Youngest (n=5)**
Walden	Kremmling	Black Hawk
Hygiene	Meeker	Buena Vista
Sedgwick	Limon	Idalia
Lake City	Saguache	Pagosa Springs
Lake City (aux)	Beulah	Alamosa
Durango	Peyton	
Del Norte	Lamar	
Leadville	Springfield	

It is important to note that one of the factors that had to be taken into account to create age categories was that, for inferential statistics to be effective, categories had to comprise a roughly equal number of informants; cases in which there were fewer than three informants in a category had to be avoided. This condition had a greater influence on the choice of divisions between age categories than any other.

Since interviews were conducted as many as fourteen years apart, I also chose to categorize informants by year of birth, assigning them to one of three groups: The earliest group, which comprises informants born between 1899 and 1913, a middle group comprising informants born from 1914 to 1925, and a latest group comprising informants born between 1926 and 1938. The distribution of the informants is shown in Table 3.13:

Table 3.13: Informants by Year of Birth

YEAR OF BIRTH		
Earliest (n=7)	**Middle (n=8)**	**Latest (n=6)**
Walden	Black Hawk	Meeker
Kremmling	Buena Vista	Limon
Hygiene	Idalia	Peyton
Sedgwick	Lake City (aux)	Pagosa Springs
Lake City	Saguache	Alamosa
Durango	Beulah	Springfield
Del Norte	Lamar	
	Leadville	

Again, the decision as to where lines were to be drawn between categories was made in part on how to create a result that could be dealt with statistically.

Informants were also classified according to education level with informants who did not finish high school being assigned to one group (n=7), those who graduated from high school to a second group (n=8); and those who continued their education after high school to a third group (n=6), resulting in the groups presented in the table below:

Table 3.14: Informants by Education Level

EDUCATION LEVEL		
Lowest (n=7)	**Middle (n=8)**	**Highest (n=6)**
Black Hawk	Walden	Meeker
Hygiene	Kremmling	Leadville
Sedgwick	Buena Vista	Idalia
Lake City	Limon	Lake City (aux)
Peyton	Saguache	Beulah
Lamar	Del Norte	Durango
Pagosa Springs	Alamosa	
	Springfield	

Although greater distinctions in education levels might be useful, there was simply not the number of informants necessary to perform such operations.

Informants were also categorized by biological sex, as displayed in the following table:

Table 3.15: Informants by Sex

SEX OF INFORMANT	
Male (n=10)	**Female (n=11)**
Kremmling	Walden
Hygiene	Black Hawk
Sedgwick	Meeker
Idalia	Leadville
Lake City	Buena Vista
Saguache	Limon
Beulah	Lake City (aux)
Del Norte	Peyton
Pagosa Springs	Lamar
Springfield	Durango
	Alamosa

As mentioned earlier, that there was nearly an equal number of female and male informants chosen for inclusion in this study was more by accident than by design.

Finally, informants were classified according to the field worker who interviewed them. The following table shows the Colorado interviews that were chosen for this study by community name and are categorized according to the field worker who conducted the interview:

Table 3.16: Interviews by Community and Field Worker

FIELD WORKER		
David Newton (n=9)	**Josephine Preston (n=1)**	**Lamont Antieau (n=11)**
Walden	Kremmling	Meeker
Black Hawk		Leadville
Hygiene		Limon
Sedgwick		Lake City
Buena Vista		Lake City (aux)
Idalia		Saguache
Lamar		Beulah
Durango		Peyton
Del Norte		Pagosa Springs
		Alamosa
		Springfield

In the spirit of Kretzschmar and Schneider (1996), this study seeks to use the most appropriate statistical text to discover possible correlates between social variables and the use of specific linguistic

variables within the realms of vocabulary, pronunciation and grammar. Three characteristics of the data set, in particular, had the greatest bearing on the choice of statistical tests: 1) The dataset could not be assumed to have a normal distribution; 2) Atlas interviews allow for multiple responses to a single prompt; and 3) the relatively small sample created the potential for small frequencies of variables. Therefore, analysis of the data in the Colorado corpus was conducted using a non-parametric test, the Kruskal-Wallis test, which does not assume a normal distribution and is not subject to the Cochran Restriction on empty cells and low frequencies that are common to small data sets.

In order to use statistics to show the likelihood of a relationship between regional and social variables of the informants in the study and the use of linguistic features, significance was set at $p < .05$, the most common accepted level of significance in the social sciences. The Kruskal-Wallis test was used to establish relationships between linguistic and extralinguistic variables and then the SPSS Crosstabs feature was employed to determine whether the correlation was positive or negative and to discover a more precise cause for the significance. For displaying the data in this study, the SPSS Crosstabs output provided a model for creating tables like the following:

Table 3.17: Sample Table Showing Correlation of *shucks* with Region of Informant

p < .008		REGION			
		Plains	Mountains	Southwest	Total
shucks	0	1	9	5	15
	1	4	0	2	6
Total		5	9	7	21

In the upper left-hand column, I have inserted a cell showing the level of significance (in this case, $p < .008$). In the second cell beneath the cell showing statistical significance is the specific variant that was tested (in this case, the lexical variant *shucks*) and a 0 heading a row that displays the number of informants who did not use the variant. Beneath that cell is another with the number one heading a row displaying the number of informants who used the variant. The remaining columns are divided into the social variables being tested and the final row and final column of each table are reserved for total

tabulations. Tables like these will be presented for each variant for which there is a probability that a linguistic variant and a social variable of the informant is correlated.

Of those extralinguistic factors that were chosen for analysis in this study, the one that had the most variants correlate significantly with it was the variable of field worker, support for the notion that field workers and methods have a great influence on the results of dialectology (see e.g. Bailey and Tillery 1999; Bailey, Wikle, and Tillery 1997). According to the numbers, field worker had the greatest effect on the occurrence of lexical variants in the study, showing significant correlation with fifteen variants. There are a few reasons for this effect. One is partially a function of statistics, in that Preston conducted only one interview; therefore, if her informant was to use a variant that occurred infrequently throughout the entire corpus, the statistics observed the categorical nature of her contribution and raised the mean score to a statistically significant level. The following table illustrates this point:

Table 3.18: Table Showing Field Worker Effect for the Lexical Variant *chips*

p < .038	FIELD WORKER			
	DN	JP	LA	Total
chips 0	9	0	8	17
1	0	1	3	4
Total	9	1	11	21

Chips is not elicited by Newton as a variant of *kindling* and I elicited the variant only three times, while Preston elicits the word in her only interview, resulting in a significant correlation between field worker and the variant *chips* at $p < .038$. If the Kimmerle interview that Preston conducted is omitted from the data set when testing for field worker, probability is $p < .098$, well above the level of significance of $p < .05$ set for this study. If Preston's contribution is eliminated from the tables during statistical analysis, several variants that were significant for field worker are no longer so, including the variants *chips, whetstone, ground squirrel, quirt, mustang,* and *juniper*.

Despite the elimination of the Kremmling interview when testing for significance for field worker, the field worker variable has more significant correlates associated with it than any of the other

extralinguistic variables, due to differences in the interviewing styles of the two field workers. Although field worker effect will be mentioned for each variant for which field worker showed a significant correlation, tables showing that effect for a specific variant will be displayed only when significance was found for other variables pertaining to the headword in question.

Distribution of Materials

An important part of any large-scale work in dialectology, the distribution of data from the survey is one of the primary goals of the LAWS project. As a first step toward that goal, distribution will take advantage of the existing infrastructure at the Linguistic Atlas office and tools that have already been developed for distributing earlier Atlas data, particularly for the LAMSAS. But distribution of data from the LAWS project will go beyond the distribution of earlier materials because of differences in the collection of LAWS data and earlier Atlas data and because of development in web technology and corpus linguistics (Kretzschmar 2001).

As in the case of most other Atlas projects, data collected as part of the LAWS project will be archived at the University of Georgia, and like the LAMSAS and LAGS surveys, scholars will have access to LAWS data over the Internet via the Linguistic Atlas website. The LAWS website will include many of the things the LAMSAS site has been able to offer those interested in language variation in the Atlantic states – lists of linguistic variants associated with target questions, the ability to organize those data along regional and social lines and the ability to map specific targets according to the location of informants who used them. However, the way in which these data are accessed will be influenced by recent technological developments.

As mentioned earlier in this chapter, a major advancement in the distribution of Atlas materials has been made possible because all the interviews were tape-recorded, enabling for the creation and distribution of the interviews in sound form, as audio files in a variety of formats, and in text form, as complete orthographic transcriptions of the interviews, which will be available as downloads from the

Atlas website once they are completed. The first step from tape-recorded interview to distributable material is the digitization of tape-recorded interviews, as this will preserve the audio tape in a digital form that can be archived and easily transmitted over the Internet. As the digitization of analog data is a relatively easy process with current technology, this first step will not pose much of a problem; however, because each interview is approximately three hours long, interviews will need to be split up into several audio files, as the digitization of entire interviews would create large and rather cumbersome sound files that would be problematic for storing and distribution. Fortunately, Pederson's original conception of the interview as comprising four forty-five minute programs will serve well as a model for creating audio files of an appropriate size while still maintaining the integrity of the LAWS interview.

The second part of the process of creating distributable materials from tape-recorded interviews is in the preparation of orthographic transcriptions using the transcription format discussed above. Like audio files, full-text transcriptions will also be large, with some interviews comprising over 200 pages, and will be offered in a variety of word-processing formats. Unlike digitization, however, transcription is a lengthy process and will need to go through several transcription and editing passes. Once the editing is completed, transcriptions will be encoded in XML and then XSL statements will be written that can create output of linguistic forms from the interviews in list and map form. Besides focusing on single features from the interviews and mapping them to examine their distribution across the state, users will also be able to manipulate data in order to allow them to focus on subsets based on extralinguistic characteristics of the interviews, including the sex, age, or education of the informant, the year in which the interview took place, or the field worker who conducted the interview. This information will be kept in the header of the XML document, but XSL will be able to retrieve it easily enough and will be useful in the manipulation of data (Kretzschmar 2001, Barry and Antieau 2001).

Although there will ultimately be a more diverse group of materials on the LAWS site than the LAMSAS site, there will be fewer computational tools integrated into the LAWS site than are offered as part of the LAMSAS site; rather, users will be referred to software programs that will be helpful in

analyzing the data and that can be downloaded via the Internet or will be available through software dealers. Additionally, I plan to illustrate some of the ways in which the data can be used on the website by displaying some of the maps of my findings that integrate sound files, phonetic transcription and geographical location of speakers who used the items.

The distribution of LAWS data over the Internet is intended to go beyond merely supplying scholars with data or to simply display the results of our work, but to facilitate the understanding of Western American English, as well as American English and language variation in general. The Colorado data will be the first piece of the LAWS puzzle to be put into place and will serve as a model for later work.

CHAPTER 4

LEXICAL VARIATION IN THE COLORADO CORPUS

In this chapter, several methods are used to present and explore the distribution of lexical data in the Colorado corpus, including 1) listing and tabulating variants of specific LAWS targets that are found in the Colorado corpus; 2) comparing the distribution of lexical variants in the Colorado corpus with their distribution in other dialects of American English; and 3) analyzing the social and regional distribution of lexical variants within the corpus through the use of inferential statistics. The goal of doing so is to provide a clearer depiction of Colorado English, even if ultimately the language variety spoken in Colorado is one of great complexity that does not easily lend itself to broad generalizations.

Eastern Lexical Variants

The study of lexical variation in Colorado English begins with an examination of the set of LAWS lexical targets that had also been discussed in Kurath's work on the regional and social distribution of lexical variants in the eastern states (Kurath 1949: 50-80) with the exception of calls to animals. This set consists of 50 target items, or headwords, for analysis. In the discussion that follows, specific analysis of each items begins with the headword as it appears in the LAWS questionnaire, and, next to this word is an identification code comprising the appropriate LAWS worksheet and item number in parentheses. The variants that LANE, LAGS, and LAWS hold in common are listed in Appendix C.

midwife (A10)

In his work on the eastern states, Kurath (1949) discussed regional variation in the lexical distribution of several variants associated with women who helped other women deliver their babies at home, including *midwife, granny,* and *granny woman*. Of these, Kurath recorded *midwife* as the national term and *granny* and *granny woman* as terms current in the speech of the South and the Midland.

Although most of the Colorado informants were familiar with the term *midwife*, few remembered a person designated as such, since most informants and their families had had access to hospitals in which babies would typically be delivered. In those situations in which babies were delivered at home, informants said that a local doctor would generally be called in, and he might be assisted by someone known as a *nurse, practical nurse,* etc. In those cases in which someone from the neighborhood came to assist, the term *midwife* was generally not applied, but rather the person was simply a neighbor or neighbor lady who had either assisted in other births in the neighborhood or who had given birth to enough children of her own that her experience in childbirth was highly valued.

In addition to not having much familiarity with a person to whom the term *midwife* would be applied, Colorado informants showed no evidence of competing lexical variants in this regard, as the two most common response types being *midwife* and NR. There were, however, a variety of oncers in the data set, including *neighbors* and *neighbor lady*. One informant used the name *Grandma Myers* for a person known around the community as someone who helped deliver babies, but it is uncertain whether she earned her name through her work delivering babies or simply due to her age. Due to the absence of competing variants for this term, no statistical analysis was performed on any of the items associated with this headword.

best man (A27)

Kurath reported *best man* to be the national term for a male who stands with the groom at a wedding; however, he also reported *groomsman* being the predominant variant on the Atlantic coast in Georgia and in the Charleston area, as well as west of the Chesapeake Bay from Baltimore to Norfolk.

In the Colorado corpus, *best man* is the highest ranking response for a male who stands next to the groom during a wedding with several variants only occurring once in the corpus, including *groomsmen, witnesses,* and *my brother*, the latter of which highlights that family members are often called upon to serve in the capacity as best man, or, on the other side of the aisle, as bridesmaids. Because *best man* had no competing variants, no statistical analysis was performed on this item.

living room (B1)

In the eastern states, Kurath reported several variants for a main room in the house in which families gathered in the evenings or in which they entertained friends, but *living room* and *sitting room* were the general terms with *sitting room* (often *setting room*) serving as more of a rural expression. The word *parlor* was a popular variant that Kurath reported to be in general distribution from Maine to South Carolina; however, it was often used to designate a room set aside for very formal occasions like weddings and funerals. In LAGS, *living room* (669), *parlor* (298), and *front room* (141) were the primary variants for this room in descending order of frequency. Kurath did not report *front room* as a variant.

In the Colorado corpus, the two most common responses to a prompt regarding a main room of the house used for entertaining family or guests were *living room* (14) and *front room* (8), while *family room* was used by 3 informants. *Parlor* was also mentioned by three informants but only once was it used without commentary, as one informant reported that it referred to something different than a living room and another said it was an older term. No significant correlation was discovered between the selection of either *living room* or *front room* and the extralinguistic variables that were tested.

mantel (B2)

Kurath reported the terms *mantel* or *mantelpiece* for a shelf over a fireplace where one might set knickknacks to be in general distribution in the eastern states and that in eastern Virginia and North Carolina these terms were in competition with *shelf*. LAGS recorded *mantel* as the highest variant among its informants (570), followed by *mantelpiece* (240), *fireboard* (69), and *shelf* (59). No instances of *mantel top* were recorded in LAGS.

Although the Colorado informants had some familiarity with fireplaces, few had one in their houses growing up and even fewer had ever relied on them to heat their homes; rather, nearly all had grown up with woodstoves in the house, and some still used them to heat their homes. This lack of familiarity with fireplaces created some problems in eliciting names for fireplace parts, and familiarity with woodstoves among informants created some interesting overlap in words and in their meaning

related to fireplaces and woodstoves. Lack of familiarity with fireplaces notwithstanding, most of the informants were familiar with a shelf over a fireplace and the majority knew this item as a *mantel* (15); other variants included *mantel top, mantelpiece,* and *shelf*. Because no variants competed with *mantel*, no statistical testing was conducted on this headword.

andirons (B5)

Used in fireplaces as a cradle for burning wood, *andirons* was a headword for which there were many variants in the early Atlas records, including *fire dogs, dogs,* or *dog irons* in the South, South Midland, and western Pennsylvania, and *firedogs* in a more scattered distribution throughout Pennsylvania and New England. The term *andirons* was the most common term in the North, on the coast in the Midland area, and in Southern cities. Kurath reports that *hand irons* was often used as a folk variant in those places where *andirons* was the predominant variant.

Presumably due to their lack of familiarity with fireplaces, few of the Colorado informants used the terms for the item that Kurath had found. The term *andirons* was only used by three informants, and none of the folk expressions Kurath had observed in the eastern states were used; while *hand irons* is not found in the Colorado corpus, *endirons* is apparently a similar example of folk etymology that one informant (J18) used in the Colorado interviews. Rather than *andirons,* however, *grates* was a more common expression for an item found in stoves that informants were familiar with, so that many of them assumed that a similar piece in the fireplace had the same name.

kindling (B7)

Kurath reported a number of region terms for *kindling;* for instance, he found *lightwood* to be a common word for kindling in the South and *pine, fat-pine, pitch pine* and *rich pine* in the Midland. These terms were not elicited in the Colorado interviews; rather, the variant forms *chips* (4) and *shavings* were used.

Although the variant *kindling* was often used in the prompt in the interviews in order to obtain semantic clarification, there are enough natural uses of the word in the corpus that it is one of the response

types that significantly correlates with a social variable: that of the region from which the informant's mother came, as illustrated in the following table:

Table 4.1: Correlation of *kindling* with Origin of Mother

p < .025		ORIGIN OF MOTHER		
		Colorado	Great Plains	Elsewhere	Total
kindling	0	4	6	1	11
	1	7	0	3	10
Total		11	6	4	21

If an informant's mother were from the Great Plains states, that informant did not use the word *kindling* in the response, but the term was used by nearly all the informants whose mothers were born in the eastern United States or in Europe, or in those cases in which the of mother was unknown. Usage was mixed among those informants whose mothers were born in Colorado.

The use of *kindling* was also significant for field worker, as shown in the table below:

Table 4.2: Correlation of *kindling* with Field Worker

p < .002		FIELD WORKER		
		Newton	Antieau	Total
kindling	0	1	9	10
	1	8	2	10
Total		9	11	20

Only Newton elicited the term frequently, as I used it in my prompt as a way to obtain semantic clarification, to reveal differences in what was used as kindling in the area, and to elicit any variants that might have been used for the word, so few informant uses of the word counted as valid responses to the prompt.

closet (B11)

Kurath reported the use of the term *clothes press* for *clothes closet* in rural areas in New England

and the North Midland. In some areas, the term was apparently used to avoid confusion with *closet*, which was the term used for the storage place for food more generally called a *pantry*.

In Colorado, responses to a question pertaining to a place in the house where clothing was kept were nearly split evenly between *closet(s)* and *clothes closet(s)* with 11 informants using the former, 10 the latter, and one informant additionally mentioning a *portable closet.* Among the two competing forms, only the bare form *closet* showed any correlation with the social variables tested in this study, as Table 4.3 illustrates:

Table 4.3: Correlation of *closet* with Age of Informant

p < .004	AGE			
	Oldest	Middle	Youngest	Total
closet 0	8	2	1	10
1	0	6	4	11
Total	8	8	5	21

No informants of the oldest age group used *closet*, while all informants in the youngest age group used the bare form. Its usage was mixed among informants in the middle group. Instead, six of the eight informants in the oldest age group used the compound *clothes closet* as the name for this object instead, as the following table shows:

Table 4.4: Correlation of *clothes closet* with Age of Informant

p<.138 (no sig.)	AGE			
	Oldest	Middle	Youngest	Total
clothes closet 0	2	6	3	11
1	6	2	2	10
Total	8	8	5	21

Although there is no statistical correlation between the variable of age and use of *clothes closet*, the percentage of informants using *clothes closet* as a response is far smaller in the middle and youngest groups (25% and 40%, respectively) than in the oldest group (75%), which, taken together with the

preceding table, shows that informants in the oldest group were much more likely to use *clothes closet* and not use other terms for this item.

There is also some correlation between field worker and the use of *clothes closet*, as shown below:

Table 4.5: Correlation of *clothes closet* with Field Worker

p < .028		FIELD WORKER		
		Newton	Antieau	Total
clothes closet	0	2	8	10
	1	7	3	10
Total		9	11	20

The compound variant was elicited much more readily in Newton's interviews than my own.

gutters (B16)

Kurath reported the variant *gutter(s)* to be the usual expression for a metal trap that catches rain coming off the roof in the South, in the Hudson Valley, Long Island and New Jersey, and in eastern New England, and he found the variant to be in general currency as a trade term throughout the states. He also reported, however, that many local terms could be found throughout the Midland and Northern speech areas, including *eaves troughs*, which occurred in a great deal of New England and its settlement area, the Ohio Valley, and in parts of New York. Among the general distribution of *gutter(s)* in coastal Carolina, as well as in western Virginia and North Carolina, Kurath also found scattered instances of *eaves troughs, water troughs* and *troughs* among older informants, and he reported *the spouting* and *the spouts* to be in use in the North Midland area and West Virginia and *eaves spouts* in parts of New England, Pennsylvania and Ohio.

Despite the fact that many of the Colorado informants did not have gutters on their own houses, apparently due to the low amount of rainfall in some parts of the state, they were at least familiar with the referent and supplied several variants for it, as the following table shows:

Table 4.6: Lexical Variants Associated with the Headword *gutters*

B16	**Gutters**
gutter(s)	8
eave(s)	4
eavestrough(s)	3
eavetrough	2
ground	2
rain gutter(s)	2
cupola	1
drain	1
dripped on the ground	1
eaves and troughs	1
flat eaves	1
NR	1
rain trough	1
right on the ground	1
troughs	1
valleys	1

H17 dripped on the ground	just ___
J18 gutter	short piece of ___
J22 ground	right on the ___
K19 barrel	old days

In addition to the common term *gutter* (8), responses included *(rain)gutter(s), eaves, eavetrough, eavestrough(s), troughs, eaves and troughs,* and *valleys.* No statistical correlation was found between any of the competing lexical variants in the corpus and the social variables that were tested in this study.

porch (B26)

Kurath reports several terms for the target word *porch* in the eastern states, including *piazza, stoop, veranda,* and *gallery*, although he observes that there is some variation in the objects to which these terms refer.

In the Colorado corpus, the term *porch* was used by nearly all informants (n=16), and *porch* also appears in several other variants, including *front porch, back porch, sun porch, screened-in porch* and *glassed-in porch*. Other variants for this referent were *deck, awning, front step, patio, mudroom,* and *lean-to*, some of which, e.g. *awning,* apparently indicate some semantic overlap between terms for the

concrete slab that is often designated as the porch, the covering that extends from the roof or is attached to the side of the house, and both the slab and the covering as a whole unit. No statistical analysis was performed on this item because all testable variants were variant forms of the word *porch* and seemed to only indicate where the referent was located and not a difference in the structure of the item that was being discussed.

shades on rollers (B27)

At the time of Kurath's writing, shades on rollers were a recent innovation, and he found the primary variant for this item to be *(roller)shade*, which was reported in the Hudson Valley, the Virginia Piedmont, the Carolinas, and the cities of the eastern United States. Aside from some of the cities of the Midland seaboard, *blinds* was the most common term in the Midland region, including the area surrounding Philadelphia, where it competed with *curtain*. In LAGS, *shades* is the most common variant (n=516) followed by *window shades* (n=209) and *blinds* (n=90); *green shades* (n=1) is also recorded.

In response to the prompt pertaining to a vinyl piece on a roller that is used as a window covering, there were two competing terms in the Colorado data – *shade(s)* and *blind(s)* – and a variety of terms of which the majority of terms were compounds founded on the use of one of these terms, including *Venetian, Venetian blinds,* and *black window shades,* which were not recorded in LAGS or mentioned by Kurath.

Although no statistical correlation was found between *shade(s)* and the social variables that were tested in this study, when all variants that included the word *shade* were collapsed into a single table and tested, significant correlation was found between the item and the education level of informant, as shown in Table 4.7 below:

Table 4.7: Correlation of *(*) shades* with Education Level of Informant

p < .041		EDUCATION			
		Lowest	Middle	Highest	Total
(*) shades	0	6	3	1	10
	1	1	5	5	11
Total		7	8	6	21

Only one person in the lowest education group used one of the *shade* forms to describe this item, while only one informant in the highest educational level did not use a *shade* form, and usage of *shade* forms was mixed in the middle group, suggesting that the higher education level informants attained, the greater the likelihood that they would use one of the *shade* forms.

tin bucket (C5)

In the Atlas work of the eastern states, the areal distribution of *bucket* and *pail* provides one of the clearest geographical distributions and one that is often referred to in the literature (see e.g. Carver 1987: 11). Kurath (1949: 56) reported that "[t]he well-known metal container is called a *pail* in the entire New England settlement area and in the Hudson Valley, a *bucket* in all of the Midland and the South." He also noted, however, that *bucket* and *pail* were in competition on the New England coast north of Boston and that *pail* had spread southward to central New Jersey and competed with *bucket* in Philadelphia. Kurath also noted that *pail* was used in some parts of the South for a wooden milk or water container.

When asked to name a container with a handle used for collecting water, the majority of Colorado informants said *bucket* rather than *pail* with only two of the twenty informants mentioning the word *pail* as a response to the prompt. The word *bucket* also occurred often in conversation and in a number of collocations, including *tin bucket, steel bucket, galvanized bucket, plastic bucket, five-gallon bucket, lard bucket, bucket of paint,* and *bucketfed lamb*, while *pail* occurred elsewhere only in the phrases *milk pail* and *plastic pail*. No statistical correlation was found between the choice of *bucket* and *pail* and any of the social variables that were tested.

faucet (C8)

Kurath reported *faucet* to be the only term in general use throughout the Northern area for a device used to direct water from an outside source to a sink in the kitchen, but he found *spicket* (sometimes *spigot)* in the Midland and South, although the term *faucet* was not unfamiliar to speakers in these regions.

Faucet was used by all the Colorado informants for this item, but a variety of other terms were also elicited in small frequencies, such as *(water) tap. Pump, (pump) spout, well* and *hydrant* were all reserved for outside water sources. The variants *spicket* and *spigot* were also familiar to informants, although informants mentioned these were outside items or older terms. *Mixing faucet* was used one time, but the informant said that he considered it an older term. Due to the absence of competing forms, no statistical testing was done on this item.

frying pan (C11)

In the LAMSAS records, the general term for a cast-iron pan for cooking on a stovetop is a *frying pan*, but two older terms – *skillet* and *spider* – were recorded as variants that were used to distinguish cast-iron pans from pans made from sheet metal. Kurath found *skillet* to be largely in the Midland area, while *spider* was found in the New England settlement area, along the New Jersey coast, and on the coast from the Potomac south to the Peedee River.

In the Colorado interviews, *frying pan* and *skillet* are both used, with *frying pan* having a slightly higher frequency in direct elicitation (n=15), but *skillet* occurring 11 times. While the two variants were synonymous for most of the informants, there were semantic differences for others; for instance, most said that skillets were made out of iron and were consequently heavier than frying pans, which were typically made out of lightweight metals like tin and aluminum. One informant (Hygiene) reported that *skillet* was an older term, while two other informants (Beulah and Springfield) said that *frying pan* was older and not used much anymore. *Skillet* occurred frequently in collocations as in *iron skillet, cast-iron*

skillet, and *steel skillet*, while *frying pan* was usually not modified. No significant correlation was found between the use of either *frying pan* or *skillet* and the social variables that were tested.

kerosene (C13)

Kurath found *kerosene* in general use in the North and in the Carolinas while in the Midland region between Pennsylvania and Virginia he found two terms: *Coal oil* east of the Alleghenies in Pennsylvania and then southward and *lamp oil* west of the Alleghenies in Pennsylvania, West Virginia and the Virginia Piedmont. *Coal oil* is also found in the Ohio Valley.

Discussion of lamps in the Colorado corpus shows nearly an even split between the use of the terms *kerosene* and *coal oil* for the fuel used in them. Other terms used were *crude oil, distillate,* and *gasoline*. When asked, informants said that *coal oil* and *kerosene* refer to the same thing. No statistical significance was found between use of either term and extralinguistic variables.

bed on the floor (C16)

Kurath noted *pallet* to be the name for a makeshift bed on the floor in the South and South Midland. When asked for words describing a *bed on the floor*, Colorado informants responded with several variants, often reflecting the various items one might use to make sleeping on the floor more comfortable, such as an *air mattress* or *a spare mat.* Although most informants said they would not call the bed itself anything special but would simply call the act *sleep(ing) on the floor* or making a *bed on the floor*, several informants did report using the variant *pallet* (n=5), but other variants were not used enough to test them statistically.

corn on the cob (D1)

Kurath found *roasting ears* to be the primary term for sweet corn served on the cob in all the South and South Midland and extending into the southern half of Pennsylvania, while in the North Midland other terms were beginning to supplant *roasting ears*. In the Colorado corpus, the most common response to a question pertaining to corn when it is eaten off the cob is *roasting ears*, which is used nine

times, while (*corn) on the cob* is used by five of the informants. Among the nine informants who gave their first answer as *roasting ears*, however, many were familiar with the phrase *corn on the cob*. Several informants used the phrases *on the cob* and one used *off the cob* for this item.

Use of *on the cob* was significantly correlated with the informant's year of birth as illustrated in the table below:

Table 4.8: Correlation of *on the cob* with Informant's Year of Birth

p < .036	YEAR OF BIRTH			
	Earliest	Middle	Latest	Total
on the cob 0	4	8	6	18
1	3	0	0	3
Total	7	8	6	21

All informants who used the variant were of the earliest birth group, having all been interviewed in 1990 and being of the oldest age group.

On the cob was also significantly correlated with field worker, since it was only elicited by Newton:

Table 4.9: Correlation of *on the cob* with Field Worker

p < .043	FIELD WORKER		
	Newton	Antieau	Total
on the cob 0	6	11	17
1	3	0	3
Total	9	11	20

Testing of all the variants that included the word *cob* showed that there was also apparently some field worker effect at work with this item, as illustrated in the table below:

Table 4.10: Correlation of *(*) cob* with Field Worker

p < .007	FIELD WORKER		
	Newton	Antieau	Total
(*) cob 0	1	8	9
1	8	3	11
Total	9	11	20

Newton elicited far more variants incorporating the word *cob* than I did, as my informants often provided *roasting ears* as their response.

cornhusks (D2)

In the eastern states, the most common term for the leaves covering an ear of corn was *husk* in the North and North Midland, while *shucks* was the more usual term in the South and South Midland. Kurath also reported that at the dividing line of the two terms, the term *caps* was relatively common.

In the Colorado corpus, the preferred variant for the outer leaves covering an ear of corn was *husk(s),* although *(corn) shuck(s)* was also relatively common. A significant correlation between the use of *husks* and region was found in the data, as the following table illustrates:

Table 4.11: Correlation of *husks* with Region of Informant

p < .044	REGION			
	Plains	Mountains	Southwest	Total
husks 0	4	1	3	8
1	1	8	4	13
Total	5	9	7	21

Use of the term *husks* was infrequent in the plains region, but it was used by nearly all the informants in the mountain region and its use was mixed in the southwest.

There was also a significant correlation of *shucks* by regions within the state, as the following table shows:

Table 4.12: Correlation of *shucks* with Region of Informant

p < .008	REGION			
	Plains	Mountains	Southwest	Total
shucks 0	1	9	5	15
1	4	0	2	6
Total	5	9	7	21

In the Colorado interviews analyzed for this study, *shucks* was never found in the mountain region and occurred infrequently in the southwest but was used by nearly all the informants in the plains region of the state.

The word *shuck* not only occurs as a noun in the corpus, but also as a verb (primarily as *shucking*) to denote the act of separating the leafy outer shell of the corn from the vegetable; *husk* is never used in this manner in the corpus. However, no statistical significance was found that correlated the use of *shuck* as a verb and the social variables that were tested in this study.

beans (D4)

With respect to a green vegetable grown on a vine, Kurath reported three primary variants in the eastern data: *String beans* served as the primary northern term, *snap beans* the southern term, and *green beans* the west Midland term.

Using the LAWS worksheets, field workers ask informants an open-ended question regarding the types of beans that were grown in the area and ask follow-up questions about beans the informant mentioned in the response or about variants the field worker had heard about elsewhere but that the informant did not mention. Among the various types of beans that the Colorado informants mentioned, lexical variants for beans that had already been noted in the eastern states were among the most common responses with strong competition between the term *green bean(s)* (13) and *string beans* (10).

Use of the variant *string beans* did show a correlation with biological sex of the informant, as the following table illustrates:

Table 4.13: Correlation of *string beans* with Sex of Informant

p < .003		SEX		
		Male	Female	Total
string beans	0	10	4	14
	1	0	7	7
Total		10	11	21

As shown by the table, no males used the term *string beans*, while the majority of female informants in the study did use the variant in their response.

In addition to variants for green beans, Kurath also analyzed responses concerning a white bean that was most commonly referred to as a *lima bean*. Kurath found this item to be more commonly referred to as a *butter bean* in the South, but he also found that many informants used both *lima bean* and *butter bean*, the latter being used to denote a smaller variety of the type of bean.

As a response to the same open-ended prompt that elicited green beans, the question concerning beans grown in the area elicited *lima beans* relatively infrequently, perhaps owing to lima beans not being a major crop in the area or because of a general distaste for the referent, as illustrated in some of the answers in the table below:

Table 4.14: *Lima beans* with Informants' Comments

D4 Lima beans

NR	13
lima bean(s)	3
lima(s)	2
big old white beans that I don't like	1
big white lima bean	1
butter beans	1
mortgage lifter beans	1
mortgage lifters	1

I16 mortgage lifter beans = which were great big kind of like a lima bean
I16 mortgage lifters = they were people's survival back in those years and we raised, we raised quite a few

Rather than much talk of *lima beans* in the corpus, there is instead a relatively great deal of discussing concerning *pinto beans*, of which there will be discussion in the section on western variants below.

free-stone peach (D11)

In the Midland area and in New England, as well as on the coasts of Virginia and North Carolina, Kurath reported *free-stone peach* to be the general term for a peach in which the fruit is not attached to the seed (or stone); however, he reported that "South of the Pennsylvania line a considerable variety of

expressions is found in a bewildering distribution" (1949: 72), including *open peach*, *opening peach, open-stone peach, open-seed peach, soft peach, clear-stone peach,* and *clear-seed peach.*

When responding to this same prompt, the majority of Colorado informants simply used the term *freestone*, but this question elicited several variants, ranging from *freestone peach* to *free peach* to *Albertas* to *white peach*.

The statistical analysis of testable variants associated with this headword revealed a significant correlation between the use of the variant *freestone* and *freestone peach*, as illustrated in the following table:

Table 4.15: Correlation of *freestone (peach)* with Age of Informant

p < .047		AGE			
		Oldest	Middle	Youngest	Total
freestone (peach)	0	2	7	3	12
	1	6	1	2	9
Total		8	8	5	21

Freestone (peach) was used by six of the eight informants in the oldest group, while nearly no informants in the middle group used the term and usage was nearly even among the informants in the youngest age group.

Freestone (peach) was also significantly correlated with field worker, as illustrated in Table 4.16 below:

Table 4.16: Correlation of *freestone (peach)* with Field Worker

p < .009		FIELD WORKER		
		Newton	Antieau	Total
freestone (peaches)	0	2	9	11
	1	7	2	9
Total		9	11	20

Newton elicited seven occurrences of the variant, while I elicited *freestone (peaches)* from only two of my eleven informants.

Free (peach) correlated significantly with two social variables, the first being origin of informant's father, as shown in the table below:

Table 4.17: Correlation of *free (peach)* with Origin of Father

p < .016		ORIGIN OF FATHER			
		Colorado	Great Plains	Elsewhere	Total
free (peach)	0	3	10	5	18
	1	3	0	0	3
Total		6	10	5	21

As shown, only informants whose fathers were from Colorado gave *free (peach)* as an answer; no informants whose fathers were from the Great Plains, the eastern states, or from outside the United States gave the variant as a response.

The variant *free (peach)* was also significantly correlated with age group as shown in the table below:

Table 4.18: Correlation of *(free) peach* with Age of Informant

p < .005		AGE			
		Oldest	Middle	Youngest	Total
free (peach)	0	8	8	2	18
	1	0	0	3	3
Total		8	8	5	21

Informants in neither the oldest nor the middle group in this survey used *free (peach)* as a variant, but its usage was mixed among informants in the youngest group.

The use of the terms *Alberta(s)* and *Alberta peaches* also showed significance with age, as shown in the following table:

Table 4.19: Correlation of *Alberta (peaches)* with Age of Informant

p < .002		AGE		
		Oldest	Middle	Youngest	Total
Alberta (peaches)	0	5	9	2	16
	1	0	0	5	5
Total		5	9	7	21

No informants in the two oldest age groups used the terms, but 71.4% of the informants in the youngest age group used the term. Statistical testing of variants of the headword *freestone peach* suggests that age plays an important part in the variants that informants used for this item.

clingstone peach (D12)

Kurath reports that the distribution of terms for a peach in which the fruit clings to the seed, or stone, is *clingstone peach* in New England, *clingstone peach* and *cling peach* in the Midland area, greater New York City, and western North Carolina, and *press peach* and *plum peach* in the South Midland and the South, with *press peach* also occurring along the Atlantic coast from lower Delaware to Georgia. He also notes the distribution of *plum peach* in western Virginia, southern West Virginia, and the western Carolinas.

In the Colorado corpus, the primary variants that are used for a peach in which the fruit is attached to the seed are *clingstone peach* and *cling peach*, although there is a tendency among informants to shorten the variant to *cling* or *cling peach*. Three people used the full term *clingstone* (but all but one of these uses were suggested by the field worker) and one called it an *early peach*. There was no statistical significance between use of any of the variants for this type of peach and the social variables tested in this study; however, there was some field work effect for the variant *cling (peaches)* with Newton eliciting it more than Antieau.

clabber (D20)

Kurath found no national term for curdled sour milk, but rather, numerous regional and local terms, including a number that included use of the word *clabber* in some form, as well as such terms as

lobber milk, thick milk, sour milk, and *curdled milk*. He found *clabber* to be the most common expression in the South and the Ohio Valley and *clabber milk* more common in the South Midland. In parts of the New England settlement area and Philadelphia, *bonny-clapper* was common and this term was also scattered in western Pennsylvania and southward into North Carolina. In other parts of New England, including Rhode Island, and on Long Island and in parts of New York State, *lobbered* and *loppered milk* were commonly used. Pennsylvania was reported to have the most variation; in addition to *clabber* and *bonny-clapper*, such variants as *thick milk, curdled milk*, and *cruddled milk* also appeared in the Atlas data.

The words that were elicited in Colorado by a prompt inquiring about a food product made with milk that had curdled were *curdled milk, clabber(ed) (milk), clabber curdle, sour milk, cottage cheese, curdled cheese, smearcase,* and *powdered cheese*; one informant reported having heard *blinkey* when the word was suggested by the field worker. Among these variants, only the collapsed form of *clabber* showed any significance with extralinguistic variables, and that was with field worker, as Newton elicited it more than Antieau.

cottage cheese (D21)

Kurath noted that *cottage cheese* was the national term for curds, but he also found a variety of expressions for it in his eastern data, including *curds, curd cheese,* and *sour-milk cheese* in Maine and coastal New England. With the exception of southwestern Connecticut, Kurath reported *Dutch cheese* to be the predominant term for this item in New England, including the New England settlements of New York state, and he also found the term to be common in Pennsylvania, and Ohio, and to a lesser extent in West Virginia. Kurath also found *pot cheese* and *smear case* to be common variants for this dairy product in the Hudson Valley and the North Midland, respectively. In the South, Kurath reported the predominant regional terms to be *curds, clabber cheese* and *homemade cheese*.

In the Colorado interviews, the prompt targeting variants referring to *clabber* (D20, above) and the prompt targeting variants referring to cottage cheese elicited some of the same variants. The prompt

for cottage cheese elicited fewer variants with *cottage cheese* by far the most widely-used variant, possibly reflecting its spread as a commercial term. Only the Walden informant offers a number of variants for this term, including *smearcase* and *German cheese,* and one variant that she provides in an anecdote reflecting her misunderstanding of the term *cottage cheese* as a child – *college cheese.*

cornbread (D22)

In reporting on the eastern data for the headword *cornbread*, Kurath stated that *cornbread* was the national term for this type of food at the time, but that there were several regional variants, including *johnny cake* in the New England settlement area and *pone, corn pone* and *pone bread* in parts of Pennsylvania and the Atlantic settlements south of it. According to Kurath's analysis, however, these regional variants were being supplanted by the term *cornbread*.

Kurath's prediction that *cornbread* would supplant other variants for this type of food appears correct, as prompts targeting this headword provided little evidence of variation in the Colorado data. One informant reported hearing *johnny cakes*, and three informants reported, upon suggestion by the field worker, that they had heard it called *pone*, but one of them reported *pone* to be a Southern term. One informant (Walden) mentioned a similar type of referent called *punk (bread)*. Due to the lack of variants in the corpus, no statistical testing was done on this item.

rail fences (E1)

Kurath discusses several variants for a fence made out of wood and built in a zig-zag fashion, but he reported the primary term to be *rail fence*, especially in the South, in New York, in the northern counties of Pennsylvania, and in West Virginia. In New England, the same item was called a *Virginia rail fence*, and in the Midland area, the general term is *zig-zag fence*.

Few of the Colorado informants had much familiarity with a fence made of wood placed in a zigzag fashion, as they reported that wood was in too high of a demand to allow for such a thing, especially in earlier times. Many of the informants instead responded to prompts about fencing on the farm or ranch by discussing barbed wire. However, several names for wood fencing emerge from the

Colorado corpus, as listed in Appendix D, with the most frequently used among them being *pole fence* (n=4). As no other variants are used more often than twice, statistical testing was not conducted for this headword.

corn crib (E6)

In the earlier Atlas records, the predominant term used for a place to store corn for animals was a *corn crib* in New England and in the Midland region with the shortened term *crib* being generally used in Rhode Island, as well as in North Carolina and in parts of Virginia and South Carolina. In the Virginia Piedmont and Maryland, Kurath found several occurrences of *corn house*, which was also found scattered in small numbers in New England. Kurath also noted the local expressions *crib house* in southern New Jersey and *corn stack* in southern Delaware.

In the Colorado corpus, the word *crib* is used as part of several variants, including *corn crib(s), corn cribbing, hay crib,* and *slat-wire crib*. However, *granaries* was the most common term used for a structure used for storing corn (n=10).

Only when the related forms *corn crib(s)* and *corn cribbing* were compacted was there any correlation between any of the lexical variants used in response to this prompt and the social variables that were tested. *Corn crib(bing)* correlated significantly with region, as shown in Table 4.20 below:

Table 4.20: Correlation of *corn crib(bing)* with Region of Informant

p < .029	REGION			
	Plains	Mountains	Southwest	Total
corn crib(bing) 0	2	8	7	17
1	3	1	0	4
Total	5	9	7	21

The term is never used in the southwest region in the data and only once in the mountains, but is used by 60% of the informants in the plains region.

gunnysack (E13)

Kurath found the most common term for the rough loose-woven sack in which potatoes and other produce are packaged to be *burlap bag* or *burlap sack*, but in most of the South and parts of the Midland several regional and local terms competed against each other, including *sea-grass sack* and *crocus sack*. *Gunny sack* is the only other term Kurath discusses and he reports that it is the common term for a burlap bag in the Ohio Valley west of Wheeling, and it is scattered in its distribution in eastern Pennsylvania, in New York City, and in New England. Kurath found the term *tow sack* to be common in North Carolina, but it was rarely found in other states.

In the Colorado corpus, *gunny sack* was used by the majority of informants, but some informants mentioned using *burlap bag* as well. Oncers in the corpus included *potato sack* and *hemp sack*. Two people called them *tote bags* although one of these informants identified this variant with Texas speech. Three people mentioned *tow sack* although one identified it as an older term and another as an Oklahoma term. One person suggested that *gunny sack* is a slang form.

Of the competing variants *burlap bag* and *gunny sack*, only *burlap bag* significantly correlated with a social variable associated with informants, that of biological sex, as shown in Table 4.21:

Table 4.21: Correlation of *burlap bag* with Sex of Informant

p < .016		SEX		
		Male	Female	Total
burlap bag	0	4	10	14
	1	6	1	7
Total		10	11	21

While 60% of the male informants used the variant *burlap bag*, only one female used it.

Use of the term *gunnysack* was significantly correlated with the variable of age, as shown in the table below:

Table 4.22: Correlation of *gunny sack(s)* with Age of Informant

p < .032		AGE			
		Oldest	Middle	Youngest	Total
gunny sack(s)	0	3	6	0	9
	1	5	2	5	12
Total		8	8	5	21

While all the informants in the youngest group and the majority of informants in the oldest group used the item, only two of the eight middle group informants used it.

Gunny sack is also correlated with field worker, as shown in Table 4.23:

Table 4.23: Correlation of *gunny sack(s)* with Field Worker

p < .007		FIELD WORKER		
		Newton	Antieau	Total
gunny sack(s)	0	1	8	9
	1	8	3	11
Total		9	11	20

While nearly all of Newton's informants used the term, only three of my informants used the variant in anything other than a doubtful manner.

sharpening stone (E16)

The eastern Atlas records provide evidence of several variants for a stone used to sharpen knives. One is *whet stone*, which Kurath reported to be in general use in the North and North Midland, and another is *whet rock*, which Kurath recorded to be used in most of the South and South Midland, although *whet stone* could also be found in both regions.

In the Colorado interviews, the prompt for a stone used for sharpening knives elicited several variants, including *grind(ing)stone, file, emery board, (electric) grinder, whetstone, knife sharpener, awl, flexstone, sickle sharpener* and *stone*. Among these variants, *grindstone* was the most commonly used (7 informants), while *whetstone* was used by only four informants.

With respect to statistical analysis, *grindstone* was found to have no significant correlates with any of the social variables tested; however, a significant correlation between other variants and social

variables was found. For instance, *whetstone* was found to be correlated with age, as shown in the following table:

Table 4.24: Correlation of *whetstone* with Age of Informant

p < .022	AGE			
	Oldest	Middle	Youngest	Total
whetstone 0	8	4	5	17
1	0	4	0	4
Total	8	8	5	21

No informants used the variant in the oldest and youngest age groups; however, usage was mixed in the middle age group.

Use of the term *grinder* was also found to have a significant correlation with the region in which informants lived, as shown in the table below:

Table 4.25: Correlation of *grinder* with Region of Informant

p < .036	REGION			
	Plains	Mountains	Southwest	Total
grinder 0	5	9	4	18
1	0	0	3	3
Total	5	9	7	21

No informants in the plains and mountain regions used *grinder*, while use of the variant in the southwest region was mixed.

Grind(ing) stone was significant for field worker, as illustrated in the following table:

Table 4.26: Correlation of *grind(ing) stone* with Field Worker

p < .032	FIELD WORKER		
	Newton	Antieau	Total
grind(ing) stone 0	3	9	12
1	6	2	8
Total	9	11	20

Newton elicited 75% of the instances of this variant, while I elicited only 25% of the variants of the total uses of *grind(ing) stone.*

A/X frames (E17)

Kurath reported the term *sawhorse* for a wooden cross frame used for cutting wood to be in general use in the East, except for a large portion of Pennsylvania and the Dutch settlement area, where *sawbuck* was more common. Other variants that Kurath found in the eastern data included *(wood) buck, (wood) jack,* and *(wood) rack*.

In the Colorado corpus, the main words for this item are *sawhorse* and *sawbuck*, with *sawhorse* being the most commonly used (15 occurrences compared to 5 for *sawbuck*). It should be noted, however, that while for some informants these terms are synonymous, for others there is a difference in how the items denoted as *sawhorse* and *sawbuck* are constructed and what their uses are. No statistical significance was found between the choice of either variant and the social variables that were tested for this study.

slop bucket (F6)

With respect to the LAMSAS records, Kurath notes that in the North the most common variant for an item used to collect kitchen scraps and carry them out for animal feed, usually pigs, is *swill pail.* In the Midland and the South, on the other hand, *slop bucket* is the most common variant.

The most common variant in the Colorado corpus for such an item is *slop bucket*. To a lesser degree, *slop pail* is used, and *slop jar* occurs once (Lamar). *Refuse bucket* also occurs once (Springfield). One informant (Springfield) also reports that the term *slop bucket* was sometimes used as a variant of toilet. The variants *swill bucket* and *swill pail* are not used by any of the informants; in fact, one informant suggested that *swill* was too fancy a word for the referent:

> The people that called them swill buckets…were the people that lived in town that had no frigging idea how dirty it was. It was slop. Period. (Alamosa)

The Springfield informant reported that he had heard the term *slop bucket* used in reference to the commode. None of the variants for this headword correlated significantly with informant variables, but *slop bucket* correlated with field worker.

bull (F7)

Kurath reports that the term *bull* is used for male cattle throughout the United States and that the term has little competition in the North Midland and in the state of New York. Elsewhere, *bull* is avoided when in mixed company. In New England, the term is replaced by such terms as *sire, (male) animal, critter, toro, seed ox, gentleman cow, gentleman ox,* and *masculine*. In the South, the vocabulary is more varied and includes such terms as *male, male cow, gentleman cow, stock brute, stock beast, Durham, jock,* and *major* (the last three in West Virginia). Kurath reported that while these euphemisms were rare or used only in jest in some areas, there were other areas in which using the variant *bull* in certain situations would be a serious offense.

In the Colorado corpus, *bull* is the primary variant for male cattle with little evidence that there was much need for euphemism in the West. The Black Hawk informant mentions using the word *male* and the Hygiene auxiliary informant reported using the term *an animal* as a euphemism for *bull* when she was younger. The Durango and Lamar informants report using *gentleman cow*, the Idalia and Springfield admit hearing it, and the Walden informant, like some others in the survey, said that people just used the term to be funny and not because they were concerned with offending someone with the term *bull.*

ram (F10)

Kurath notes that the term *ram* for a male sheep is prevalent throughout the eastern United States, but he also notes that outside the southern United States, *buck* and *buck sheep* occur alongside *ram*, especially in rural areas. While the variant for male sheep that is used most often in the Colorado corpus is *ram*, it appears that this might be a result of the questioning. *Ram* was often used as part of the prompt for semantic clarification. Among the 11 interviews in which *ram* did not occur in the prompt, 8 informants used *buck* and 4 used *ram* (including one informant who used both variants).

The variant *ram* had a significant correlation with the origin of the informant's father, as shown in Table 4.27 below:

Table 4.27: Correlation of *ram* with Origin of Father

p < .016		ORIGIN OF FATHER			
		Colorado	Great Plains	Elsewhere	Total
ram	0	3	10	2	15
	1	3	0	3	6
Total		6	10	5	21

No informants whose fathers were born in the Great Plains states used the variant *ram*, but usage was split among informants whose fathers were born in Colorado and those informants whose fathers were born in the eastern United States or Europe.

The variant *buck* correlated only with field worker, as illustrated in Table 4.28:

Table 4.28: Correlation of *buck* with Field Worker

p < .009	FIELD WORKER		
	Newton	Antieau	Total
buck(s) 0	2	9	11
1	7	2	9
Total	9	11	20

Newton elicited the variant seven times in the nine interviews he conducted that were chosen for this study; the variant occurred only twice in the eleven interviews I conducted.

chipmunk (G3)

Kurath reports two major terms for this small striped animal competing in the eastern United States: *Chipmunk* in the North and *ground squirrel* in the South and South Midland with *chipmunk* beginning to win out in many places.

Although *chipmunk* is a headword in the LAWS interviews, variants of the term were often elicited using an open-ended prompt requesting that informants name wild animals in the area. Follow-up

questions elicited several terms for this referent, including three uses of *ground squirrel(s)*. Statistical significance was found for neither *chipmunk(s)* nor *ground squirrel(s).*

woods animals [skunk] (G9)

A variety of regional folk terms are found in the LAMSAS records for the black and white-striped mammal that uses its strong foul scent as a defense mechanism, including *polecat* in the South and the Midland area, but *skunk* elsewhere. Elicited using an open-ending question asking about local animals one might find in the woods, *skunk* is virtually the only variant for this animal in the Colorado corpus, besides a reference to them as *stinkers* in the Kremmling interview. No statistical significance was found for *skunk.*

dragonfly (G18)

In the eastern records, Kurath found dragonfly to be the primary variant among educated eastern speakers for an insect with long wings that hovered around swampy areas. However, Kurath also found a great number of regional folk variants for this animal, including *(devil's) darning needle* in New England and the Dutch settlements of the North, *snake feeder* in the Midland region, and *darning needle* and *snake doctor* in competition in West Virginia. *Snake doctor* was also the predominant form in the piedmont of Virginia and North Carolina, while *mosquito hawk* was a common variant in coastal Virginia, the Carolinas, and Georgia.

Although most of the Colorado informants mention familiarity with dragonflies, few informants were familiar with the folk variants that had previously been elicited in the eastern United States with respect to this animal. Upon suggestion, three informants mentioned being familiar with the variant *snake doctors,* but two of these three informants also said that it was an older term. One informant admitted familiarity with the variant *darning needle* and two informants said they had heard the variant *snake feeder(s)*, but one of these informants identified it as an older term.

woodpeckers (G19)

In addition to the common term *woodpecker,* Kurath reported the term *peckerwood* to be a common variant in folk speech for a bird that pecks on wood in both the Virginia Piedmont and western North Carolina. In the Colorado corpus, *woodpecker* is the usual term for a bird with which most of the informants are familiar. The term *flicker* was also used to some extent but was usually suggested when it was used and informants were not always certain that it referred to a type of woodpecker.

owls (G20)

Kurath found the screech owl to be the most commonly-known owl in the eastern United States, apparently because of the size of the screech owl population in the region and because of its use in superstitions and folktales. Aside from the variant *screech owl*, Kurath reported that south of the Potomac a great number of local terms were used, including *scrich, squich, squinch, shiveling* and *shivering owl*. He also reported such terms as *scrooch* and *squeech owl* in the Midland region.

The LAWS prompt that elicited types of owls was one that elicited the names of local birds, although many interviews also include a prompt for night birds, which generally elicited variants used for owls in the area. Thus, not all interviews include variants for owls, as some informants did not mention owls in response to the open-ended questions. Nevertheless, the Colorado corpus includes many terms for owls, including *hoot owl, barn owl, screech owl, spotted owl, white owl, horned owl, monkey face, snowy owl, brown owl,* and *corn owl*. Among these, the most common are *hoot owl* (n=6) and *horned owl* (n=3). *Screech owl* only occurs twice in the corpus and the local variants for *screech owl* that Kurath reported in the eastern states were not elicited in the Colorado interviews.

Several different owl variants had statistically significant correlations with extralinguistic variables. For example, the use of *owl(s)* had a significant correlation with region, as illustrated in the table below:

Table 4.29: Correlation of *owls* with Region of Informant

p < .042	REGION			
	Plains	Mountains	Southwest	Total
owls 0	3	1	5	9
1	2	8	2	12
Total	5	9	7	21

All but one of the informants in the mountain region used the variant, while in the plains and in the southwest, informants who did not use the variant in their interviews outnumber those who did.

The variant *hoot owl* has a significant correlation with the sex of the informant, as illustrated in the tables below:

Table 4.30: Correlation of *hoot owls* with Sex of Informant

p < .039	SEX		
	Male	Female	Total
hoot owl(s) 0	10	7	17
1	0	4	4
Total	10	11	21

Males never used *hoot owl* in their interviews, but usage of the variant was mixed among female informants.

worms (G23)

Kurath reported the most common variants for the earthworm in the eastern United States to be *fish worm, fishing worm* and *angle worm*, but other terms that were found in the eastern states included *fish bait, bait worm, mud worm, eace worm, rain worm, angle dog, ground worm, robin worm, red-worm, night walker* and *night crawler*.

Typically in response to an open-ended question about worms in the area, the Colorado informants used a variety of variants, most of which Kurath discussed with respect to the speech of the eastern United States, including *earthworm, fishworm,* and *nightcrawler*. But other variants included

cutworms, inch-worms, and *grub worms.* Three worm variants are correlated with extralinguistic variables: *nightcrawlers, fishworms,* and *worms*.

A significant correlation was found between use of the term *nightcrawler(s)* and the region in which the informant's mother was born, as shown below:

Table 4.31: Correlation of *nightcrawlers* with Origin of Mother

p < .014	ORIGIN OF MOTHER			
	Colorado	Great Plains	Elsewhere	Total
nightcrawler(s) 0	3	6	3	12
1	8	0	1	9
Total	11	6	4	21

Only one of the informants whose mother was not born in Colorado used the variant; however, usage is mixed among informants whose mother came from Colorado.

The variant *fishworm* was found to have a significant correlation with region, as seen in this table:

Table 4.32: Correlation of *fishworms* with Region of Informant

p < .011	REGION			
	Plains	Mountains	Southwest	Total
fishworms 0	1	7	7	15
1	4	2	0	6
Total	5	9	7	21

Fishworm was used most frequently in the plains informants of the Colorado corpus, while among the southwest Colorado informants the term was not used in this corpus, and usage was mixed in the mountain region.

Use of the word *worms* in the Colorado corpus is correlated with field worker, as the following table illustrates:

Table 4.33: Correlation of *worms* with Field Worker

p < .028	FIELD WORKER		
	Newton	Antieau	Total
worm(s) 0	4	10	14
1	5	1	6
Total	9	11	20

The main reason for this difference stems from Newton's prompt designed to elicit the broad target item word, while I started by asking informants for the names of local worms.

the wind picks up (H12)

In referring to an increase in wind, Kurath reported that speakers of the eastern United States used a variety of forms. One observation that he made in his analysis of eastern lexical variants was that informants on the East Coast used many variants that included the word *breeze* (e.g. *breeze up, breeze on* and *breeze*), and he speculated that these were related to maritime culture, which would have a stronger interest than other cultures and occupations in what the wind was doing and therefore might have a special vocabulary for this aspect of weather.

Far from being a maritime environment, Colorado speech has many expressions for increasing winds but without a clear favorite in the corpus. *Coming up* is the most common (n=4) but occurs relatively infrequently compared to the most common variants for other headwords. Other variants used to describe a rising wind include *(really) gushing, high wind, really beginning to blow, cutting up, picking up, (really) blowing, wind's blowing like hell, picking up, increasing, wind starts out hard,* and *sure is windy today*. Due to the small numbers for most of the variants (mode=1), no statistical analysis was performed on variants of this headword.

creek (I2)

Kurath reported *creek* to be the most common general term used for a small freshwater stream in the eastern United States, but he notes the use of the word *brook* in northeastern U.S., *run* in the Midland, and *branch* in the South and South Midland as general designates for bodies of running water.

A number of words for bodies of running water exist in the Colorado corpus, including several in the proper names of the features, as in the use of the word *river* in the Colorado *River* and its Spanish counterpart *rio* in *Rio* Grande. The word *creek* is also used in numerous designations throughout the state, as attested by nearly all of the Colorado informants who mentioned at least one such feature with the word *creek* in its name, as in, for example, Boulder *Creek* and Dove *Creek*. Furthermore, many communities have taken the names of these features as the names of their communities, as was the case of Cripple *Creek* and Dove *Creek*. *Creek* is also the general term for a body of running water smaller than a river that is used by most informants, although the word *stream* is also attested for such a feature, as shown in the table for *creek* in Appendix D.

In the statistical analysis of this item, *creek* was only counted when informants used it in a generic sense, since nearly all used it at least once as part of a proper name; however, in one test, a number of compounds that included the word *creek*, such as *dry creek, sand creek*, etc, were collapsed. No significant correlation was found between the word *creek* and the social variables that were tested.

The variant *stream*, however, was found to have two significant correlations. One was in the grid row of the informants who used the term, as the following table shows:

Table 4.34: Correlation of *stream* with Grid Row of Informant

p < .035		GRID ROW				
		H	I	J	K	Total
stream	0	1	5	2	4	12
	1	4	0	4	1	9
Total		5	5	6	5	21

No informants used the variant in grid row I, and only one did so in grid row J, but usage was mixed in grid rows H and K, with all but one informant using the item in grid row H.

Year of birth also proved to be significantly correlated with *stream*, as shown below:

Table 4.35: Correlation of *stream* with Year of Birth

p < .049	YEAR OF BIRTH			
	Earliest	Middle	Latest	Total
stream 0	3	3	6	12
1	4	5	0	9
Total	7	8	6	21

Stream was not used by informants who were born in the most recent years, but usage was mixed among informants in the earliest and middle groups.

sidewalk (I15)

Kurath notes that the term *sidewalk* is in general distribution in the eastern states for a paved walkway on the side of a street, but also notes the term *pavement* as being a common term for this in the Philadelphia trade area.

In the Colorado corpus, *sidewalk* was by far the most popular word used for this item. *Pavement* was used once, *stone sidewalk* once, and *walk* once. Due to the absence of competing forms, no statistical analysis was performed.

illegitimate child (J2)

With respect to this term, Kurath says, "The neutral expression *illegitimate child* and the blunt term *bastard* are known and used everywhere. Playful and veiled terms, on the other hand, are regional or local in character" (1949: 77). Kurath reports *ketch-colt* in central New York state and *stolen colt* in central New Jersey. Elsewhere, variants include *woods colt, old-field colt, base-born (child), Sunday baby, Sunday child,* and *come-by-chance.*

The Colorado corpus includes several variants for this item, but the two most common forms are *bastard* (n=6) and *illegitimate* (n=5). Several informants mentioned that *bastard* was an older term that had gone out of use, or they identified it as an offensive word. Two variants that are used in the corpus are related to the variant *illegitimate – illegits* and *illegitimate (child(ren))*. Several informants mentioned that these terms were also offensive and were not used because of the number of children born out of wedlock in the community; one informant simply offered *one of the kids* as a variant response (Springfield). One informant also offered *catch calf* as a variant (Meeker).

shivaree (J3)

Kurath reports the term *serenade* being the term commonly used in the eastern states for a noisy celebration for newlyweds, but reports a variety of regional and local terms for this tradition. These include *shivaree* in parts of New England, western Virginia and eastern Kentucky, and *calathump, skimilton, bull banding, tin-panning* and *belling* in other areas.

Shivaree was the only term used in the corpus for a noisy wedding celebration although many of the informants had to be prodded to use it. Some also used it as a verb or as part of a phrase, as in *wedding shivaree*. Among the types of things people did for such a celebration were pots and pans being banged outside the newlyweds' home, the wife and/or husband getting wheeled around town in a wheelbarrow, and, typically, the newlyweds would welcome everyone who attended the celebration into their home for food and/or drink. Most informants considered the celebration a sign of acceptance, even where they themselves didn't have one. Nevertheless, some informants avoided being *shivareed* and were successful for many years at doing so. Most informants mentioned that this was an older thing that had gone out of style. No statistical analysis was conducted due to the absence of competing forms.

seesaw (J6)

In the eastern states, Kurath found *seesaw* to be the most commonly-known term for a playground item consisting of a board supported by a fulcrum, but he found that *teeter, teeter board,* and *teetering board* occurred in the entire New England settlement area extending from New England proper to the

Great Lakes. On the lower Hudson River, on Long Island, and in New Jersey, *teeter(board)* is supplanted by *teeter-totter*, which is also common in the New England settlements of New York state, Pennsylvania, and Ohio. Kurath also found the occurrence of such variants as *tilting board* and *tippity-bounce* in New England *ridy-horse* in the South, but he concluded that *seesaw* was the general term across social categories.

While *seesaw* occurs in the Colorado interviews four times for this item, *teeter-totter* is by far the most commonly-used variant with all nineteen informants who answered this item using *teeter-totter*. In fact, all the informants who used *seesaw* also used *teeter-totter*.

Table 4.36: Correlation of *seesaw* with Origin of Father

p < .024	ORIGIN OF FATHER			
	Colorado	Great Plains	Elsewhere	Total
seesaw 0	5	10	2	17
1	1	0	3	4
Total	6	10	5	21

No informant whose father was born in the Great Plains states or outside of the United States used *seesaw*, but usage was mixed among those informants whose fathers were born in either Colorado or in the eastern United States.

wishbone (J7)

Kurath found several variants for the breastbone of a turkey or other large fowl in the eastern United States, including *wishbone* in the North and North Midland, *pully-bone* and *pull-bone* in the South, and *lucky-bone* in northern New England and eastern Virginia but relatively scattered in its distribution.

While several Colorado informants report familiarity with the term *pulley-bone*, the most common variant for this object in the Colorado corpus is *wishbone*. All informants who answered this question said that those who get the longer piece are the ones who get their wishes granted.

carry a heavy load (J8)

Kurath reported the term *hauling* to describe the transporting of bulky items in a truck or wagon to be the most common variant in the Midland and the South, although in the coastal South, it competed with *carrying*, and with *carting* on the coast of North Carolina. Although he reported *hauling* to be used in the North, Kurath also found such folk expressions as *drawing, teaming,* and *carting*.

In the LAWS worksheets, the prompt eliciting responses for variants used to describe transporting a heavy load from one place to another include three variants: *pack, lug,* and *tote*, but field workers and informants introduced the variants *carry* and *haul* into the interview session as well. For the analysis of these items, I examined both elicited forms and conversational ones.

As a conversational form, *haul* was the primary variant (used by 13 informants), followed by *pack* (n=2), *carry* (n=1), and *lug* (n=1). With respect to conversational forms, *haul* correlated significantly with grid row of informant, as Table 4.37 shows:

Table 4.37: Correlation of *haul* (conv.) with Grid Row of Informant

p < .042		GRID ROW				
		H	I	J	K	Total
hauled (conv.)	0	0	2	4	0	6
	1	5	3	2	5	15
Total		5	5	6	5	21

All the informants in grid rows H and K used the term, while usage was mixed in grid rows I and J.

The use of *hauled* in conversation was also significantly correlated with field worker, as shown below:

Table 4.38: Correlation of *hauled (conv.)* with Field Worker

p < .01		FIELD WORKER		
		Newton	Antieau	Total
hauled (conv.)	0	0	6	6
	1	9	5	14
		9	11	20

All of Newton's informants used the term in conversation, while usage among my informants was mixed.

Among the forms that were elicited directly, the favored variant was *pack* (n=6), followed by *carry* (n=5), *haul* (n=4), *lug* (n=4), and *tote* (n=4). None of these forms was significantly correlated with any of the social variables tested for this study, but three of them were significantly correlated with field worker, as shown in the following tables:

Table 4.39: Correlation of *haul* with Field Worker

p < .016	FIELD WORKER		
	Newton	Antieau	Total
haul 0	5	11	16
1	4	0	4
Total	9	11	20

Nearly half of Newton's informants used the term *haul* in the elicitation task, while none of mine did.

Carry was also significant for field worker:

Table 4.40: Correlation of *carry* with Field Worker

p < .005	FIELD WORKER		
	Newton	Antieau	Total
carry 0	4	11	15
1	5	0	5
Total	9	11	20

Usage of this variant among Newton's interviews was mixed, while none of my informants used the term. It should be noted that neither *haul* nor *carry* were part of the worksheets for this item but were added by Newton during the course of his interviewing.

Finally, the variant *lug* also correlated significantly with field worker, as shown below:

Table 4.41: Correlation of *lug* with Field Worker

p < .049	FIELD WORKER		
	Newton	Antieau	Total
lug 0	9	7	16
1	0	4	4
Total	9	11	20

Usage of this variant was mixed among my informants, but none of Newton's informants chose this variant.

The great influence of field worker on the choice of variant associated with the headword is an indication of the difficulty of both the set of words semantically associated with transporting goods from one place to another, as well as the elicitation method used to obtain data from the informants. With respect to the semantic issue, one informant said during the elicitation of this item that "it would depend on what was going to be carried or…or where you was taking it or how far" (Lamar), and other informants made comments in a similar vein.

Merry Christmas (J29)

Kurath reported *Merry Christmas!* to be the "universal Christmas salutation" (80) in the North and North Midland areas, and one that was gaining currency among younger people in the South and South Midland area where *Christmas gift* had been the preferred term, as attested by the responses of older informants from those regions.

In the Colorado corpus, *Merry Christmas* was by far the most common greeting that informants reported to use on or just before December 25th, as it was elicited by nearly all the informants. No statistical testing was done for this item due to the lack of variation in this dataset.

sick to the stomach (K22)

With respect to *sick __ the stomach*, Kurath found *sick to the stomach* to be the predominant northern phrase, *sick at the stomach* to be the predominant North Midland form, and *sick to the stomach* on the Southern coast.

One of very few forms that relates to syntax in the LAWS interviews, the *sick__the stomach* proved to be a difficult form to elicit in a natural way. After suggested forms were flagged, the dataset contained seven informants who used the *sick __ the stomach* form, with six informants using *sick to the stomach* and one using *sick at the stomach* form. A search in the corpus revealed that one informant (J21) who reported using none of the *sick __ my stomach* forms had used *sick to my stomach* earlier in the interview.

None of the *sick__my stomach* forms significantly correlated with any of the social variables that were tested. However, a variant that was often used with respect to the line of questioning about stomach sickness, or *bellyache*, did correlate with origin of father, as shown in Table 4.42:

Table 4.42: Correlation of *bellyache* with Origin of Father

p < .032	ORIGIN OF FATHER			
	Colorado	Great Plains	Elsewhere	Total
bellyache 0	6	5	5	16
1	0	5	0	5
Total	6	10	5	20

Bellyache was only used by those informants whose father was born in the Great Plains states.

Bellyache also correlated significantly with field worker, as shown below:

Table 4.43: Correlation of *bellyache* with Field Worker

p < .045	FIELD WORKER		
	Newton	Antieau	Total
bellyache 0	4	10	14
1	5	1	6

More than half of Newton's informants used *bellyache*, but only one of my informants used the form.

10:45 (L3)

There are several possibilities for telling time in English, and the form that was tested here was the use of a quarter form in telling the time, e.g. "it is quarter to eleven." In addition to *quarter to,*

quarter of and *quarter till* are also commonly used. Kurath reported in his work that all three forms had general distribution in the eastern states, but that *quarter to* and *quarter of* were in general competition in the North, with the exception of the Boston area and Hudson Valley, where *quarter of* was the predominant form. In the Midland area, Kurath found that *quarter till* dominated, but he found Pennsylvania to be a complex region in which all three forms have some currency with *quarter till* being common in the center of the state but losing ground to *of* in the Philadelphia area and *of* and *to* in the west around Pittsburgh. In the greater part of the South, Kurath found that *quarter to* predominated, but later, LAGS found a slightly greater occurrence of quarter *till* than quarter *to* in the South.

The three primary quarter forms of telling time, *quarter to, quarter of,* and *quarter till*, all occur in the Colorado corpus, with *quarter to* predominating. The Meeker informant was the only one who reported using more than one form, as she reported using both *quarter to* and *quarter till*. The *quarter to* form occurs with the greatest frequency, but it shows no correlation with the social variables chosen for this study.

Only the *quarter of* form has a significant correlation with any of the social variables that were tested, that of sex of informant, as shown in Table 4.44 below:

Table 4.44: Correlation of *quarter of* with Sex of Informant

p > .039	SEX		
	Male	Female	Total
quarter of 0	10	7	17
1	0	4	4
Total	10	11	21

In the Colorado interviews selected for this study, males never used the *quarter of* form, while there was mixed usage of the form among the female informants.

a short distance (L24)

In the eastern states, Kurath found the most common way to express a short distance was to use *a little ways*, and he also found evidence of wide distribution of *a little piece* in the Midland area, especially on the Susquehanna and on the Delaware Bay, in northern West Virginia, and in western North Carolina.

In the Colorado data, the prompt for variants used to discuss traveling a short distance elicited several variants, including *short ways, not far, near, a skip and a jump, just a little jump* and *a ways*; the most frequently used variant was *(a) little way(s)* used by five informants. No statistical testing was conducted on this item, due to the small numbers associated with variant responses.

Overview of Eastern Words

There are several aspects of the overall view of the distribution of eastern lexical variants presented in this section that are worth discussing here. With respect to linguistic distribution, it is never the case that only one type of lexical variant is elicited in response to a prompt; rather, the number of responses ranged from two variants (as in the case of *bucket* and *pail)* to several. This finding is similar to observations made by other researchers who have examined lexical variation in the Atlas data of the eastern states, e.g. Johnson 1996, and the distribution of these variants is very much in line with the power law that Zipf used to describe linguistic variation (1949), as discussed in some detail in Kretzschmar and Tamasi (2001).

Although the dataset is much smaller in this study than that used in Kretzschmar and Tamasi's (2001) study of LAMSAS data, and consequently there are some differences in the overall distribution of items (e.g. the extremely high number of hapax legomena in the Kretzschmar and Tamasi study), there is an interesting similarity. In both studies, distributions of responses to a given headword generally follow one of two patterns: The first pattern is of a single variant serving as the primary variant for a given headword, followed by a number of low-frequency responses. Such is the case in the Colorado corpus for the headwords *midwife, best man, mantel, porch, faucet, pallet, lima bean, cottage cheese, rail fence, skunk, dragonfly, woodpecker, Merry Christmas, short distance, the wind picks up, sidewalk, shivaree*

and *wishbone.* There is also a second pattern in which there are two, and occasionally three or four, frequently-used variants for a given headword, typically followed by numerous low-frequency responses; in the Colorado corpus such cases include responses to the headwords *living room, kindling, closet, gutters, shades on rollers, bucket, frying pan, kerosene, corn on the cob, corn husks, green beans, curdled milk, gunny sack, sharpening stone, sawhorse, slop bucket, ram, chipmunk, owls, worms, sick_one's stomach, 10:45, creek, bastard, seesaw,* and *carry a heavy load.* The phenomenon of competing variants for these words counters popular notions that the forces of education and the mass media will eliminate linguistic variation and instead provide evidence that language variation is pervasive across semantic domains, a finding previously presented not only by Kretzschmar and Tamasi (2001), but also by Johnson (1996), as well as within a single semantic domain, as in Burkette (2001b).

With respect to the origin of these words in the eastern states, Table 4.45 provides a list of all variants that were used by at least three informants in the Colorado corpus and are variant forms that Kurath associated with the eastern speech areas North, South, and Midland (the last of which Kurath and others have sometimes divided into North Midland (NM) and South Midland (SM)). Each row of Table 4.45 is headed by the LAWS target word, the variant(s) that occurred in the corpus, the word's rank among possible variants for that headword in the Colorado corpus, the number of informants who used the term in the frequency column, and the regional characterizations of each variant presented in the tables in Chapter II of Kurath (1949):

Table 4.45: The Rank and Frequency of Lexical Variants in the Colorado Corpus and their Regional Association in Kurath (1949)

Headword	Variant	Rank	Freq	Northern	Midland	Southern
gutters	*gutters*	1	8	X		X
shades on rollers	*blinds*	2	5		X	
tin bucket	*bucket*	1	20			X
	pail	2	4	X		
kerosene	*kerosene*	2	7		SM	X
	coal oil	3	6		NM	
pallet	*pallet*	1	5		SM	X
corn on the cob	*roasting ears*	1	10		SM	X
husks	*husks*	1	13	X	X	
	shucks	2	5		SM	X
green beans	*string beans*	2	10	X	X	
freestone peach	*freestone*	1	8	X	X	
clingstone peach	*clings*	1	9	X	X	
curdled milk	*clabbered*	1	6		SM	X
sharpening stone	*whetstone*	2	4	X	X	infrequent
sawhorse	*sawbuck*	2	5		NM	
ram	*buck*	1	9	X	X	
chipmunk	*ground squirrel*	2	3		X	X
worms	*angleworm*	3	6	X		
	earthworm	5	4			X
seesaw	*seesaw*	2	4		X	X
wishbone	*wishbone*	1	14	X		
10:45	*quarter to*	1	10			X
		Totals =		**10**	**16**	**12**

As illustrated in Table 4.45, all three of the eastern speech areas are represented by ten or more variants in the Colorado data, with the Midland region having the highest number of variants at sixteen. While the number of Midland variants in this table suggests that the Midland region has had the strongest influence on Colorado speech – an argument presented by many previous researchers on Colorado English – the table also suggests that all the major eastern varieties of American English have had a strong influence on lexical variation in Colorado English. Furthermore, Table 4.45 does not corroborate the claims by earlier researchers that the dialect of the Northeast United States is in competition with the Midland (see for example Hankey 1960), but instead suggests that Southern American English has had a greater influence on Colorado English than has generally been noted.

Finally, an analysis of the distribution of eastern dialect words that were used in Colorado also reveals several statistical correlations between the use of specific variants in the corpus and the regional and social variables that were tested for this study, a finding that I will return later in this chapter.

Western Lexical Variants

Among words commonly found in the Colorado corpus with few or no antecedents in the eastern states, I selected 20 individual variants for analysis that have been discussed to some extent in the literature on Western American English. Many of these words are associated with the semantic domains of topography, vegetation, and animal life, domains for which early American settlers found plenty of forms with which they were unfamiliar. Among the sources they drew from to name these new things were non-English languages, especially Spanish, French, and various Native American languages, as well as English by compounding or by extending the meanings of older English words to account for new referents in the American West.

Since Atlas projects conducted in the West have not been published and, hence, are not accessible in the way that such eastern Atlas project as the *Linguistic Atlas of New England* (Kurath et al. 1939-43) and the *Linguistic Atlas of the Gulf States* (Pederson et al. 1986-92) are, several works using Atlas methodology that are easily accessible were used to compile the list of western variants examined in this study, including Hankey's study of Colorado (1960), Atwood's study of Texas (1962), and Bright's study of California and Nevada (1971). Carver (1987) was also useful in this regard as he uses a variety of sources on American English, including the Linguistic Atlas of the United States and Canada and the *Dictionary of American Regional English* (Cassidy et al. 1985-), to provide an overview of English spoken throughout the United States, including the American West.

beans (D4)

As discussed in the section on eastern lexical variants above, several varieties of beans grown in Colorado, and the words used to designate them, were brought to Colorado from the East. However, one variety of bean that has traditionally been associated with the West and was perhaps unfamiliar to the

early American settlers of Colorado was the pinto bean. Adopted from Spanish, *pinto* 'spotted, mottled' *beans* was used by nearly half of the Colorado informants for a spotted bean grown in several areas in Colorado.

In its compacted form, which includes *pinto bean(s)* and *pinto(s)*, *pinto (*)* was found to correlate significantly with origin of father, as shown in Table 4.46 below:

Table 4.46: Correlation of *pinto (*)* with Origin of Father

p < .025	ORIGIN OF FATHER			
	Colorado	Great Plains	Elsewhere	Total
pinto (*) 0	6	3	2	11
1	0	7	3	10
Total	6	10	5	21

No informant whose father was born in Colorado used forms of *pinto*, while its use among informants whose fathers came from the Great Plains or the eastern states was mixed.

barbecue (D28)

In the Colorado corpus, this Spanish word is used in a variety of ways, including as a designate for a type of food, as a way of preparing food, as a type of cooking unit used to prepare food outside, or as a get-together that includes cooking. Besides its use as both a noun and a verb, the word also occurs in several compound forms in the corpus, including *barbecue pit* and *pit barbecue.* No statistical significance in variants for this item was found in the corpus.

corral (E2)

The Spanish word *corral* is not mentioned in Kurath's work in the eastern states, where *barnyard* or *barnlot* were the primary variants recorded for a pen for animals near the barn. However, *corral* can be found in the LAGS records, where it is used primarily for 'barnyard' but is also used for *stable, milk gap,* and *hogpen*. Of the 42 uses of *corral* 'barnyard' in the LAGS records, nearly half (n=19) were used by Texas informants.

The common term in Colorado for a barnyard or a pen for a variety of animals associated with the ranch is *corral*, which was used by all but one informant. The word occurs in several noun-noun compounds in the corpus, including *picket corral, pole corral, sheep corral,* and *corral fence*, and it is used as a verb in several interviews. Since no variants competed with *corral*, no statistical testing was conducted.

lariat (E11)

While many Spanish borrowings are used in everyday English by the Colorado informants, or are at least familiar to them, the semantic boundaries dividing these words and related words is often fluid, varying from speaker to speaker, sometimes even among related speakers. The words *lariat* and *lasso*, for instance, are often cited as synonymous. In his dictionary of western terms, Clark (1996: 147) uses the wording "a rope made of hemp, horsehair, or rawhide used to catch range animals" in his definitions of both terms and reports that both referents have a loop at one end. Of the 14 informants who used both *lariat* and *lasso* in the Colorado interviews, nine reported that the two words were indeed interchangeable. However, three of the remaining five informants said the words *lasso* and *lariat* were not synonymous: Two informants reported that *lasso* was strictly used as a verb and *lariat* a noun, and one informant reported that *lasso* referred only to the noose of the rope. In the case of *lasso,* two informants reported that they used the word only as a verb form.

No statistical correlates with the use of this word and social variables were found, but there was some field worker effect for the variant *lariat rope*, as both Newton and Preston elicited this item but I did not. There was also some statistical significance found in the differences in how the word is pronounced, a finding I will return to later in the next chapter.

whip (E15)

A number of variants were elicited from Colorado informants with respect to a piece of leather used for driving animals, and the use of these variants depended on the type of animal it was being used

with, as well as the length of the instrument that was being used. *Whip* is the highest-ranking variant (15), followed by *quirt* (9), which is often used to denote a smaller instrument than *whip.*

Several significant correlations were discovered between choices of variant terms for whips and social variables. The age of the informant had a significant correlation with those informants using the term *whip*, as illustrated in the following table:

Table 4.47: Correlation of *whip* with Age of Informant

p < .006	AGE			
	Oldest	Middle	Youngest	Total
whip 0	0	5	5	10
1	8	3	0	11
Total	8	8	5	21

As shown, *whip* was elicited from all the informants in the oldest age group and none of the youngest age group, while usage was mixed in the middle group.

When I collapsed two low-frequency items associated with whips that had no significant correlations when tested alone – *blacksnake* and *bullwhip* – a strong correlation between sex of informant and choice of these informants, as shown below:

Table 4.48: Correlation of *blacksnake* and *bullwhip* with Sex of Informant

p > .009	SEX		
	Male	Female	Total
blacksnake/bullwhip 0	5	11	17
1	5	0	4
Total	10	11	21

No females used either variant, while half the male informants did.

bronco (F17)

The word *bronco* is well known among the Colorado informants, if only as it is the team name of the beloved local franchise of the National Football League – the Denver Broncos. The word derives

from the Spanish word for unbroken horse. In addition to using the name for such an animal, a number of informants use the term *bronc(o)buster*.

Several informants also use the term *mustang* for such an animal, although such a use apparently shows that some semantic change has occurred since being adopted by English from Spanish *mesteño* 'stray animal.' When tested, the only variable that proved significant was field worker.

burro (F21)

Because of their value as pack animals during the early mining days of Colorado, *burros* are well known among by the Colorado informants. The word also occurs in a number of phrases, including *jack burro, pack burro,* as well as *burro polo.* Due to the absence of competing forms for this item, no statistical analysis was performed.

orphan animals (F29)

A number of terms were reported as terminology used for animals raised on the ranch or farm that were orphaned, presumably during childbirth, including *orphan, orphan calf, bum,* and *penco.* Several of these choices have statistically significant correlations with the social variables of the interview. For instance, the use of *orphan* and grid row was found to be statistically correlated, as illustrated in the table below:

Table 4.49: Correlation of *orphan* with Grid Row of Informant

p < .014		GRID ROW				
		H	I	J	K	Total
orphan	0	5	5	3	5	18
	1	0	0	3	0	3
Total		5	5	6	5	21

This table highlights the mixed use of *orphan* in grid row J with its absence in other grid rows.

The use of the Spanish variant *penco* has a southern distribution, as illustrated in its significant correlation with grid row, as shown in the following table:

Table 4.50: Correlation of *penco* with Grid Row of Informant

p < .014		GRID ROW				
		H	I	J	K	Total
penco	0	5	5	6	2	18
	1	0	0	0	3	3
Total		5	5	6	5	21

This distribution highlights the characterization of this word as a Spanish variant that has historically been more common in southern Colorado than elsewhere (see, e.g. Kimmerle 1952, Hankey 1960).

prairie dog (G2)

A small animal widely reported in the Colorado corpus is the *prairie dog*, which most informants reported was viewed as a nuisance animal because horses and cattle often broke their legs in holes that were burrowed by the animal. Use of the variant *prairie dog* correlated with the region of the informant, as shown in the table below:

Table 4.51: Correlation of *prairie dog(s)* with Region of Informant

p < .016		REGION			
		Plains	Mountains	Southwest	Total
prairie dog(s)	0	0	4	6	10
	1	5	5	1	11
Total		5	9	7	21

The use of the term *prairie dogs* is significantly correlated with informants of the plains region, while usage of term is mixed in the mountain region and nearly absent among southwest informants.

mountain animals (G10)

As an open-ended question, the prompt for mountain animals elicited a wide range of words, such as *bear, deer, snakes, elk*, and others. One term that was elicited by an open-ended inquiry into the kinds of animals associated with the Rocky Mountains were variants concerning *mountain lion*, of which some

informants used the shortened form *lion.* There was a significant correlation between the term *mountain lion* and the age of the informant, as illustrated in the table below:

Table 4.52: Correlation of *mountain lion* with Age of Informant

p < .047	AGE			
	Oldest	Middle	Youngest	Total
mountain lion 0	7	2	3	12
1	1	6	2	9
Total	8	8	5	21

Only one of the oldest informants and a minority of youngest informants used the term, while a majority of the middle age informants used it.

plains animals (G12)

Kurath did not mention the term *coyote* in his work, although the word was recorded several times in the LAGS project. Colorado informants mentioned several animals that they associated with the Great Plains region of the state, and one of these was the varmint known as the *coyote*. Pronounced [kaiot] by all of the Colorado informants except one, there were no significant correlates between the use of this word and social variable in the corpus, presumably due to the large number of people who used the term.

snakes (G22)

One LAWS prompt that elicited a variety of responses was an open-ended question concerning the names for different types of snakes in the area. Among these variants are several names for different types of rattlesnakes; however, the variant *bull snake* is a variant strongly associated with the West (Carver 1987: 211) and the reason why snakes are dealt with in this part of the chapter. In the Colorado corpus, mention of the *bull snake* is third only to *rattlesnake(s)* and *water snake(s)*. Among these three words, I only tested the variant *bull snake* for correlation with extralinguistic variables. Use of the variant correlated with the region of informant, as shown below:

Table 4.53: Correlation of *bull snake(s)* with Region of Informant

p < .048	REGION			
	Plains	Mountains	Southwest	Total
bull snake(s) 0	0	5	5	10
1	5	4	2	11
Total	5	9	7	21

This table shows that informants in the plains region were more apt to respond with the variant than were informants in other regions, especially those in southwestern Colorado.

chinook (H18)

Since prompts for the target headword *chinook* were often seeking semantic clarification and field workers used the word in the prompt, as in "Have you ever heard of a chinook?" many responses were doubtful, although informants often used the phrase *chinook wind* in their response to the name of a warm wind in the winter. No correlation was found between the use of *chinook* or *chinook winds* and the social variables that were tested in this study.

blue norther (H19)

The typical elicitation for this item was to ask informants for the name of a wind that brings cold weather with it. While several informants mentioned such variants as *norther or northerner*, several also mentioned that the phenomenon of a cold north wind would aptly be named *blizzard*. No statistical significance was found between the choice of variants used to in association with this headword and the social variables that were tested.

local trees (H23)

Differences between the topography and climate of Colorado and other places mean there are differences between the local trees that grow naturally in the state and those that grow elsewhere and names for these trees differ as well. Field workers typically elicited variants for local trees with an open-ended question and then followed with more specific questions. Perhaps the tree most identifiable with

the state of Colorado that was addressed in these questions was the aspen, which was found to have several variants used for it, as shown in Appendix D.

Among these variants, the word *aspen* was significantly correlated with education, as seen in the table below:

Table 4.54: Correlation of *aspen* with Education Level of Informant

p < .011		EDUCATION			
		Lowest	Middle	Highest	Total
aspen	0	7	4	1	12
	1	0	4	5	9
Total		7	8	6	21

No one in the lowest education group used the bare form of the term *aspen*, but instead used *aspen* only in a shortened form and/or as part of a compound. On the other hand, usage was mixed among informants in the middle group and the variant was used often by informants in the highest education group.

Use of the variant *quaking asp* was correlated with father, as shown in the table below:

Table 4.55: Correlation of *quaking asp* with Origin of Father

p < .003		ORIGIN OF FATHER			
		Colorado	Great Plains	Elsewhere	Total
quaking asp	0	2	10	5	16
	1	4	0	0	5
Total		6	10	5	21

Only informants whose fathers were from Colorado used the term *quaking asp.*

wet weather creek (I3)

A prompt for streams that only run during wet weather elicited a variety of responses from the Colorado informants, although the most common response was no response at all, as many informants struggled with finding a general term for creeks that only ran during wet weather. In fact, several

informants responded that a general characteristic of area creeks was that they only ran during wet weather and typically went dry during the summer.

Nevertheless, several variants for wet-weather creeks were used in the interviews, and there are some interesting intersections between general terms for these bodies of water and specific examples of proper nouns used to designate such waterways, as illustrated by the names *Rock Creek, Mud Creek,* and *Sand Creek.*

flat-topped hill (I8)

The Colorado corpus includes two terms for flat-topped hills that were borrowed from other languages: *Butte* from French and *mesa* from Spanish. There is some dispute among informants over the semantic range of the two with some informants reporting they were the same thing, others saying they referred to different topographical features, and still others reporting they were only familiar with one of the terms and not the other. *Mesa* was the preferred variant among the informants and *butte* was often only directly elicited by name and was consequently flagged as doubtful.

Among the social variables tested, education of informant was found to be correlated with *mesa*, as shown in the table below:

Table 4.56: Correlation of *mesa* with Education of Informant

p < .047		EDUCATION			
		Lowest	Middle	Highest	Total
mesa	0	5	1	4	10
	1	2	7	2	11
Total		7	8	6	21

Nearly all informants in the middle group used the term *mesa*, while the use by informants in other categories was mixed.

The variant *mesa* also showed a correlation with age, as can be seen in the table shown below:

Table 4.57: Correlation of *mesa* with Age of Informant

p < .009	AGE			
	Oldest	Middle	Youngest	Total
mesa 0	7	3	0	10
1	1	5	5	11
Total	8	8	5	21

All informants in the youngest age group use the term, but nearly none of the informants in the oldest group and results are nearly evenly mixed in the middle group.

ditch along upgraded road (I12)

With respect to the general term for a ditch that is dug out along an upgraded road, the corpus provides several examples related to the idea of borrowing dirt from one place and putting it in another and then shortening the name, such as *bar pit, barrow ditch,* and *barrow pit.* None of the variants for this item and social variables were found to be correlated.

roadway through the mountain (I19)

In Colorado, the preferred term for a roadway through the mountains is *pass*, which also occurs in the compound *mountain pass* (n=7) and *low pass* (n=1). The term pass also occurs in the proper noun *Pass Road*. While *pass* is the preferred term for this item, there is also clearly a great deal of variation in this regard, much like other items in the Colorado corpus, as shown in the table below:

Table 4.58: Lexical Variants Associated with the Headword *roadway through a mountain*

I19 Roadway through a mountain

pass(es)	7
NR	5
gap(s)	2
mountain pass(es)	2
tunnel	2
county road	1
county-maintained road	1
cuts	1
dirt road	1
gap road	1
Highway 70	1
little passes	1
roadways	1
trails	1

I21	pass	I suppose they use gap. I don't know. Or ___.
I22	pass	might be a ___
J18	trails	not much more than ___ you might say
J22	NR	I haven't been in the mountains enough to know those things
K16	gaps	some of them are ___
K16	pass	a ___ includes the gaps
K18	Gap	Wagon Wheel ___ up here
K22	NR	we don't have any mountains so

Table 4.59 presents numerous variants for this target, including the simple form *pass* and the compound *mountain pass*, but no statistical correlation was found between any of the variants and social variables.

Overview of Western Variants

As in the case of the Eastern lexical items examined earlier in this chapter, an examination of the distribution of Western variants in the Colorado corpus also shows that variation is the rule for responses to nearly all the Western headwords in the corpus, which again is similar to findings on the Eastern Atlas data presented by Johnson (1996), Kretzschmar and Tamasi (2001), and others. The only headword for which there seems to be little variation is *chinook* (H18), but even within that category there is some competition between the bare form *chinook* (n=15) and the compound form *chinook wind* (n=5). *Pinto (beans), coyotes,* and *bull snakes* show relatively little variation in the corpus, but it must be noted that

these are not individual target items; rather, they occur as variants of the open-ended headwords *beans* (D4)*, plains animals* (G12), and *snakes* (G22), respectively. Finer-grained investigation into these items might well reveal variants for these items that this study did not elicit.

Of the headwords that did elicit a great number of variants, there is a wide range of characterizations for each of these targets. As shown above, for instance, the target item *roadway through a mountain* elicited numerous variants, including its most-frequent variant, *pass*, which is considered a western variant, but the target also elicited eastern words like *gap.* Open-ended prompts like one inquiring into *local trees* (H23) proved interesting not only because of the great variety of words they elicit but also for their elicitation of subtly different variants that show how creative people are with language, as illustrated in the table of variants for aspen trees:

Table 4.59: Lexical Variants for Aspen Associated with the Headword *local trees*

H23	**Local trees (aspen)**
aspen(s)	9
quaking aspen	7
NR	6
quaking asp	4
quakies	2
quakers	1
quakie aspen	1
quaking	1
quivering	1

There are also those targets for which there is one general term used by nearly all informants, but for which many lesser-used variants can also be found in the corpus, as shown in the variants associated with the target *corral* presented in the table below:

Table 4.60: Lexical Variants Associated with the Headword *corral*

E2	**Corral**
corral(s)	20
corral (verb)	3
corral fence(s)	2
corralled (verb)	2
horse corrals	2
barnyard	1
cages	1
catching pen	1
cattle corral	1
Picket Corral	1
picket corral	1
pole corrals	1
round corral	1
sheep corrals	1
sheep pens	1
sheepmen's corral	1

Aside from a strong primary variant – *corral* in this case – lexical variants associated with *corral* include compounds based on *corral*, one proper noun (*Picket Corral*), and variants that are linguistically very different than the primary variant (e.g. *catching pen*).

Perhaps one of the most obvious characteristics of the western set of variants in this study is the heavy distribution of obvious borrowings from a language other than English, namely Spanish. Four of the headwords used for this part of the study are Spanish in origin – *bronco, burro, barbecue,* and *lariat* – and several variants of headwords in this section also originated in the Spanish language, e.g. *penco, quirt, pinto, mustang, lasso,* and *arroyo*. A number of other words of Spanish origin occur in the corpus that are not necessarily affiliated with specific targets, including *adobe, angora chaps, hacienda, hombre, gringo,* and *placer mining*. The frequency of Spanish words, both as primary variants and as low-frequency items, and the manner in which these words are used is one of the characteristics not only differentiating eastern and western lexical variants in this study, but in differentiating Colorado English, as well as Western American English as a whole, from other varieties of English.

With their incorporation into the English language, Spanish words have often undergone change in a variety of ways. To begin, pronunciation and morphology of Spanish words have undergone change

as they have become Anglicized. For example, one of the most common Spanish words used in the corpus, but one that is not explicitly elicited is *ranch,* a word not unknown to other varieties of English, but one that denotes the Spanish style of raising livestock that is typically associated with the western United States. In its pronunciation by speakers of English, *ranch* lost the masculine ending *–o* that it has in Spanish, as the morpheme was deemed unnecessary by English speakers.

As many Spanish borrowings lost their own system of affixes and have adopted the relatively simple morphology of English, many now submit readily to some of the productive morphological processes of English. For instance, many Spanish words have been compounded with English words since being adopted by English to create compound nouns, as in *sheep ranch, ranch hand, ranch house, flat ranch, sheep corral, pole corral,* and *lariat rope.*

Although there are some exceptions, e.g. the adjectives *loco* 'insane', *macho* 'manly', and *pinto* 'painted, mottled', most Spanish words that are used in the Colorado corpus were borrowed as nouns, as is often the case in lexical borrowing; however, the loss of Spanish morphology has enabled these words to become candidates for conversion, or functional shift, a process by which a word is used as more than one part of speech without an overt change in morphology, typically in creating verbs out of nouns, as was noted frequently for two targets of the study – *barbecue* and *corral* – as well as the Spanish loanwords *ranch, lasso* and *placer* 'deposit, shoal', as shown in (1):

(1) a. They farmed and *ranched* all their life… (Springfield)
b. …my dad was *ranching* here with his father. (Walden)
c. …at night they would *corral* five-thousand head of sheep… (Beulah)
d. …and they *barbecue* a beef… (Buena Vista)
e. You *lasso* somebody when you throw a lariat around them… (Leadville)
f. …they *placer* along the creek. (Black Hawk)

Although certainly not unique to the English language, this process is highly productive in English and not Spanish, so that applying the process to Spanish words in this way serves to further Anglicize them.

Despite the fact that many of the Spanish words targeted in this study have been Anglicized in various ways, there are some Spanish terms that are little known to Colorado informants (and one might

infer from the lack of data about these terms in other Atlas project that they are relatively unknown in other varieties of English as well) and are fairly restricted in their distribution. Such is the case of *penco*, which denotes an orphaned lamb in the Colorado corpus, but may denote an orphaned domestic animal of any kind among other speakers. The regional distribution for this variant is restricted in the Colorado corpus to southern Colorado, a distribution that has apparently not changed much since Kimmerle (1952) and Hankey (1960) and may indicate the lasting influence in southern Colorado of the Spanish founder population. (For more on the influence of founder populations on language, see Mufwene (2001) with respect to creoles and Bailey (1997) with respect to Southern American English).

Although many of the Spanish words discussed here are now well-known in eastern varieties of English, e.g. *barbecue, corral, ranch*, having been adopted from Western American English into both literal and metaphorical uses, it remains to be seen how many other variants will also be adopted and how many infrequent Spanish variants will ultimately lose currency in Western American English.

East Meets West

In making the decision to divide the Colorado lexical data into eastern and western variants, I had hypothesized that the items in the LAWS interviews that were prototypically western, e.g. *corral, lariat, penco,* would not be subject to the same degree of variation, i.e. would not have the high number of variants, that objects that were more familiar to easterners, such as *shades, gutters, cows,* would have. The reasoning behind this was that western items would not have the pool of competing variants from the eastern dialects of English that eastern items would have.

This notion was only partially borne out by the data. If a definition of lexical competition is based on the idea that competing variants will consist of a primary variant that is used, say, at least, eight times, and that to be in competition a second variant must be used at least half the times that a primary variant is used, the result is that 13 out of 50 headwords (26%) have competing variants in the eastern dataset. In the western set, however, there are five cases of competition out of 20 (25%), which are comparable figures. Two of the cases of competition in the western set are problematic, however,

because they are in response to open-ended questions (*snakes, local trees*) and the competing variants do not necessarily refer to the same thing. Two of the three remaining are problematic as well (*lariat/lasso; whip/quirt*), in that many informants said that *lasso* referred to part of the *lariat* (the noose of it) and that a *quirt* was a small *whip*. On the other hand, in reference to eastern items, the informants often said the words referred to the same things, e.g. *kerosene/coal oil, roasting ears/corn on the cob; gunny sacks/burlap bags*. Further research, perhaps along the lines of Burkette (2001b), will need to be done in this area to come to a better understanding of similarities and differences between the distribution of eastern and western lexical variants.

Sociolinguistic Lexical Variation

As part of the examination on lexical variation in the Colorado corpus, I applied inferential statistics to both eastern and western lexical variants and various social characteristics that dialectologists have often found to have some bearing on language variation. In the discussion of headwords, I presented the results of those tests in which statistically significant correlations were found between specific lexical variants and social characteristics. Such an analysis is instructive in showing how the use of specific lexical variants is often correlated with specific social groups, but it gives only an impression of the relative strength or weakness of these social characteristics with respect to lexical variation.

In this section, I examine the influence social characteristics have on lexical variation by looking at the number of lexical variants correlated with each social characteristic that was tested. These correlations are presented in Table 4.61 below:

Table 4.61: Table of Significant Correlations between Lexical Variants and Social Variables

Social Variables	**Lexical Variants**							
ge	closet	freestone (peach) free (peach)	Alberta peach	whetstone	whip	mountain lion	mesa	gunny sack
Region	husk shuck	corn crib(bing)	grinder	(*) owl	fish worm	prairie dog	bull snake	
Father	free (peach)	ram	pinto (*)	seesaw	quaking asp	bellyache		
Sex	string bean	burlap bag	hoot owl	quarter of	blacksnake/ bullwhip			
Grid Row	stream	penco orphan	haul (conv.)					
Education	(*) shade	aspen	mesa					
Mother	kindling	night crawler						
Birth Year	on the cob	stream						

As shown in this table, all the regional/social variables that were investigated in this study have significant correlations with at least two lexical variants. Of all the extralinguistic variables that were tested, age of the informant had the greatest bearing on the lexicon (9 lexical correlates), followed by region (n=8), origin of father (n=6), sex (n=5), grid row (n=4), education (n=3), origin of mother (n=2), and birth year (n=2).

The highest-ranked social variable, age of informant, significantly correlated with nine items from several semantic domains. The significance of age with respect to these variants speaks to the phenomenon of lexical change through time, even when the time periods under study are relatively small. All three logical patterns of distribution are attested in the data, the first two of which are 1) a decline in usage from oldest to youngest informants, suggesting a loss in usage of a lexical variant (*whip*), and 2) an incline in usage from oldest to youngest informant, suggesting a gain in usage of a lexical variant (*closet; free (peach); Alberta peach; mesa*). Finally, there is one category in which the oldest and youngest informants are more similar than the middle group; such is the distributional pattern of three of the nine lexical variants, of which two variants were used almost exclusively by the middle group (*whetstone,*

mountain lion) and one was used relatively infrequently by the middle group compared to the other two groups (*gunny sack)*. That variants of each of three types occur suggests that lexical change cannot be accounted solely by simple linear models that chart the rise and/or fall of a variant over a period of time, but must leave open the possibility of a more cyclical pattern in the use of lexical variants, such that the use of a variant may decrease over time, before there is an increase in use as the variant is recycled by later generations of speakers.

According to the number of lexical variants correlated with it, region also plays an important part in lexical variation in the Colorado corpus, as it correlated with eight variants. Again, several semantic domains are represented as having statistical correlation with region, but variants for animals found in the wild represent half of the variants associated with region, suggesting that the types of wildlife that are of concern to people of that region play a role in determining what lexical variants they use. Among the three regions delineated for this study, there are three possible relationships they might have with respect to lexical variation, aside from all the regions using the term in equal numbers, and all are attested in the data: 1) plains and mountains pattern more alike in the use or nonuse of a specific lexical variant (*prairie dog; grinder*); 2) mountains and southwest are more alike in the use or nonuse of a specific lexical variant (*husks/shucks; corn crib(bing); fishworm; bull snake*); and 3) southwest and plains are more alike in their use or nonuse of a specific lexical variant (*owls*). Although there is evidence in the data of a complex situation of alliances among these regions, the number of lexical variants associated with each region suggests that the plains and southwest are most dissimilar among these regions and that the mountains and southwest are most similar.

The social variable with the next highest number of lexical variants associated with it was the origin of the informant's father with six variants. Three values were assigned to this social variable, and as in the previous two categories, three logical alliances were possible for statistical significance to exist: 1) informants with Colorado-born fathers and informants with Great Plains-born fathers to be more alike in their use or nonuse of a specific lexical variants; 2) informants with Great Plains-born fathers and fathers born elsewhere (or unknown) to be more alike; and 3) fathers born elsewhere (or unknown) and

Colorado-born fathers to be more alike. Again, lexical evidence confirms the possibility of all three alliances with *seesaw* evidence of number one; *free (peach), pinto (beans),* and *quaking asp* evidence of number two; and *ram* and *bull snake* of number three. Interestingly, those informants whose fathers were born in Colorado and those whose fathers were born in the Great Plains are most dissimilar according to these numbers and informants whose fathers were born in the Great Plains or and those with fathers born elsewhere being most alike. This suggests some importance in identification with Colorado among those informants whose fathers were born in Colorado.

With respect to sex, there were two logical possibilities for statistical significance to exist for any variant: 1) men used a term significantly more than women, or 2) women used a term significantly more than men. The five lexical variants that had significant statistical correlations with the sex of the informant were of both categories. For the first category, the variants *burlap bag* and *bullwhip/blacksnake* apply, while the variants *string bean*, *hoot owls* and *quarter of* apply to number two. While one might create any of a number of ad hoc reasons for these variants to be associated with one or the other of the sexes, I will refrain from doing so here for the most part, except to submit that the words *bullwhip/blacksnake* were tools that may have been used more on the ranch or farm by men than women.

The extralinguistic variable of grid row was statistically correlated with four lexical variants in the corpus: *stream, penco/orphan,* and *haul* (conversational). The distribution of lexical variants among grid rows was probably the most chaotic, as the distribution of the word *stream* was most similar in grid rows H and J, while distribution in the grid rows I and K was more alike. As in the case of *stream*, the distribution of the word *haul* is also more alike in grid rows that did not touch one another than those that did, as informants in grid rows H and K used it but not informants in grid rows I and J. Each of the other two variants that are significantly correlated with grid row is used only by informants in a single grid row – *orphan* was used by informants in grid row K, while *penco* was used by informants in grid row K. While it makes sense for Spanish *penco* to be associated with the southernmost grid row in Colorado, there is no apparent reason for the other words to be correlated with the grid rows that they are. It should be noted that grid rows were not intended to be totally representative of the north-south continuum in the

state; rather, a number of historical, as well as geographical, reasons went into the choice of counties that were included in each grid row. However, the problem of correlating variants with grid rows illustrates the difficulty of examining the distribution of linguistic items in the states in the same manner as was done with the Atlas work in the eastern states, as in, e.g. Kurath 1949. Both Hankey (1960) and Kimmerle, McDavid and McDavid (1951) tried to apply east-west lines to the distribution of linguistic items in Colorado in their work and were, for the most part, unsuccessful. Although both speculated that such lines might emerge in later work, the current study fails to find clear east-west lines either.

The social variable of education level correlated with three lexical variants: *(*) shade, aspen*, and *mesa.* The first two of these variants follow the same general distribution pattern: They were used infrequently by informants at the lowest education level and relatively frequently with the middle and highest groups, which suggests that informants with higher levels of education used variants that the lowest group did not use, perhaps because better-educated informants had access to variants that the lowest group did not. However, *mesa* provided an example of a word used by a majority of the middle informants that was not used for the most part by informants in either the lowest or highest groups, thus providing additional evidence that the correlation of lexical, and perhaps all linguistic, variants with social variables is a complex issue devoid of easy answers.

The first of two social variables that had only two linguistic variants associated with it, the origin of an informant's mother was correlated with the use of the variants *kindling* and *night crawlers*. As in the case of the father's origin discussed above, three values were attached to origin of mother: Colorado, Great Plains, and elsewhere (or unknown). In the Colorado corpus, those informants whose mothers were born in Colorado or elsewhere used the variant *kindling*, while those from the Great Plains did not use the term. Those informants whose mother was born in Colorado used the term *night crawler*, while the others used it infrequently. As in the analysis of the data concerning the origin of the father of the informant, results of statistical testing suggest that informants whose mothers were born in Colorado have some identification with the state.

Finally, the social variable year of birth, and its values earliest, middle, and latest, significantly correlated with the lexical variants *on the cob* and *stream.* With respect to the former variant, only the earliest group used it; with respect to the latter, the latest group did not use it, while the other two groups did. While it is difficult to form much of a characterization of this data with only two variants, it is worth noting that this social variable was incorporated into the design of this study to offset the 14-year span over which the interviews took place. That there are so few significant correlates associated with this social variable suggests that year of birth does not have a great influence on lexical variation, which seems to be in contradiction with the finding that age had the greatest number of lexical correlates. Year of birth testing suggests that the phenomenon of age-grading, that is, the tendency for people of a certain age to sound like other people of their own age, despite living at different times, might be at work in making age such an important factor in lexical variation.

Relationship to Earlier Work in Colorado

In his earlier work on Colorado English, which largely focused on lexical variation in the state, Hankey (1960: 127) found several forms to be more indicative of older speech and speculated that they would one day be either obsolete or would be considered old-fashioned by most speakers. There are indeed several words in Hankey's list of lexical items (1960: 126-27) that do not occur in the Colorado corpus despite being potential variants for LAWS headwords, including *masculine cow, jake* 'rustic', *serenade* 'chivaree', and *sitting room***.** The presence of these variants in the earlier Atlas works and their absence in the Colorado corpus provide some evidence on the effect of time on the Colorado lexicon.

Hankey's prediction that this entire set of items would be lost or become old-fashioned is oversimplified, as there are several variants in Hankey's list of older variants that are not only found in the current data, but serve as primary variants or compete with primary variants, including *string beans, buck, roasting ears, corn shucks, fish worm, free peach* and *hoot owl.* This suggests that older forms do not simply drop out of the lexicon or become quaint, old-fashioned terms; rather, some survive as potential variants for later speakers in an area.

Overview of Lexical Variation in the Colorado Corpus

Many people have speculated that local dialects in the United States would eventually disappear due to the effects of mobility, mandatory education, and mass media. Such an idea seems to be at least partially based on the notion that there is a Standard American English, and that as it becomes available to all speakers of the language, no matter how far out of the mainstream they might live, it will be adopted as their own at the expense of any local variety they might speak. This idea has not been borne out by empirical study of language variation, such as that done by Labov, who has actually found that "local accents…are more different from each other than at any time in the past" (Labov and Ash 1997: 508). In her study on language variation in the southeastern United States, Johnson (1996: 92) maintains that "it does not seem likely that linguistic variation will vanish in favor of a homogenous American English, or even Southern English," and with respect to the lexicon, she adds that "[t]he number of lexical choices available seems to be growing; such growth allows room for tremendous variation" (1996: 92).

In many ways, an analysis of lexical variation in the Colorado corpus also supports the idea that linguistic variation, at least with respect to the lexicon, is a fact of language use, even at a time of unprecedented mobility and mass communication. For almost every lexical target item that was analyzed in this study, more than one variant was used, and for some targets, several variants were found in the corpus. And although many of the variants elicited for a given item are only used once, or in low-frequency at any rate, several targets have competing items (e.g. *corn on the cob* and *roasting ears)* that can be traced back to earlier use in the eastern United States.

Furthermore, many of these variants have statistically significant correlates with social variables, suggesting that lexical variation in the Colorado corpus is not a random product, but is influenced by the social characteristics of the people who use them. Simply put, to some degree speakers choose lexical variants based on the social categories they are associated and identify with. Such categories include age, region, and sex.

The finding of pervasive lexical variation is of course not confined to the methods or the targets of the LAWS project. Lexical variation is all around us, in the terms that we use for in various situations

to words that we use for an object used in conjunction with the A drive of a computer to store files (and is quickly becoming a relic itself), viz., the *floppy disk,* but also known as a *diskette, three-and-a-quarter-inch (disk)*, etc. Lexical variation is as constant as change in culture, and variants are constantly being added to the lexicon or resurfacing in importance, giving speakers a variety of items from which to choose.

CHAPTER 5

PHONETIC VARIATION IN THE COLORADO CORPUS

In order to arrive at a better understanding of the pronunciation of Colorado English, this chapter provides: 1) an examination of pronunciation through the creation of vowel synopses for 21 Colorado informants; 2) an analysis of the social and regional distribution of select phonetic features within the Colorado corpus using inferential statistics; and 3) a comparison of some of the phonetic evidence collected in Colorado with data collected earlier in the eastern United States and in Colorado. Finally, it compares the results of these efforts with characterizations of Western American English pronunciation depicted by other scholars.

Vowel Synopses

In his plan for a Linguistic Atlas of the Western States, Pederson (1990: 12) calls for the speech of each informant in the project to be represented by a phonetic summary, or idiolect synopses, presenting the pronunciation of 14 stressed vowels in five phonetic environments and 24 consonants in three phonetic environments. The attainment of this goal will provide a wide range of data on pronunciation in Western American English, as well as facilitate the cataloging and distribution of LAWS phonetic data; however, this dissertation is more modest in its aims and, with respect to phonetics, focuses on the vowels used by informants, particularly in words that have widely been regarded as shibboleths in American English. This work will create the opportunity for analysis of a subset of phones that have typically been the focus of dialectology, while at the same time making a great stride toward the creation of idiolect synopses that Pederson proposed, a task that will be completed with future work.

The vowel synopses created for this study were based on the model presented in Kurath and McDavid (1961) in their presentation of stressed vowel data for 157 cultured informants in 136 communities in the eastern states, and were later modified for work in El Paso, Texas, by Hamilton-

Brehm (2004). It began with the selection of 47 words designed to show the full range of vowel sounds in American English, while at the same time going beyond the pronunciations of individual words to present the pronunciation of classes of words. Most of the words selected for this analysis were targets of the LAWS questionnaire and were therefore used by all or nearly all of the informants in the study. In those cases in which an informant did not use the target word, I identified a word that was phonetically similar to the target item that the informant did use. For instance, the word *twice* was selected as a target item to show the pronunciation of the diphthong [ai], as it was in the original Kurath and McDavid synopses and it occurred relatively frequently in the corpus. However, it was not a LAWS target, so it did not occur in all the interviews, and in those that it did not, the words *nice* or *ice* were used, based on their sharing the same phonetic ending as the word *twice*. When a replacement word was used in the synopses, the word was put in parentheses and placed in the space in which the word that it replaced usually would be. When no suitable replacement could be found in an interview, the target word was asterisked and no vowel was postulated for that word in the worksheet. The complete set of 21 vowel synopses is displayed in Appendix E.

One of the values of a vowel synopsis as a tool is simply to present a large amount of data on the pronunciation of an individual speaker by which one can deduce much about the phonetic inventory of an individual. One may, for instance, examine whether the phonetic inventory of an informant included a raised vowel, and if so, whether the raised vowel was used in a specific phonetic environment or whether it was part of a greater trend of raised vowels in the idiolect of that speaker. Similarly, vowel synopses enable one to examine the distribution of the variants [ɑ] and [ɔ] in the speech of an individual, as the distribution of these sounds is a major issue in the phonetics of Colorado English, as well as American English in general. Examining the vowel synopsis of informant I21 with respect to the low back vowel, for instance, reveals this informant never used the vowel [ɑ] in any of the words elicited for this synopses; rather, the stressed vowel of all words for which many informants use the low back vowel was

realized as [ɔ] in this informant's speech. Other vowel synopses reveal a more complex distribution with respect to these vowels with a great deal of interplay that will be discussed later in this chapter.

The structure of the vowel synopses means they can be used relatively easily as a tool for comparing the phonetic inventories of either all or a subset of informants, as well as to provide a visual comparison of the phonetic realization of a specific word among a range of informants. Additionally, because they are based on models used in previous dialectal research, the vowel synopses enable researchers to make comparisons between various projects relatively easily.

Although there are several transcription practices from which to choose, including the Automatic Book Code (ABC) devised by Pederson (1987) that Pederson (1990) proposes as the transcription practice for LAWS records, the pronunciations of the vowels of each informant in this dissertation were represented in broad phonetic transcription using the International Phonetic Alphabet (I.P.A.). The decision to use this method was based on the observation that the sources that were to be used as comparisons with the Colorado data were written in I.P.A., as well as my greater familiarity with the I.P.A. compared to other transcription practices, including the ABC practice. Future LAWS work will implement the Automatic Book Code.

An inventory of all the forms included in the complete set of vowel synopses shows relative stability and no evidence of variation at the broad impressionistic level that was applied here in nearly 50% (23/47) of the target forms, e.g. *two, crib,* and *glass*. Several forms included in the vowel synopses did have variation with respect to vowel raising, particularly *keg, pull,* and *wood*; however, of these only *keg* will be discussed in this analysis, as it is the only one that was treated in Kurath and McDavid (1961).

As in the lexical analysis, each informant could use more than one item, in this case several pronunciations of a word. For instance, the Saguache informant used all three of the attested pronunciations of *poor* that are found in the corpus. Furthermore, several informants varied in their use of [ɔ] or [ɑ] in such words as *water* and *daughter*, and both pronunciations were used in the analyses of specific words.

Table 5.1: Phonetic Variants from the Vowel Synopses

aunt	æ	20	ɑ	1			**John**	ɑ	14	ɔ	6		
barn	ɑ	16	ɔ	6			Johnson	ɑ	1				
bear	ɛ	19					joined	ɔi	2				
boy(s)	ɔi	4					**joint**	ɔi	14				
bulls	ʊ	1					**keg**	ɛˆ	12	ɛ	6		
cal(f/ves)	æ	3					**law**	ɔ	15				
chin	ɪ	1					loin	ɔi	1				
cloth	ɔ	2					lost	ɔ	1	ɑ	1		
coffee	ɔ	5					**Mary**	ɛ	20				
college	ɔ	10	ɑ	9			**moth**	ɔ	12				
Colorado	ɑ	1	ɔ	1			**mother**	ʌ	21				
corn	o	17	ɔ	4			nice	ai	6	əi	3	ɑ	1
corral	ɛ	17	æ	3			**out**	ɑu	19	æu	2		
cottage	ɑ	1					pass	æ	4				
creek	ɪ	14	i	10			pig	ɪ	1				
crib	ɪ	17					**pond**	ɔ	10	ɑ	9		
crop	ɑ	15	ɔ	3			**poor**	o	12	u	6	ʊ	4
daughter	ɔ	14	ɑ	4			prices	ai	1				
dog	ɔ	20					**pull**	ʊ	20				
down	ɑu	20	æu	1			**roof**	ʊ	16	u	3		
drought	ɑu	2					**root(_)**	u	10	ʊ	6		
drouth	ɑu	16	ɔ	2			**school**	u	21	ʊ	1		
eight	e	21					**sermon**	ɜ	15				
father	ɑ	17	ɔ	2			**six**	ɪ	21				
faucet	ɔ	2	ɑ	1			**soot**	ʊ	17	ʌ	2		
five	ai	19	əi	1	ɑ	1	stop	ɑ	2				
four	o	21					**sun**	ʌ	21				
fox	ɔ	1					**ten**	ɛ	21				
frog	ɔ	1					thaw	ɔ	7				
frost	ɔ	13	ɑ	4			**three**	i	21				
German(y)	ɜ	6					trough	ɔ	3				
glass	æ	17					**twice**	ai	4	əi	2	ɑ	1
half	æ	17					**two**	u	21				
head	ɛ	21					**water**	ɔ	21	ɑ	2		
home	o	21					**wire**	ai	13	ɑ	9		
ice	ai	3					**wood**	ʊ	21				

The entire list of forms found in the set of vowel synopses appears in Table 5.1 with the preselected target items in bold in the first and eighth columns, the primary vowel in each word listed in the second and ninth columns and the number of informants using that pronunciation listed in the column immediately after. Alternative vowel variants are listed in the fourth and eleventh columns, and, in a small number of cases, a third set of vocalic realizations are listed in the sixth and thirteenth columns.

Regional and Social Distribution of Phonetic Features

As shown in the table above, the vowel synopses comprise a wide range of data on Colorado phonetics. The examination of the regional and social distribution of phonetic features, however, is limited primarily to those forms that were preselected targets and largely ignores replacement targets, since replacement targets generally occur too infrequently to hold much value in statistical testing. The exceptions to this constraint are the replacement words for *twice*, one of which *(nice)* was actually used more frequently than the target word. Furthermore, I tested only those words in which there were ten or more instances of the phonetic form in the interviews, and for which the primary pronunciation comprised no more than 85% of all the pronunciations of this item. Invariant forms were not subjected to statistical analysis.

father (A2)

In accordance with the LAWS worksheets, variants of this headword were elicited directly through a prompt concerning the male head of the household, but they also occurred often in natural conversations, typically near the beginning of the interviews, as informants discussed the community and their family's role in the community. Kurath and McDavid found that the free low back vowel in *father* varied markedly from area to area (1961: 112).

In the Colorado corpus, variant pronunciations for the word *father* were [fɑðɛr] and [fɔðɛr], which were used by 17 informants (81%) and 2 informants (9.5%) of the 21 total, respectively. No

significant correlation was found between the use of either variant and the social variables that were tested.

John (A18)

Kurath and McDavid do not discuss phonetic variation in the pronunciation in the name *John*; however, it is pronounced one of two ways in the Colorado corpus: [jɑn] and [jɔn]. Fourteen of the 21 informants (67.6%) used the former pronunciation and 6 of the 21 (or 29%) used the second. There is a significant correlation between the use of the variant [jɑn] and an informant's grid row, as illustrated below:

Table 5.2: Correlation of [jɑn] with Grid Row of Informant

p < .01	GRID ROW				
	H	I	J	K	Total
[jɑn] 0	0	2	5	0	7
1	5	3	1	5	14
Total	5	5	6	5	21

As shown in the table, all the informants in grid rows H and K used the [jɑn] pronunciation, while only one informant in grid row J used it, and there was mixed usage of the variant in grid Row I.

There is also significant correlation between the use of the variant [jɔn] and grid row, as seen in the following table:

Table 5.3: Correlation of [jɔn] with Grid Row of Informant

p < .042	GRID ROW				
	H	I	J	K	Total
[jɔn] 0	5	3	2	5	15
1	0	2	4	0	6
Total	5	5	6	5	21

No informants used the pronunciation in grid Rows H and K, and mixed usage prevailed in grid Rows I and J.

Use of the variant [jɔn] also significantly correlated with year of birth, as shown in the following table:

Table 5.4: Correlation of [jɔn] with Informant's Year of Birth

p < .025	YEAR OF BIRTH			
	Earliest	Middle	Latest	Total
[jɔn] 0	7	3	5	15
1	0	5	1	6
Total	7	8	6	21

The distribution of [jɔn] with respect to year of birth follows a pattern in which it was never used by informants in the earliest group, was used frequently by the middle group, and was used infrequently by informants in the latest group. This, like some of the lexical variation data presented above, suggests that linguistic variation is not necessarily a linear situation in which variants are lost or gained over time, but one in which a number of paths are possible, including the adoption of a variant during a short time period.

daughter (A22)

Kurath and McDavid found that in the greater part of the eastern states, *daughter* was pronounced with the /ɔ/ in *law*, but that the checked vowel /ɑ/ of *lot* was commonly used in the pronunciation of *daughter* in the Ohio Valley, in West Virginia, and in the Alleghenies of the central Pennsylvania. They also found use of /ɑ/ in the Valley of Virginia as a relic of Pennsylvania speech (1961: 161).

Two phonetic variants of the word *daughter* occur in the Colorado corpus: [dɔtɛr] and [dɑtɛr]. Fourteen of the 21 informants (67.7%) used the first variant and four (28.6%) used the second. The

pronunciation [dɔtɛr] shows no significant correlation with any of the social variables tested; however, there is a significant correlation between the use of [dɑtɛr] and year of birth, as the table below shows:

Table 5.5: Correlation of [dɑtɛr] with Informant's Year of Birth

p < .016	YEAR OF BIRTH			
	Earliest	Middle	Latest	Total
[dɑtɛr] 0	7	8	3	18
1	0	0	3	3
Total	7	8	6	21

Use of this variant in the Colorado corpus is confined to informants in the latest group, perhaps suggesting a sound change in progress.

college (A20)

Kurath and McDavid do not discuss variants of *college* in their work; however there are two phonetic variants for the target in the Colorado corpus: [kɔlɪ̆j] and [kɑlɪ̆j] with 47.6% of the informants using the former term and 42.9% using the latter. No significant correlation between the choice of one of these variables and the tested social categories was found.

roof (B15)

In the eastern states, Kurath and McDavid (1961: 154) found the word *roof* to be pronounced with either the /u/ of *tooth* of the /ʊ/ of *wood*, and, in folk speech, a variant that used the vowel /ʌ/. Although they found /u/ to be current in nearly all of the eastern states, they observed that it varied greatly in frequency. *Roof* with the same vowel as wood was more confined in its distribution, being largely confined to New England and its western settlements, Delaware Bay, and northern West Virginia. They also found there to be some social variability in its use as well, as they found that in those areas where the two forms were in competition, [ruf] was more likely to be used by the better educated speakers of the area.

Two pronunciations of *roof* are recorded in the Colorado corpus: [rʊf] and [ruf] with the former being far more common (16 informants) than the latter (3 informants). No significant correlation was found between the choice of the two variants and social variables.

soot (B9)

In the eastern Atlas records, Kurath and McDavid (1961: 155) noted three different pronunciations of *soot:* One with the vowel of /ʊ/ as in *foot,* another with the /ʌ/ of *flood* and a third with the /u/ of *tooth*. The distribution of the three variants was the result of regional and social variables, as [sʊt] was the primary pronunciation in the North and most areas of Pennsylvania, and [sʌt] was the primary pronunciation of the South and South Midland, and was also used as the pronunciation of a considerable minority in the North. *Soot* with the vowel of *tooth* was more limited in its use than the other two variants and appeared to be a prestige variation in the eastern corpus.

There are two pronunciations of *soot* in the Colorado corpus: [sʊt] (17 informants) and [sʌt] (2 informants). The pronunciation [sʊt] is not correlated with any variables; nor did [sʌt] significantly correlate with any of the social variables tested for this study.

water (C9)

Kurath and McDavid (1961: 163) found a rounded back vowel in the word *water* but with a great deal of variation in its precise realization, as well as the regional distribution of each variant. Their characterization of several variants using these vowels is as follows (1961: 163):

Table 5.6: Kurath and McDavid (1961: 163) Table of Low Back Vowels in /w/ Words

	wash	watch	water	wasp	want	swamp
Upstate N.Y.	ɑ ~ ɔ	ɑ	ɔ ~ ɑ	ɑ	ɔ ~ ɑ	ɔ ~ ɑ
Metrop. N.Y.	ɑ	ɑ	ɔ	ɔ ~ ɑ	ɑ	ɑ
Phila. area	ɑ	ɑ	ɔ	ɔ ~ ɑ	ɔ ~ ɑ	ɑ
W. Va.	ɔ	ɑ	ɑ	ɔ	ɔ ~ ɑ	ɔ ~ ɑ
Eastern Va.	ɑ	ɑ	ɔ	ɔ	ɔ	ɔ
Eastern S.C.	ɑ ~ ɔ	ɔ ~ ɑ	ɔ	ɔ	ɔ	ɔ

All twenty-one informants pronounced *water* as [wɔtɜr], but two informants also pronounced the word [wɑtɜr]. No significant correlation was found between the choice of either variant and the social variables that were tested.

corn (D1)

In the eastern records, Kurath and McDavid (1961: 117) show that the pronunciation of *corn* varies regionally, dependent in part on the allophonic variation of /r/ in the word. The range of variation includes /or/, /ɔr/, /ɔ/, and /ɒ/.

Two phonetic variants of the word *corn* appear in the corpus: [korn] and [kɔrn] with 17 (or 81%) of the informants using the former pronunciation and 4 (or 19%) using the latter. No significant correlation was found between the choice of variant and extralinguistic categories.

corral (E2)

Since this word was not generally found in the eastern records, Kurath and McDavid do not discuss it in their work; however, Hankey represents it as /krɛl/ in his work (1960: 106). Two variants for the word *corral* are found in the Colorado corpus: [kərɛl] and [kəræl]; 17 (or 81%) of the informants using the former and 3 (or 14.3%) using the latter. The variant [kərɛl] has a significant correlation with the region in which informants live:

Table 5.7: Correlation of [kərɛl] with Region of Informant

p < .036		REGION			
		Plains	Mountains	Southwest	Total
[kərɛl]	0	0	0	3	3
	1	5	9	4	18
Total		5	9	7	21

This pronunciation [kərɛl] is the sole variant in the plains and in the mountains, but in the southwest region [kərɛl] competes with [kəræl].

The pronunciation of *corral* as [kəræl] also has a significant correlation with region, as shown below:

Table 5.8: Correlation of [kəræl] with Region of Informant

p < .036		REGION			
		Plains	Mountains	Southwest	Total
[kəræl]	0	5	9	4	18
	1	0	0	3	3
Total		5	9	7	21

All the informants who used [kəræl] were from the southwest, and tables 5.7 and 5.8 illustrate the complementary nature of phonetic distributions, as opposed to the rarity of such distributions with respect to lexical data.

Additionally, the use of the pronunciation [kəræl] is significant for grid row, as shown in the following table:

Table 5.9: Correlation of [kəræl] with Grid Row of Informant

p < .04	GRID ROW				
	H	I	J	K	Total
[kəræl] 0	5	5	3	5	18
1	0	0	3	0	3
Total	5	5	6	5	21

No informants used this variant in grid rows H, I, and K; rather, only informants in grid row J used it.

barn (E5)

In the eastern records, barn is pronounced in several different ways, dependent in part on whether the speaker pronounces /r/ in the word (1961: 112). Phonemically, the found a range from /ɑr/ to /ɒr/ to /a/ to /ɔ/.

Of the 21 informants in this study, 16 (or 76.2% of all informants) pronounced the word *barn* as [bɑrn], while 6 pronounced the word as [bɔrn]. There was no significant correlation found between the use of either of these variants and the social categories that were tested.

keg (F5)

Kurath and McDavid (1961: 133) found that in the eastern states the word *keg* rhymed with *bag, beg,* or *plague.* Of these, [kæg] occurred nearly everywhere, but its use varied greatly in frequency and social distribution. [kɛg] was more common among cultured informants throughout the eastern states, and it had currency among all social groups in the cities of the North and the North Midland. [keg] was used with some frequency in three separate areas: New England, Virginia, and South Carolina.

In the Colorado corpus, *keg* has two realizations: [kɛg] and a raised variant in which the vowel is approaching [e] that I have transcribed as [kɛ^g]. The raised variant is used 12 times in the corpus and the unraised variant 6 times. No statistical correlation was found between the use of this item and any of the social variables tested in this study.

frost (H1)

Often occurring as part of the target item *frostbite*, *frost* has two variants pronunciations in the Colorado corpus: [frɔst] (13/21, or 61.9% of the corpus) and [frɑst] (4/21, or 19%). A significant

correlation between the use of the pronunciation [frɑst] and parental origin was found for both origin of mother and origin of father.

Table 5.10: Correlation of [frɑst] with Origin of Mother

p < .008	ORIGIN OF MOTHER			
	Colorado	Great Plains	Elsewhere	Total
[frɑst] 0	10	6	1	17
1	1	0	3	4
Total	11	6	4	21

The pronunciation of *frost* as [frɑst] was not found in the interviews of those informants whose mothers were born in the Great Plains states, was found used only once for those informants whose mothers were from Colorado, and was found three times for those informants who were from elsewhere.

The pronunciation [frɑst] was also found to be correlated with origin of father, as shown in the following table:

Table 5.11: Correlation of [frɑst] with Origin of Father

p < .024	ORIGIN OF FATHER			
	Colorado	Great Plains	Elsewhere	Total
[frɑst] 0	5	10	2	17
1	1	0	3	4
Total	6	10	5	21

In the case of origin of father, informants never used the pronunciation if their fathers were from the Great Plains states, infrequently if their father was from Colorado, and relatively frequently if their father was from elsewhere.

The distribution of [frɑst] based on parental origin is almost the same for both mother and father: If either parent was from the Great Plains, the informant did not use the pronunciation [frɑst]; if either parent was from Colorado, the variant was used infrequently; and if the informant was in the elsewhere

group based on origin of either parent, the informant was most likely to use the pronunciation of *frost* as [frɑst].

drouth (H20)

In the eastern states, Kurath and McDavid (1961: 167) found that the word *drought* had several pronunciations based on the pronunciation of the final consonant as /t/ or /θ/, and the vowel sound as either /au/ or /ɔ/. Of the two vowel variants, the former was the most common, having nearly universal currency, except in western Pennsylvania, where the word was often pronounced as [druθ]. The variant using the vowel /ɔ/ occurred in scattered distribution in New England, New York and eastern Pennsylvania. Furthermore, Kurath and McDavid found that the pronunciation of the word ending in /t/ was common only in cultivated speech, although it could be heard among middle-class speakers in urban areas. Finally, Kurath and McDavid found [drauθ] to be most common in folk speech.

The Colorado corpus includes both the pronunciation ending in /t/ and /θ/. Of these, *drouth* is by far the most common variant in the Colorado corpus, occurring in the speech of 18 informants, compared to the two informants who used the word *drought*. These words not only vary in their final consonants, a variation that is often represented orthographically, but also vary with respect to the initial sound being [d] or [ǰ]. With respect to the word ending in the interdental fricative, as opposed to the word ending in the labiodental stop, there are two pronunciations that differ in the vowel used: [drauθ] (16 informants) and [drɔθ] (2 informants). There is no significant correlation between the vowel used and the social variables of the informants in this study.

crop (H22)

Kurath and McDavid (1961: 143) found in the eastern Atlas records that *crop* was usually pronounced with the checked /ɑ/ of *lot,* but that in New England and Western Pennsylvania speakers

often used the /ɒ/. Two pronunciations of the word *crop* appear in the Colorado corpus: [krɑp] and [krɔp]. Of these, the first variant was used by 15 of the 21 informants (71.4%), while the second variant was used by three (or 14.3%). No significant correlation was found between the use of either [krɑp] and [krɔp] and the social variables that were tested for this study.

creek (I2)

In general, Kurath and McDavid (1961: 148) found that the regional distribution of the phonetic variants [krik] and [krɪk] in the eastern states was one in which the former pronunciation predominated in the South, while the latter was the predominant pronunciation in the North. There were exceptions, however, in that the pronunciation of *creek* with an /i/ was used on the upper Chesapeake Bay and in Maryland, and the /ɪ/ of *crick* was used along the South Carolina coast. Furthermore, there were several areas in which speakers alternated between both pronunciations. In his work on Colorado English, Hankey (1961: 114) found that [krɪk] was the more frequent form used by speakers, except among cultured speakers and in Manassa and Trinidad, where informants only used [krik].

The word *creek* has two phonetic variants in the Colorado corpus: [krɪk] and [krik] with 14 (or 66.7%) of the informants using the former pronunciation and 10 (or 47.6%) using the latter. Five informants use both pronunciations during the course of their interviews with no apparent patterns in distribution, e.g. generic usage vs. proper noun. No significant correlation was found between the choice of variants and any of the social variables that were tested.

pond (I11)

Although Kurath and McDavid (1961) do not address the pronunciation of this word in the eastern states, there are two variant pronunciations of *pond* in the Colorado corpus: [pɔnd] (10/21, or 47.6%) and [pɑnd] (9/21, or 42.9%). There is a significant correlation between the use of [pɔnd] and origin of father, as shown below:

Table 5.12: Correlation of [pɔnd] with Origin of Father

p < .028	ORIGIN OF FATHER			
	Colorado	Great Plains	Elsewhere	Total
[pɔnd] 0	6	3	3	12
1	0	7	2	9
Total	6	10	5	21

None of the informants whose fathers were from Colorado, and usage of it was mixed when the father was from either the Great Plains or elsewhere.

There was also a significant correlation between the use of [pɑnd] and origins of father, as shown in the following table:

Table 5.13: Correlation of [pɑnd] and Origin of Father

p < .014	ORIGIN OF FATHER			
	Colorado	Great Plains	Elsewhere	Total
[pɑnd] 0	1	9	2	12
1	5	1	3	9
Total	6	10	5	21

Only one out of ten informants with a father from the Great Plains used the variant, whereas five of the six informants whose fathers were born in Colorado used the variant.

There is also a correlation between the choice of variants and biological sex of informant, as seen in Table 5.14:

Table 5.14: Correlation of [pɑnd] with Sex of Informant

	SEX		
p < .049	Male	Female	Total
[pɑnd] 0	8	4	12
1	2	7	9
Total	10	11	21

As shown, only two of the ten men in the survey (20%) pronounced the word as [pɑnd], as opposed to 7 of the 11 women (64%).

poor (K10)

Kurath and McDavid (1961: 119) found the high vowels /u ~ ʊ/ to be nearly universal in the word *poor*, as well as *sure*, in the North Midland and in the North, outside northeastern New England. In the South, as well as in northeastern New England and Maryland west of the Chesapeake Bay, they found that the mid-vowel /o/ was the predominant vowel in *poor*.

All three realizations of *poor* are found in the Colorado corpus: [por], [pur], and [pʊr]. Of these, [por] is the most common (12 informants), and there is a significant correlation between its use and origin of mother, as shown in the following table:

Table 5.15: Correlation of [por] with Origin of Mother

p < .045	ORIGIN OF MOTHER			
	Colorado	Great Plains	Elsewhere	Total
[por] 0	6	3	3	12
1	0	7	2	9
Total	6	10	5	21

No informants whose mothers were born in Colorado used this variant; however, the majority of those mothers were born in Great Plains states used the variant, and usage among those informants whose mothers were born elsewhere was mixed.

There is also a significant correlation with grid row, as shown in the table below:

Table 5.16: Correlation of [por] with Grid Row of Informant

p < .007	GRID ROW				
	H	I	J	K	Total
[por] 0	5	3	1	0	9
1	0	2	5	5	12
Total	5	5	6	5	21

No informant in grid row H used the variant, all informants in grid row K used it, nearly all informants in grid row J used the variant, but usage was mixed in grid row I, with only two of the five using the variant. This distribution suggests that [por] is more common in southern Colorado, as use of the variant decreases along a continuum from south to north. When the grid rows are collapsed into two northern grid rows and two southern grid rows, this patterning is even more evident, as shown in the following table.

Table 5.17: Correlation of [por] with Grid Row of Informant

p < .001	GRID ROW		
	H + I	J + K	Total
[por] 0	8	1	9
1	2	10	12
Total	10	11	21

Grouping together the three northernmost grid rows and statistically testing against the southernmost grid row also shows statistical significance, as shown in the following table:

Table 5.18: Correlation of [por] with Grid Row of Informant

p < .03	GRID ROW		
	H + I +J	K	Total
[por] 0	9	0	9
1	7	5	12
Total	16	5	21

And finally, grouping together the three southernmost grid row units and statistically testing it against the northernmost grid unit also shows significance.

Table 5.19: Correlation of [por] with Grid Row of Informant

p < .004	GRID ROW		
	H	I + J + K	Total
[por] 0	5	4	9
1	0	12	12
Total	5	16	21

The tests of grid rows in all their different configurations show [por] to be one of few variants for which there is a clear linear distribution in the Colorado data.

Use of [por] was also significantly correlated with field worker, as shown in the table below:

Table 5.20: Correlation of [por] with Field Worker

	FIELD WORKER		
p < .032	Newton	Antieau	Total
[por] 0	6	2	8
1	3	9	12
Total	9	11	21

In Newton's interviews this variant occurs infrequently, while it occurs relatively frequently in my own interviews.

The second most common phonetic variant of *poor* was [pur] (6 informants). A significant correlation was discovered between the use of this variant and the grid row of the informant, as shown in the following table:

Table 5.21: Correlation of [pur] with Grid Row of Informant

p < .034	GRID ROW				
	H	I	J	K	Total
[pur] 0	1	4	5	5	15
1	4	1	1	0	6
Total	5	5	6	5	21

As the table indicates, the highest occurrence of the form in grid row H, where it is used by nearly all informants, but in all other grid rows the variant occurs infrequently, with use of the form by only one of five informants in grid row I, one of six in grid row J, and none of the informants in grid row K.

Collapsing the two northernmost grid rows and testing them against the two southernmost grid rows also resulted in statistical significance of the use of [pur] and grid row, as shown in the following tables:

Table 5.22: Correlation of [pur] with Grid Row of Informant

p < .043	GRID ROW		
	H + I	J + K	Total
[pur] 0	5	10	15
1	5	1	6
Total	10	11	21

The table shows that [pur] occurs only once in the two southernmost grid rows, suggesting a northern preference for the variant.

Then, the three southernmost grid rows were collapsed and statistically tested against the northernmost grid row. The results are presented in the table below:

Table 5.23: Correlation of [pur] with Grid Row of Informant

p < .004	GRID ROW		
	H	I +J + K	Total
[pur] 0	1	14	15
1	4	2	6
Total	5	16	21

The pattern of this areal distribution suggests a strong link between the use of this variant and northern Colorado.

twice (conversational)

Kurath and McDavid (1961: 109) provide a description of the diphthong in *nine, twice,* and *wire,* as one differing in several ways including its initial quality, in the relative length of the initial element, and the relative prominence of the glide in the pronunciation of the diphthong. Generally, with respect to length, Kurath and McDavid found a "fast" diphthong in the North, in Pennsylvania, and in Metropolitan New York City, in the Hudson Valley, and on Long Island. Although "slow" realizations of this diphthong could also be found in the New York City area, slow diphthongs with a short upglide were more commonly associated with the South.

Of the replacement words that had to be implemented in the individual idiolect synopses in several cases, *nice* is the only word that was used often enough to be tested using statistics by the standards set earlier. This is due in large part to the fact that the word that it replaced – *twice* – was not itself a target word of the interviews but had been used in Kurath and McDavid (1961) and occurred often enough in the interviews to warrant keeping in the synopses. Words with the sound [ais], too, are worthy of attention because of their inclusion in discussions of Canadian vowel raising by which the phoneme [ai] is realized as [əi]. Therefore, *twice* was kept as a target item, but in interviews in which it was not realized, *nice* and *ice* were used as replacements.

With respect to *nice*, there were three variant pronunciations: [nais] (6 occurrences), [nəis] (n=3), and [nɑs] (n=1); however, no significant correlation was noted between choice of variant and social variables. When the tables for all of the words (*nice, twice, ice*) were collapsed, however, significant correlations between the choice of one linguistic variable and the social variables of those who used them began to appear. The biggest factor in the uses of these pronunciations seemed to be region, as the data on [ai] in the following table suggests:

Table 5.24: Correlation of [_ais] with Region of Informant

p < .01	REGION			
	Plains	Mountains	Southwest	Total
[ai] 0	4	0	3	7
1	1	9	4	14
Total	5	9	7	21

While all the mountains informants used the [ai] variant, usage was mixed among the southwest informants and only one plains informant used the form, as most of the other informants use [əi] or [ɑ].

The choice of the variant [əi] for these words was also found to be correlated with region, as the following table shows:

Table 5.25: Correlation of [_əis] with Region of Informant

p < .045	REGION			
	Plains	Mountains	Southwest	Total
[əi] 0	2	9	5	16
1	3	0	2	5
Total	5	9	7	21

No one used this variant for the selected words in the mountains, there was mixed usage of the variant in the plains region; and little use of the variant in the southwest. The distribution of [ai] and [əi] is complementary among the mountains informants in the Colorado corpus.

Although there is competition between the monophthong and the diphthong in the phonetic environment in [_s] in the words tested in this study, there was no correlation between its use and the social category of the informants who used it; the distribution of monophthongs and diphthongs will be examined in more detail below.

down and *out* (conversational)

Kurath and McDavid (1961: 110) also found there was a great deal of regional variation in the pronunciation of the diphthong used in *down, mountain, house,* and *out,* including in initial vowel quality and the relative length of the initial element. They found the diphthong with the initial element [a] to be the most common variant in the North Midland, from the Hudson Valley and Metropolitan New York to Ohio. They also found this realization to predominate in New England and Upstate New York, but there were also other variants used in this area, including an inititial [æ], especially in folk speech. In coastal Georgia and Florida, a slower realization of the diphthongs [ɑʊ, aʊ] predominated, but elsewhere in the South and South Midland, [æʊ] predominated. The same pronunciation was also not uncommon in West Jersey and in Pennsylvania, although it tended to be avoided in Philadelphia.

Although *down* is one of only a few words that had a single alternative pronunciation to the primary [dɑun], the phonetic difference is closely related to the difference found in alternatives to the primary pronunciation of [aut], so these differences are treated together here. This difference is the

realization of [æ] rather than [a] as the onset vowel of the diphthong in the low-frequency variant pronunciations [dæun] and [æut]. None of these variants correlated significantly with the social variables that were tested for this study.

root (conversational)

Kurath and McDavid (1961: 155) observed that the pronunciation of *root* with the vowel /u/ of *two* and *tooth* was the most common pronunciation in the eastern United States, particularly in the South and South Midland, the North Midland, and scattered throughout New England, particularly in the western communities of New England. On the other hand, a pronunciation of the word with the vowel of *book* and *pull* was largely confined to the New England settlement area in Connecticut, New Hampshire, Vermont and upstate New York, and the pronunciation was scattered in New York City, New Jersey, Pennsylvania and the Ohio Valley. Hankey (1961: 114) found both [ruts] and [rʊts] in his data and explained that it was among several words illustrating either the mixture of Northern and Midland features in Colorado or the continued competition of these forms in the Northern and Midland regions.

Two variant pronunciations are recorded in the Colorado corpus: [rut] and [rʊt]. Of these, the first is the most commonly used variant (10 informants) and the other is less common (6 informants). The Kruskal-Wallis Test found no correlation between the choice of either variant and the social variables that were tested in this study. Part of the reason for this might be that *root* is not a LAWS target but one elicited in conversation in a number of compounds and occurring as both noun and adjective (e.g. __ *beer,* ___ *canal,* __ *cellar,* ___*-ing* (V)). There is no consensus for *roof* and *root* in the data. The Sedgwick and Lake City informants pronounce the [rut] form consistent with their pronunciation of [ruf] but the Alamosa informant uses the [ruf] form as well as the [rʊt] form.

wire (conversational)

Although it is elicited during conversation, the item *wire* is most often found during Worksheet E in discussion of enclosures and fencing on the ranch and farm and is often elicited as part of the

compound *barb(ed) wire*. Kurath and McDavid (1961: 109) found three different phonemes in *wire, tired,* and *fire*: /ai/, /ɑ/, and /ɔ/. With respect to the linguistic distribution of these forms, they found that some of the differences in how the vowels were pronounced in these words were created by whether or not the /r/ was preserved in the word in the specific dialect they were examining. Regionally, Kurath and McDavid found that /ai/ was the phoneme in general currency in the North, the South, and in Pennsylvania east of the Susquehanna River, but that it was rare in the South Midland from West Virginia to South Carolina, except among cultured speakers. In the Midland, except in the Hudson Valley, Kurath and McDavid found the phoneme /ɑ/, particularly in the South Midland, where it was nearly universal.

As far as its pronunciation, the word takes two phonetic forms in the Colorado corpus: [wair] or [wɑr]. The first variant is the most common among the Colorado informants (n=13), and there is a significant correlation between its use and origin of mother, as shown below:

Table 5.26: Correlation of [wair] with Origin of Mother

p < .02	ORIGIN OF MOTHER			
	Colorado	Great Plains	Elsewhere	Total
[wair] 0	3	5	0	8
1	8	1	4	13
Total	11	6	4	21

The table indicates categorical use of the variant if the informant's mother was born elsewhere, but only one of six informants whose mother was from Great Plains states used the variant and usage was mixed when the informant's mother was born in Colorado.

There is also a correlation between the use of this variant pronunciation and the origin of the informant's mother, as shown in the following table:

Table 5.27: Correlation of [wair] with Grid Row of Informant

p < .002		GRID ROW				
		H	I	J	K	Total
[wair]	0	0	0	6	2	8
	1	5	5	0	3	13
Total		5	5	6	5	21

The pronunciation [wair] is used by all informants of grid rows H and I, it is never used in grid row J, and its usage is mixed in grid row K, suggesting a northern distribution of the variant.

This northern distribution is supported by collapsing the two northernmost grid rows and the two southernmost, as the following table shows:

Table 5.28: Correlation of [wair] with Grid Row of Informant

p < .001		GRID ROW		
		H + I	J + K	Total
[wair]	0	0	8	8
	1	10	3	13
Total		10	11	21

As shown in this table, use of the [wair] variant was categorical among the two northernmost grid rows, but rarely used by speakers in the two southernmost grid rows, who instead used one of the two other variants found in this corpus.

The second variant is used by nine informants in the corpus, and there is a significant correlation between its use and the grid row of the informant, as shown below:

Table 5.29: Correlation of [wɑr] with Grid Row of Informant

p < .002		GRID ROW				
		H	I	J	K	Total
[wɑr]	0	5	5	0	2	12
	1	0	0	6	3	9
Total		5	5	6	5	21

The variant is not used by any of the informants in grid rows H and K, its use is categorical among the informants in grid row J, and its use is mixed in grid row K, suggesting a southern distribution of the variant in Colorado. This correlation is supported by collapsing the two northernmost grid rows and testing them against the two southernmost grid rows, as shown in the table below:

Table 5.30: Correlation of [wɑr] with Grid Row of Informant

p < .0001	GRID ROW		
	H + I	J + K	Total
[wɑr] 0	10	2	12
1	0	9	9
Total	10	11	21

As shown in this table, use of this variant was categorically absent in the two northernmost grid rows, but it was used by nearly all informants in the two southernmost grid rows.

This monophthongization is a phenomenon in the corpus that is not restricted to cases of *barb(ed) wire*, although that is perhaps the phrase in which one is likeliest to hear it; monophthongs were also used sporadically in the corpus in *twice* and its replacements *ice* and *nice*. It has a southern inclination in the corpus, although in terms of grid rows, it is actually most prevalent in grid row J rather than the southernmost grid row in Colorado, grid row K.

Unlike in the lexical analysis portion of this study, field worker seems to have little bearing on the use of phonetic variants described in this portion of the study. The only significant correlation between field worker and one of the phonetic variants in this analysis was the use of [por] among informants that I interviewed, as illustrated in Table 5.17 above. In Table 5.26, I present all the phonetic variants that were correlated with social variables with related variants displayed in split cells:

Table 5.31: Significant Correlations between Social Variables and Phonetic Variants

Social Variable	Phonetic Variants			
Grid Row	[jɑn]	[por]	[wair]	[kəræl]
	[jɔn]	[pur]	[wɑr]	
Mother	[frɑst]	[por]	[wair]	
Region	[kərɛl]	[_ais]		
	[kəræl]	[_əis]		
Father	[pɑnd]	[frɑst]		
	[pɔnd]			
Year of Birth	[dɑtəˠ]			
Sex	[pɑnd]			

One observation that can be made about this table that contrasts strongly with the same table made for lexical variants in the previous chapter is that of the 12 phonetic targets that had variants that were significantly correlated to social variables, half of these had two variants significant for the same social variable (and were placed in split cells in this table). The occurrence of such complementary items was relatively rare in the lexical analysis (2/37, or 5%). The difference between lexical sets and phonetic sets in this regard is largely due to the small number of choices of variants for a given phonetic target (maximum n=3), as opposed to the numerous choices of variants, including oncers, that are found for most lexical targets in the corpus.

Table 5.31 also shows that unlike in the lexical analysis, in which all social variables were significant correlated to specific lexical items, not all social variables were found to have phonetic correlates; namely, no significant correlation was found between the social variable of education and any phonetic variants tested in this analysis, nor was any correlation found between age of informant and phonetic variation. The lack of significant correlation between phonetic variation and education is an interesting finding in that education is often thought to be an important factor in linguistic variation, and education level was found to be significant in other facets of Colorado speech, but its lack of significance with pronunciation would seem to support the claims by some researchers that family and peer groups have more influence on a speaker's pronunciation than schooling does.

The absence of significant correlation between age and phonetic variation is perhaps even more surprising, given that age was the highest ranking social variable in terms of the number of lexical items it was correlated with in the previous chapter (n=9). The current study examines age roughly by decades, suggesting that lexical variation may be prone to change in short amounts of time, while it may be the case that changes in pronunciation during the same time span may be too subtle to detect without the aid of sophisticated tools designed to analyze such small differences.

Despite the fact that neither education nor age were found to correlate significantly with any phonetic variants, the other social variables that were tested were found to correlate with at least one variant. With seven variants being linked statistically with grid row of informant, the category of grid row seems to play a major role in pronunciation differences in the state. As mentioned earlier, grid rows were not entirely created based on latitude but were also based on the political history of Colorado's counties; however, grid rows are in part based on where they are located in the state with respect to north and south and, as such, are used to examine some of the linguistic differences that were bound to be related to issues of settlement patterns. Unlike the chaotic nature of the relationship between grid row and lexical variants, there are cases in the phonetic data of variants in which contiguous grid rows pattern like one another, as in the case of [wɑr], which opens up the possibility that there is some patterning in the Colorado data based on a north-south continuum. There are also variants (e.g. [jɑn]/ [jɔn]) in which the middle grid rows pattern alike and the southernmost and northernmost grid rows pattern alike. While this might seem an anomaly, there are two observations worth noting here: One is that there is some historical evidence, and there has been some linguistic evidence, that southern Colorado is different from the rest of the state, both in its relationship to New Mexico and Mexico and in its choice of some of the same linguistic variants that are commonly associated with Southern American English, including monophthongization. Another is that Kimmerle, Hankey and others claimed that northern Colorado related to Northern American English more than other areas of Colorado did. What we might be seeing in those cases where the middle grid rows in Colorado pattern in one way and the northern and southern grid

rows in another is evidence of the extension of the Midland in the middle of Colorado, which makes sense geographically but is problematic for the notion of a Midland region that widens as it crosses west over the Mississippi River. Further research will need to be done with respect to grid rows, however, before we can be more certain about the effect that has on the phonetics of Colorado.

With respect to the phonetics of the Colorado corpus, the variable of region is not as influential as the variable of grid row, nor does region have the same influence over the phonetics that it does over the lexicon. There are, however, four variants correlated significantly with the region that the informant lives in, suggesting that region has some bearing on pronunciation differences.

The origin of father was significantly correlated to three linguistic variants in the corpus, and the origin of the informant's mother seems also to carry more serious weight than it did in the lexical analysis, as three phonetic variants were significantly correlated with origin of mother.

Somewhat related to the variable of age, year of birth was found to have only one correlation with the phonetic variants that were tested in this part of the study – use of the variant [dɑtəˑ] for female offspring. Along with age, the relative insignificance of year of birth suggests that perhaps there is not a wide enough range in the ages of informants nor their years of birth for phonetic change to be an important issue in language use.

At first glance, sex would also seem to play little part in the choice of pronunciation variants, at least at the level of individual features, as only the use of [pɑnd] significantly correlated with sex of informant. However, going beyond the pronunciation of individual words and looking at classes of words with respect to [ɑ] and [ɔ], as in the case of [pɑnd ~ pɔnd], suggests that sex of informant plays an important role in the distribution of these vowels.

With respect to the distinction between historical classes of words based on the vowels [ɑ] and [ɔ] (as presented in Kurath and McDavid 1961: 7; Kurath 1964: 91) and the blurring of these classes among some speakers, a number of categories can be created based on individual performances on the

idiolect synopses in pronouncing these words. These categories include 1) informants who maintain a consistent separation between the classes of words that historically had [ɑ] and those that historically had the vowel [ɔ]; 2) informants who used [ɑ] in words that historically had [ɔ]; 3) informants who used [ɔ] in words that historically had [ɑ]; 4) informants who did both (2) and (3); and 5) one informant who only used [ɔ] for words in both classes. No informant was found who only used the [ɑ] form in these classes. The table below matches informants with their distribution of the lower back vowels:

Table 5.32: Informants by Distribution of Lower Back Vowels in Historical Word Classes

Phonetic Distribution	**Informants (by community)**
1) used [ɑ] and [ɔ] in historical word classes	Walden, Black Hawk
2) used [ɑ] in words that historically used [ɔ]	Buena Vista, Limon, Lake City (aux), Durango
3) used [ɔ] in words that historically used [ɑ]	Kremmling, Hygiene, Sedgwick, Meeker, Leadville, Lake City, Saguache, Beulah, Lamar, Del Norte, Pagosa Springs, Springfield, Idalia
4) used each sound in cases in which words were historically of the other class	Peyton, Alamosa

As shown, it was rare for informants to pronounce all words with the vowel that has been attested historically for that word, as only two informants did so, but it was also rare for informants to swap vowels between word classes (only two did so) and even rarer for an informant to only use one vowel for both classes of words (as in the case of Idalia). More commonly, speakers used a vowel in all the cases in which that sound had historically been used and also used that vowel in at least one other context in which that vowel had not occurred. In four cases, the sound that was used in this way was [ɑ]; however, it was far more common for the Colorado speakers to use [ɔ] in words historically pronounced with that vowel, as well as to use it in words historically in the [ɑ] class (12 informants). Along with the informant who only uses [ɔ], an analysis of the phonetics of the Colorado corpus shows that [ɔ] is far more productive among these speakers.

Applying the Kruzkal-Wallis test to this data, I found a significant correlation between those informants who used [ɑ] in words recognized as belonging historically to the [ɔ] class (Group Two) and the social variable of sex, as shown in the table below:

Table 5.33: Correlation of [ɑ] with Sex of Informant

	SEX		
p < .039	Male	Female	Total
[ɑ] 0	10	7	17
1	0	4	4
Total	10	11	21

As the table shows, no males used [ɑ] in this way, while four females did. When I incorporated the two informants in Group Four here (as they also used [ɑ] in this way), even greater correlation was found between the spread of [ɑ] and sex of the informant, as shown below:

Table 5.34: Correlation of [ɑ] with Sex of Informant (Collapsed)

	SEX		
p < .007	Male	Female	Total
[ɑ] 0	10	5	15
1	0	6	6
Total	10	11	21

The use of [ɔ] in words that historically had [ɑ] (Group Three) also showed a significant correlation with sex, as shown below:

Table 5.35: Correlation of [ɔ] with Sex of Informant

	SEX		
p < .001	Male	Female	Total
[ɔ] 0	0	8	8
1	10	3	13
Total	10	11	21

All the males in the study used [ɔ] in words historically in the [ɑ] class, while only three female informants were members of Group Three. When the two female informants from Group Four were collapsed with Group Three (as they also used [ɔ] in these words), there was still a strong correlation, as shown below:

Table 5.36: Correlation of [ɔ] with Sex of Informant

	SEX		
p < .007	Male	Female	Total
[ɔ] 0	0	6	6
1	10	5	15
Total	10	11	21

As reinforced in this table, all males in this study made the same choice in this regard, but female informants varied with respect to this issue.

Some of the previous literature on American English depicts the so-called low-back vowel merger (or the *caught-cot* merger) as being complete and solid in the West (see, e.g., Labov 1991; Labov, Ash, and Boberg 1997); however, an examination of the pronunciation in the Colorado corpus does not support such a generalization. Rather, the distribution of the vowels [ɑ] and [ɔ] in the speech of elderly Coloradoans seems to be a complex matter that does not lend itself easily to linguistic generalizations. Hamilton-Brehm (2003: 146) found a similar situation in El Paso, Texas, and suggests the possibility that a distinction between the two vowels was making a comeback. That both Hamilton-Brehm's Linguistic Atlas study and my own should have different results than Labov's TELSUR project suggests that methodological differences might be influencing the results, and it is important to note that these differences might be due to Labov's coverage of the entire West and the restriction of Hamilton-Brehm's study and my own to much smaller areas; nevertheless, it would seem that is too early to close the book on the low-back vowel merger in the West and that further study should be devoted to this matter.

While linguistic generalizations about the merger are difficult to make, the Colorado data does have some social implications with respect to the matter. Simply put, male informants in the study did

not participate in the low-back vowel merger (at least, in the direction that Labov and others describe), while some female informants did.

Overview of Phonetic Variation in the Colorado Corpus

As is the case in other dialects of American English, the pronunciation of Colorado English is neither homogenous nor wildly varied. Approximately half the targets selected for this analysis had no discernible variation in their pronunciation; however, the other half did have more than one phonetic variant associated with them. Although these variants are not restricted to any specific locations (based on word classes) in the idiolect synopses, there were several facets of Colorado pronunciation that were more prone to variation than others, particularly lower back vowels and diphthongs. Some of the higher vowels, particularly high back vowels, were also prone to raising. Finally, some specific words were also subject to variation, particularly *poor, root, roof, soot,* and *creek*.

As in the case of lexical variation, an examination of variation in Colorado phonetics shows that Coloradoans have many phonetic variants from which to choose and it would seem their choices are at least partially based on a number of social factors. However, the results of phonetic analysis look rather different from those of the lexical analysis, in that phonetic variation appears to be less pervasive, if only because phonetic gradations are less salient than lexical variants, and the broad level of impressionistic phonetics applied in this study results in only two or three phonetic variants for a word. With only two or three variants being used, there is greater opportunity for variants to appear in complementary distribution in the data. For instance, both [por] and [pur] are correlated with grid row, as those grid rows that significantly correlate positively for one, significantly correlate negatively with the other. Such is rarely the case in the lexicon, where there are often numerous variants from which speakers might choose.

Particular social variables also play different roles in their effect on phonetic variation than they do for lexical variation. For instance, the social variable of age, which was the social variable with the greatest number of variants correlated with it in the lexical analysis, was found to have no phonetic correlates with it. Education, too, had no phonetic variants correlated with it, although it has some

significance in other facets of Colorado English. Finally, field worker, which had a strong influence at the lexical level, was found to be correlated with only one variant in the phonetic data.

It became apparent in a study of lower-back vowels that an analysis based only on the pronunciation of individual words and their social correlates might not tell the whole story with respect to the sociolinguistic situation of this variable. While only one phonetic variant significantly correlated with the social variable of sex in the statistical tests for individual pronunciations, a broader study focusing on word classes revealed a high probability that the sex of an individual plays a role in how informants pronounce words that are affected by the low back vowel merger. This finding illustrates the value of Atlas methodology, as it creates possibilities for scholars to find answers to new questions or to reframe old questions as the need arises.

CHAPTER 6

SYNTACTIC VARIATION IN THE COLORADO CORPUS

This chapter examines syntax in the Colorado corpus by 1) providing data on syntactic variation in the Colorado corpus using select forms catalogued in the eastern states by Atwood (1953) as a starting point; 2) presenting the results of inferential statistics when significant social correlates were found in the corpus; and 3) comparing some of the syntactic evidence collected in the LAWS corpus with data collected earlier in the eastern United States. Such an examination is intended to shed light on some aspects of grammatical variation in Colorado.

Aside from LAWS targets that concern variation in the prepositions used in some expressions, such as *sick__the stomach* and *quarter__ eleven*, LAWS methodology does not elicit syntactic forms directly, due primarily to the potentially negative effect such questions can have on an interview and because of the dubious data that such questioning can elicit (see for example Labov 1971). Instead, syntactic forms occur in the interviews as byproducts of conversation, in contrast to the manner in which many of the LAWS lexicon and phonetic items are actually targeted. Although on one hand, this means that syntactic features that occur in the interviews do so more naturally than they would if they were directly elicited, and hence, the presence of a syntactic form in an interview shows that an informant uses that form, its absence in an interview is very weak evidence that an informant does not use that feature.

This dissertation uses Atwood's (1953) study on verb forms in the eastern United States as a starting point, as many of the features that Atwood discusses occur in the Colorado interviews, and because Atwood's comprehensive study of eastern American verb forms complements the descriptions by Kurath (1949) and Kurath and McDavid (1961) of, respectively, the lexicon and the pronunciation of eastern American English. Despite the relative formality imposed by the situation of a tape-recorded interview between strangers compared to, for example, casual speech between friends, and the relatively short time that field workers spent with informants, numerous syntactic forms are used in the Colorado

Atlas interviews that Atwood (1953) examined in his study of verb forms in the eastern states and that were also used by Colorado informants, including irregular past tense forms, a-prefixing, and double modals. This section also includes discussion of one syntactic feature of American English that had not been well-studied at the time of the Atwood's study and which lies somewhat outside the scope of verb forms but is an interesting phenomenon in American English, that is, positive *anymore*.

Tense Forms

This section focuses on a set of seven words that are a subset of the tense forms Atwood discusses that show some variation in the Colorado data: *begin, blow, drink, grow, run, see,* and *wear*. In addition, this section also includes data on the copula *be* with respect to tense.

The corpus provides evidence of three verbs taking regular past tense markers for verb forms that most Colorado informants conjugated using irregular past tense morphology: *blowed, drinked,* and *growed*. Atwood reported that all three forms occurred in the speech of Type I informants in northeast New England, but that *blowed* was used by a majority of Type I and II informants in the South. Atwood reported that outside of New England, use of *drinked* was relatively rare in the speech of anyone except Type II informants. *Growed* was used relatively frequently by Type I informants, as well as Type II informants, except in New York, New Jersey and Delaware.

With respect to such usage in the Colorado interviews, the following list provides excerpts of speech that the informants used regular rather than irregular past tense forms:

1.a. …on top of what they *blowed* in. (Hygiene)
b. …*blowed* things down. (Pagosa Springs)
c. I never *drinked* out of it. (Pagosa Springs)
d. …where that hay is *growed.* (Lamar)
e. …he just *growed* up normal. (Durango)
f. I haven't *growed* any. (Pagosa Springs)

No statistical correlation was found between the use of these forms and the social variables that were tested for this study.

In addition to regular/irregular past tense issues, there were also several verb forms typically used as participles in the corpus but occasionally used as preterits without a preceding auxiliary verb form, particularly the verbs *begun, run,* and *seen*. Atwood discusses the use of *begun* as a preterit form to be common in New England and throughout the United States slightly more among Type I than Type II informants. *Run* as a preterit was predominately used among old-fashioned informants, but it was also used by a majority of Type II informants in the eastern states and is only rare among cultured informants. *Seen* was common in the Midland region, where it was used by two-thirds to nearly all Type I informants and half to two-thirds of the Type II informants.

The occurrence of these forms in the Colorado corpus is illustrated with the following examples:

2. a. He *begun* to move right around…(Springfield)
   b. …then I *run* away from home and got married (Black Hawk)
   c. He *run* the smelter in Black Hawk (Black Hawk)
   d. I *run* a tractor to measure that way (Hygiene)
   e. There was a spout and it *run* out (Hygiene)
   f. If we *run*, we… (Sedgwick)
   g. My grandfather's dad was from Ireland and *run* away from home (Idalia)
   h. It was some neighbors *run* out: "Hey I *run* out of gas" (Idalia)
   i. She *run* a little cafe (Idalia)
   j. They *run* out here, northeast of here (Beulah)
   k. I *run* a swing stacker for a guy (Pagosa Springs)
   l. The environmentalists *run* a ban against killing a coyote (Alamosa)
   m. I *seen* one of those coral snakes (Kremmling)
   n. I *seen* some things a-hanging in a tree back there (Peyton)
   o. He said he *seen* him (Peyton)
   p. I *seen* one running across the street downtown yesterday (Springfield)
   q. I *seen* some in the store a while back (Springfield)
   r. He *seen* me next day (Springfield)

Nine informants used at least one of the three participles mentioned above as preterits in their interviews; however, none of the individual verb forms correlated significantly with any of the social variables tested nor was statistical significance revealed when the three forms were collapsed.

The corpus also provides evidence of four forms typically used as preterits in the data that are occasionally used as participles following an auxiliary verb: viz. *blew, broke, went,* and *wore*, as shown in the following examples:

3.a. You can get *blew* out. (Springfield)
b. …a different oxen with what they hadn't been *broke* with. (Black Hawk)
c. A horse that hasn't been *broke*. (Idalia)
d. One that's never been *broke*. (Springfield)
e. The folks had *went* there. (Idalia)
f. We have *went* and looked to see… (Peyton)
g. …that have *went* to the same fireplace. (Pagosa Springs)
h. …some have *went* to… (Pagosa Springs)
i. My dad might have *wore* suspenders. (Lamar)

No significant correlation was found between the use of these verb forms and any of the social variables that were tested for this study.

Personal Forms of the Present Indicative

Atwood examined several personal forms of the personal indicative, including *I says* 'said', which he reported to be a narrative strategy in discussing conversations. In northern New England, he found the form to be widespread in almost all communities surveyed and noted that the form was used by both old-fashioned and modern informants but not usually by cultured informants. In southern New England, Atwood found the structure to be uncommon, except among old-fashioned speakers. Atwood does not discuss the distribution of the form outside the New England area.

In the Colorado corpus, the *says* form is used by several people in narrative discourse. *I says*, which is the focus of Atwood's work, is used only by the informants in Kremmling and Hygiene, but eight informants used *he says* in the interviews, three informants used *she says*, and the primary Lake City informant used the *says* form with nonpronoun referents, e.g. "one guy says to his partner" and "the sheriff says to these agents."

In addition to its significance with field worker, which will be addressed below, *he says* is significant for grid row, as shown in Table 6.1:

Table 6.1: Correlation of *he says* with Grid Row of Informant

p < .034		GRID ROW				
		H	I	J	K	Total
he says	0	1	4	5	5	12
	1	4	1	1	0	9
Total		5	5	6	5	21

The form is used by four of five informants (80%) in grid row H but is used by only one informant apiece in both grid rows I and J and is not used by any informants in grid row K.

When the northernmost grid rows and the southernmost grid rows are collapsed, it is apparent that the form is used infrequently in the southernmost rows, as only one informant uses the term, as shown in the table below:

Table 6.2: Correlation of *he says* with Grid Row of Informant (Collapsed)

p > .043		GRID ROW		
		H + I	J + K	Total
he says	0	5	10	15
	1	5	1	6
Total		10	11	21

When the northern row is isolated and the other grid rows collapsed, there is also statistical significance, as shown in the following table:

Table 6.3: Correlation of *he says* with Grid Row of Informant (Collapsed)

p > .004		GRID ROW		
		H	I + J + K	Total
he says	0	1	14	15
	1	4	2	6
Total		5	16	21

None of the social variables associated with informants significantly correlated with the use of *I says* or *she says*; however, when collapsed into a single table, the collapsed *says* forms are significant for year of birth, as shown below:

Table 6.4: Correlation of *(*) says* with Informant's Year of Birth

p < .036	YEAR OF BIRTH			
	Earliest	Middle	Latest	Total
(*) says 0	2	5	6	13
1	5	3	0	8
Total	7	8	6	21

No informants born in the most recent years used the *says* form, but a majority of informants in the earliest category of years of birth used the form and use was mixed in the middle category.

The use of the *(*) says* form is also associated with origin of informant's mother, as seen below:

Table 6.5: Correlation of *(*) says* with Origin of Mother

p < .042	ORIGIN OF MOTHER			
	Colorado	Great Plains	Elsewhere	Total
(*) says 0	4	5	4	13
1	7	1	0	8
Total	11	6	4	21

The majority of informants whose mothers were born in Colorado used the *says* form, while only one informant whose mother was born elsewhere used the form.

The *(*) says* variant also significantly correlated with field worker as all but one of the forms occurred in interviews conducted by Newton, as the table below illustrates:

Table 6.6: Correlation of *(*) says* with Field Worker

p > .009	FIELD WORKER		
	Newton	Antieau	Total
(*) says 0	3	10	13
1	6	1	7
Total	9	11	20

Newton elicited the *(*) says* form in six interviews, while I elicited it only in one interview.

As part of his study on personal forms of the present indicative, Atwood (1953: 28) also discusses the use of *he doesn't.* He found that the variant *he don't* was most commonly used among Type I informants, as well as two-fifths of the cultured New England informants, but that the use of the form

decreased the younger and better educated an informant was. In the Middle Atlantic States, Atwood found *he don't* to be nearly unanimous among Type I and II informants, and he found that nearly three-fourths of the cultured informants used the form in that area as well; only in New York and New Jersey did he find that cultured informants did not use *he don't*. In the South Atlantic States, Atwood found *he don't* to be universal among Type I and Type II informants, but only about half of the cultured informants in the region used the form.

Several examples of the use of *don't* with the singular pronoun forms surfaced in the Colorado corpus, as listed below:

4.a. He *don't* have nobody take care of him (Lake City)
b. It *don't* take much to kill a duck (Alamosa)
c. It *don't* come through. (Walden)
d. It's in there but it *don't* come out. (Lake City)

The forms *he don't* and *it don't* were used too infrequently to undergo statistical analysis; however, when the two forms were collapsed, significant correlation was found between the use of the feature and the origin of the informant's father, as shown in the table below:

Table 6.7: Correlation of *(*) don't* with Origin of Father

p < .016	ORIGIN OF FATHER			
	Colorado	Great Plains	Elsewhere	Total
(*) don't 0	3	10	5	18
1	3	0	0	3
Total	6	10	5	21

The *don't* form with a singular pronoun is significant for origin of father with the only informants using the form being those whose fathers were born in Colorado.

Number and concord

Atwood examined the use of plural pronouns with the singular past tense copula and found that *you was* was nearly universal among Type I informants in northeastern New England, the Middle Atlantic

States, and the South Atlantic States, and he also found that it was the predominant form among Type II speakers in these areas as well. *We was* was also the predominant form among Type I and Type II informants in New England, the Middle Atlantic States, and the South Atlantic States, but it was rare among cultured informants.

With respect to subject number (singular vs. plural) and verb agreement, or concord, I examined the relationship of plural subjects (including you) with the past tense form of the verb *be*, i.e. *was/were*. So far, I have primarily restricted my study of subject-verb nonconcord in the Colorado corpus to the regularization of *was* (Wolfram and Schilling-Estes 1998: 79) because it is in these copula constructions that it occurs most frequently in the corpus.

Specifically, I looked at the issue with respect to the pronouns *we, you,* and *they*; sentences found in the corpus that employ the singular verb form *was* with plural pronouns include the following:

5.a. …*we was* out choring… (Kremmling)
b. …*they was* breathing the oil with the rock in it. (Black Hawk)
c. …because they *was* made out of jute, burlap. (Del Norte)
d. Well*, they was* supposed to have come over on the Mayflower (Del Norte)
e. But Dad tells about when *they was* punching cows (Del Norte)
f. Well, *we was* supposed to be, but I fooled them. (Del Norte)
g. …*we was* supposed to get a basket or what to hold (Del Norte)

I tested only plural pronouns used with *was* and did not test other plural subject forms; the general distribution of *was* regularization in the Colorado corpus is that it is used more frequently after *they* (12 informants) than after any other pronouns: It occurs with *we* in interviews with eight informants and after *you* with seven informants.

Although *they was* and *you was* did not significantly correlate with any of the social variables that were tested for this study, the variant *we was* is significant for origin of father, as shown in Table 6.6 below:

Table 6.8: Correlation of *we was* with Origin of Father

p < .016	ORIGIN OF FATHER			
	Colorado	Great Plains	Elsewhere	Total
we was 0	6	3	4	13
1	0	7	1	8
Total	6	10	5	21

No informant whose father was from Colorado used *we was*; however 70% of those informants whose fathers were born in the Great Plains states used the form, and one informant whose father was from elsewhere used the form.

Statistical testing of all the forms of *was* showed significant correlation between the use of the form and two social variables – education level and sex of informant – as shown below:

Table 6.9: Correlation of *(*) was* with Education Level of Informant

p < .044	EDUCATION			
(*) was	Lowest	Middle	Highest	Total
0	0	3	4	7
1	7	5	2	14
Total	7	8	6	21

As this table shows, the use of the *was* form with a plural pronoun occurred in each of the interviews with people who had attained no more than the lowest education level, but it does not ever occur among college graduates and only occurs once in the speech of those informants who were categorized as the middle level with respect to formal education.

Table 6.10: Correlation of *(*) was* with Sex of Informant

p > .035	SEX		
	Male	Female	Total
(*) was 0	1	6	7
1	9	5	14
Total	10	11	21

As Table 6.8 shows, the percentage of males that used the *(*) was* form in the Colorado corpus was nearly double that of the percentage of females (90% vs. 45.5%).

Negative forms

With the exception of the examination of *don't* above, the only negative form that I selected for analysis was the use of *ain't* in the interviews. Atwood found that *ain't* was used only by old-fashioned informants and that the form was avoided by modern informants. The following sentences show how *ain't* is used in the Colorado corpus:

6.a. …and we *ain't* got a damn thing to eat (Kremmling)
b. Well, Creede *ain't* a town (Lake City)
c. I'll bet it *ain't* had a water dog in it... (Lake City)
d. My mind *ain't* very good. (Lake City)
e. *Ain't* that funny? (Lake City)
f. That pavement *ain't* over three and a half miles long (Lake City)
g. They're where they *ain't* married. (Peyton)
h. *Ain't* no use in wasting. (Pagosa Springs)
i. My mom, mom *ain't* here. (Pagosa Springs)
j. *Ain't* it? (Pagosa Springs)
k. *Ain't* no trains but there's a railroad station. (Pagosa Springs)
l. You *ain't* going to catch me. (Alamosa)

Ain't is used in the Colorado informants by five informants total, but it is significant only for field worker, as shown in Table 6.11:

Table 6.11: Correlation of *ain't* with Field Worker

p > .049		FIELD WORKER		
		Newton	Antieau	Total
ain't	0	9	7	16
	1	0	4	4
Total		9	11	20

Ain't was never elicited by Newton, but four of my informants used the form, and Preston's informant used the form as well.

Infinitive and Present Participle

With respect to Atwood's discussion of infinitives and present participles, I focus on a-prefixes, which is the use of an a-prefix with progressive verbs to create such forms as *a-coming* and *a-going.* While the origins of a-prefixing are uncertain, some scholars have suggested that a-prefixes are created by a process in which the preposition *on* is phonetically reduced to *a* before being conjoining to the following verb form (Jespersen 1933); Antieau (2001) shows how this process might be the result of grammaticalization.

The dialectological literature suggests that a-prefixing has an association with Southern varieties of English (e.g. Feagin 1978, Wolfram 1980, 1988, Burkette 2001a); however, Wolfram and Schilling-Estes (1998) characterize a-prefixing as a rural phenomenon rather than as a southern one. Antieau (2001) found evidence of a-prefixing in Atlas records throughout the eastern states.

. This feature is used by several of the Colorado informants, as illustrated in the following data:

7.a. …a article in it that's been *a-worrying* me for years. (Kremmling)
b. …been *a-setting* here all this time (Kremmling)
c. …we got our water and sewer system *a-going*. (Lake City)
d. …main instigators of getting the medical center *a-going.* (Lake City)
e. See when the town was *a-going* they took the water out… (Lake City)
f. Had gotten my U(H) spread out on the chair and *a-sitting*… (Peyton)
g. Get that separator *a-going* around good and let loose… (Peyton)
h. …we had one that was *a-pecking* on the U(H) metal (Peyton)
i. And one day we were U(H) *a-going* down the road (Peyton)
j. I seen some things *a-hanging* in a tree back there (Peyton)
k. plumb full of bacon and them hams *a-hanging* up there... (Del Norte)
l. I'm *a-helping* you write your paper. (Del Norte)
m. …were pondering, *a-wondering* what they should name it (Durango)

Six informants used a-prefixing in the Colorado corpus, but no statistical significance was found between the use of a-prefixing and social variables that were tested in the study.

Phrases

Of the phrases that Atwood discusses in the section on phrases in his book (1953: 35-36), only the double modal *might could* appears in the Colorado corpus. Typically associated with Southern American

English (see for example Atwood 1953, McDavid 1958, Butters 1973, Feagin 1979, DiPaolo 1986), the use of two double modals in speech by the Springfield informant is worth mentioning here:

8.a. I've got a book. I *might could* look that up for you later on. (Springfield)
b. They *might could*. I don't know about them. (Springfield)

Although this variant occurs infrequently in my corpus, one should note that double modals are not out of the question in Colorado English.

In addition to the use of double modals by the Springfield informant, one other modal usage should be mentioned here. There is one use of a simple modal in a position in which many speakers would only use a periphrastic modal, such as *be able to*:

8.c. I *used to could* count to a hundred in Spanish. (Kremmling)

This is interesting in that some descriptive studies of English grammar argue that simple modals like *could, would, should* (as opposed to periphrastic modals like *be able to*) appear only at the beginning of verb phrases.

Quantifiers

Although not elicited in the early Atlas interviews and, therefore, not part of analyses based on those records, sentences containing the word *anymore* and yielding a positive interpretation, as in "All the kids drive SUVs *anymore*," in which *anymore* is used synonymously with *nowadays,* have been the subject of several studies of American English since the early 1970s (Labov 1972, Hindle 1975, Wolfram and Christian 1976, Youman 1986, Murray 1993, and Murray 2004). Generally considered a Midland form (see Murray 1993), the construction occurs often in the Colorado corpus:

9.a. Yeah, I guess that's the term, but there's sure a lot of them around *anymore* (Del Norte)
b. …a lot of them *anymore* are lined with a plastic…(Lake City aux.)
c. *Anymore* they use a lot of … (Pagosa Springs)
d. And *anymore* they've got a masculator they call it. (Springfield)
e. They've got so ornery about things *anymore* they U(H) they carry

them… (Springfield)
f. Oh we have meadow larks and turtle doves and we have a lot of robin *anymore.* (Idalia)
g. Oh *anymore* we have bluegrass and brome and smilo grand [?]. (Idalia)
h. Well it's getting so a lot of them are cremated *anymore*. (Leadville)
i. *Anymore* I think I'd think it was too greasy any, *anymore* but when we was kids U(M) it didn't make any difference. (Kremmling)
j. but *anymore* they come out here and know more (Kremmling)
k. dudes *anymore* is going to know more than us (Kremmling)
l. Most, mostly all cattle around here *anymore*. (Kremmling)

That positive *anymore* would be prevalent among Colorado speakers is not surprising. With respect to the areal distribution of the feature, Wolfram and Schilling-Estes (1998: 142) find it used in central Pennsylvania, Ohio, and Indiana, and westward into Missouri, Utah, and a number of western states, as well as the mountainous regions of the South. Furthermore, there is a growing body of evidence of the spread of the construction throughout the United States, including the West (Murray 2004). There are no statistical correlations between the use of positive *anymore* and the social variables of the informants that were tested.

Sociolinguistic Variation in Colorado Syntax

Although the number of syntactic features that significantly correlate with social variables in the Colorado corpus is not high, the ones that do occur are distributed across several social variables that were tested in this study, as shown in the table below:

Table 6.12: Significant Correlations between Social Variables and Syntactic Variants

Social Variable	**Syntactic Variant**	
Father	we was	(*) don't
Grid Row	he says	
Mother	(*) says	
Year of Birth	(*) says	
Education	(*) was	
Sex	(*) was	

As a social variable, origin of father has the most syntactic variants associated with it statistically with two, while origin of mother, year of birth, education, sex, and grid row each have one syntactic variant

with which they are significantly correlated. Of those syntactic variants that do appear to have a significant correlation in the corpus, two of the features are shared by two social variables, as in the case of *(*) says* correlating with both origin of mother and year of birth, and *(*) was* correlating with both education level and sex of the informant.

Interestingly, no syntactic variants significantly correlate with region (although one does with grid row, which is related to region). Atwood found some variants with a regional distribution in his data but points out that geographical lines between the distribution of verb forms were not distinct (1953: 38). Among the forms that Atwood did find in relatively clear distributions (as presented in his Table 1, p.40), only two appear in this study – *seen* as preterit, which Atwood characterized as chiefly Midland, and *might could*, which he characterized as chiefly Southern (although he notes some use of the double modal in the Midland region, primarily in the German area of Pennsylvania). The regional distribution of syntactic forms in the eastern United States does not seem to have a direct bearing on the statistical significance of several syntactic forms in this study with the origin of informants' parents, as the syntactic variants linked with parental origin in this chapter are significant in their absence in interviews conducted with informants whose parents were from the East, as opposed to being from the Great Plains or Colorado.

Among the syntactic forms examined in this study, only the correlation of the *(*) was* form clearly relates to sociolinguistic notions of prestige in linguistic usage, as shown in the correlation of *(*) was* with the least-educated speakers in this survey, and its heavy use among male informants, while being used by fewer than half the female informants in the survey, a finding I will return to below.

While statistical testing found several syntactic variables that significantly correlated with social variables that were tested in this study, including origin of father, sex of informant, grid row, and field worker, there are few enough syntactic variants under study here that a more comprehensive examination of their use is possible. In the following table, I present the use of variants that were selected for this study and their use by individual informants:

Table 6.13: Syntactic Features Used by Colorado Informants

	Syntactic Variants										
Informants	past tense	part./ pret.	pret./ part.	says	don't	was	ain't	a-prefix	double modal	anymore	Totals
Walden				X	X	X					3
Kremmling		X		X		X	X	X		X	6
Black Hawk		X	X	X		X					4
Hygiene	X	X		X		X					4
Sedgwick		X				X				X	3
Meeker											0
Leadville										**X**	1
Buena Vista				**X**							1
Idalia		X	X			X				X	4
Limon										**X**	1
Lake City				X	X	X	X	X		X	6
Lake City(a)										**X**	1
Saguache											0
Beulah		X				X					2
Peyton		X	X			X	X	X			5
Lamar	X		X	X		X		X			5
Durango	X							X			2
Del Norte				X		X		X			3
Pag. Springs	X	X	X			X	X			X	6
Alamosa		X			X	X	X				4
Springfield		X	X			X		X	X	X	6
Totals	5	10	6	8	3	14	5	7	1	10	69

As Table 6.11 shows, of the features under study here, the regularization of *was* is the syntactic feature used by the highest number of Colorado informants (n=14); the use of participles for preterits and the use of positive *anymore* are next, being used by 10 informants apiece. The use of *says* (eight informants) and a-prefixing (seven informants) also rank high in use among Colorado informants. On the other hand, use of the double modal might could is restricted to a single informant and use of *don't* after a singular pronoun only occurred in interviews with three informants.

Ranking by frequency of informants who use the selected syntactic variants resulted in Table 6.12, shown below:

Table 6.14: Rank of Syntactic Variants in the Colorado Corpus

Rank	Syntactic Variant	Number of Informants
1	(*) *was*	14
2	participle for preterit; positive *anymore*	10
3	(*) *says*	8
4	a-prefixing	7
5	preterit for participles	6
6	irregular past tense; *ain't*	5
7	(*) *don't*	3
8	double modal	1

Among the highest ranking features, positive *anymore* and *says* are unique in that several informants used these features who did not use other features under study here (three informants used positive *anymore* and no other syntactic variants under study here; one informant used *says* and no other syntactic variant under study here). On the other hand, use of *ain't* is restricted to those informants who used a relatively high number of syntactic variants under study here (three informants who used *ain't* used six of the syntactic variants, one used five, and one used four).

With respect to individual informants in the study and their use of the syntactic features under study, there is no clear leader in the use of these variants, as four informants use six variants and two use five variants. The rank of informants by number of syntactic variants they used is as follows:

Table 6.15: Rank of Informants by Number of Variants Used

Rank	Informants	No. of variants
1	Kremmling, Lake City, Pagosa Springs, Springfield	6
2	Peyton, Lamar	5
3	Black Hawk, Hygiene, Idalia, Alamosa	4
4	Walden, Sedgwick, Del Norte	3
5	Beulah, Durango	2
6	Leadville, Buena Vista, Limon, Lake City (aux)	1
7	Meeker, Saguache	0

There are, however, only two informants (Meeker and Saguache) who do not use any of the forms. There are also four informants who use only one syntactic form apiece (as mentioned above, three of these informants use positive *anymore* and one uses the *says* form).

While no statistical correlation was found between the region of informants and the use of syntactic variants, ranking informants by frequency of forms used does show a regional pattern, namely, that four of the five plains informants use three or more syntactic variants, while only one plains informant uses fewer than three syntactic variants. The distribution of both mountain and southwest region informants is more mixed with one informant from each region in each of the ranks, except for Rank Two, which has one informant from the plains and another from the mountain region.

With respect to social variables, education apparently plays a role in how many forms are used: Only one of the informants using three or more syntactic forms is in the highest education group, as the Idalia informant uses four variants; the others in the highest group use two or fewer of the syntactic variants discussed here. Of the lowest educational group, all use three variants or more, as two use six variants, two use five variants, two use four variants, and one uses three variants.

Sex of informant also seems to have an effect on the syntactic choices informants make, not only as shown in the statistical testing of *(*) was,* as shown in Table 6.10 above, but also, as it is shown in the rank of informants in Table 6.13. All four informants who rank first with the use of six variants are male, while only two informants who use two or fewer variants are male. This result is in line with the claim by some researchers that women often avoid nonstandard linguistic forms due to social pressures to be linguistically correct and polite, while men often use nonstandard forms to show they are tough and can break rules (Chambers and Trudgill 1980: 85). However, a closer examination of the table reveals a greater level of complexity, as both informants who rank second with their use of five variants are female. Furthermore, more work will need to be done to rank each of the syntactic variants in terms of saliency and attitudes about the variant if a strong claim is going to be made about the sex of informants and grammar usage. For instance, use of a variant like positive *anymore* might not have the negative connotations attached to it that irregular past tense or *ain't* do, but this will need to be the topic of future research.

Overview of Syntactic Variation in the Colorado Corpus

Despite the prediction by earlier researchers on Colorado English, such as Kimmerle, McDavid, and McDavid (1951), that some grammatical differences would be eliminated in the Rocky Mountain region due to dialect leveling and the effect of mandatory education, an examination of the syntax of the Colorado corpus reveals several variants that occur frequently, several of which are significantly correlated with social variables tested in this study, particularly education level and the biological sex of the informant. As not all of the informants who were interviewed for this project finished high school, it may be too early to tell whether mandatory education will have the effect that Kimmerle et al. (1951) proposed that it would.

Although no statistical correlation was found among any of the regions that informants lived in and any of the syntactic variants tested here, an examination of the frequency of variants that informants used and region showed that region might play a part in overall variant usage. The use of statistical tests and ranking tests in this study suggest that a method combining both approaches can be used to find relationships between social variants and linguistic variants that might not be revealed using a single test; furthermore, findings of one test may be supported by similar findings in a second test, as is shown by the significance of education and sex using both approaches.

There has been little study of syntactic variation in the West, especially outside of Oklahoma and Texas, and those that do have often examined syntactic constructions typically associated with the American South, e.g. Launspach and Graham's (2004) study on personal dative use in Idaho. This section of the dissertation suggests that further study should be conducted on syntactic variation in Western American English.

CHAPTER 7

CONCLUSION

In the latter half of the 19th century, the lure of mineral riches and inexpensive land in the West attracted the first sizable migrations from the eastern United States, and the notion of the "Wild West" began to take its hold on the American psyche. For many, the American holdings west of the Mississippi River conjured a land of new beginnings, new opportunities, and new experiences. And, in many ways, these preconceptions were accurate, given some of the vast differences between the eastern and western United States in terms of topography, weather, and plant and animal life, and the effect these differences would have on daily life of the early Westerners and economic opportunities available to them as a product of these differences.

Although most of the easterners who migrated to the West in its early days spoke a dialect of American English associated with one of the eastern dialect regions, they were compelled to find new ways of using their dialect to linguistically represent the new and, in many ways, unfamiliar environment that they now lived in. At the same time, the early settlers came into contact with speakers of other dialects of English and of other languages, particularly Spanish, which also had an influence on how they talked about their new environment.

Our knowledge of the West as a dialect region in part reflects the history of the region. There has been a great deal of Atlas study in various localities of the West, but there has been little attempt to compile these efforts into a comprehensive study of the region in a manner comparable to work done in the eastern United States. Studies that have dealt with the variety of American English spoken in the region, such as Carver (1987) and Labov, Ash, and Boberg (1997), have done so in a manner that begins with the notion of the West as a cohesive linguistic unit and then finds evidence in the lexicon and the phonological system, respectively, supporting this characterization. Although these studies provide us with some empirical evidence of Western speech, they do not provide the foundational data that Atlas

studies were designed to compile using primary data that show linguistic differences among regional and social groups.

There are several good reasons for conducting Atlas research in the West at this time, and one of these reasons is that depictions of American English have gone long enough without a clear indication of the nature of western speech that Atlas studies provide for. Phonological research, such as that conducted by Labov et al (1997) need the foundation that Atlas work provides to make the best generalizations, as do sociolinguistic studies of urban centers. But the best reason for conducting more research in the West is the speech itself. As Pederson (2001: 288) has argued:

> …Western dialects suggest the immediate future of the national language more reliably than any other regional pattern. As products of American social history since the Civil War, local speech of the West incorporates features from eastern sources and reforms them across the plains, mountains and coastal subdivisions of the Western states.

Thus, for those scholars interested in language variation, particularly in American English, a study of data collected in the American West is imperative for an understanding of the national variety of English as it is now and as it might sound in the future.

As western dialects of English are relatively new, so it might be fitting that we use more recent models of language variation to investigate them. Kretzschmar (2000: 36) notes in his proposal for a postmodern dialectology that "[w]hile language variation carries on with gusto, it is harder and harder to characterize observed linguistic differences according to the old familiar regional terms, or even according to newer classifications of social dialects." For instance, rather than use recently-collected data to devise bundles of isoglosses that imply categorical distinctions between dialect regions, an older Atlas practice that proved especially problematic in the West (see Kimmerle et al. 1951, Hankey 1960), the current study has taken the stance "that many variants are significantly associated with social characteristics, and that the same variant may be significantly associated with multiple sociocultural characteristics at the same time" (Kretzschmar and Tamasi 2001: 2). Furthermore, this dissertation adopts the postmodern approach that "[i]f individuals must assess the participants and the linguistic features in

any use of language, then we must have some independent idea of how linguistic features might be correlated in practice with people of different cultural characteristics before we can understand perception and production" (Kretzschmar 2000: 237). Thus, the current study is not only an examination of Colorado English but is an investigation into the use of English and its correlation with a host of regional and social variables.

This study is the first broad survey of a state using the framework of the Linguistic Atlas of the Western States, and as such, this dissertation serves first as an overall description of current aims and methods in collecting data in the West, proceeding from the creation of the LAWS grid for Colorado and the construction of worksheets in the office, moving through the selection of communities and the interviewing of appropriate informants in the field, returning to the office to transcribe field records, analyze protocols, and research new ways of distributing data to other scholars of American English. It is the first step toward the completion and distribution of work from the Linguistic Atlas of the Rocky Mountain States (LARMS) for which interviews previously conducted in Wyoming and Utah await transcription, analysis, and integration into a dataset that can be distributed in the manner set forth by Pederson (1990).

Colorado provides an interesting environment as the starting point for analysis of LAWS field work because of its status as a cultural crossroads; as Abbott, Leonard, and McComb (1994: 11) have argued, "Colorado is, in fact, the meeting point for three major sections within the American West…The Rio Grande ties the state to the Southwest, the Colorado to the range and plateau country of the Mountain West, the South Platte and Arkansas to the Great Plains." In other words, the main ingredients of the West can be found in Colorado, and perhaps more than any other state, these ingredients have historically had fairly clear lines of separation that are still in some ways present today.

Colorado is also an important piece of the western puzzle because work was conducted earlier in the state, under the direction of Marjorie Kimmerle, and the field records of this work is archived and available to the academic community at the Norlin Library at the University of Colorado at Boulder. This work has been presented to some extent by Kimmerle et al. (1951), as well as Kimmerle (1950, 1952),

and it was followed by dissertations by Jackson (1956) and Hankey (1960) that each provide a description of the social and linguistic fabric of Colorado at a formative time in the history of the state that can serve as aids to understanding how the speech of the state arrived at the state it is in today. While many of the methods and assumptions of dialectology have changed since these earlier studies were conducted, they provide linguistic data and observations on language use that can benefit modern discussions of American speech in Colorado today.

While there is a great deal of data presented in this study, it is only a subset of the entire set of Colorado data, as the fact the field records collected in the state were tape-recorded and transcribed in their entirety enables their use for any of a number of linguistic inquiries, including discourse analysis and pragmatics. This dissertation presented data on the linguistic levels that have traditionally been the focus of dialectological research – the lexicon, phonetics, and syntax – and focused on results that are comparable to data collected earlier in the eastern United States and Colorado. It also tries to shed some light on several linguistic phenomena that are of interest to modern dialectologists, including monophthongization, the so-called "*cot-caught* merger," and the use of *positive anymore*. For those researchers who are interested in other facets of the interviews, the field records will be made available via a website for the Linguistic Atlas of the Western States in the future.

The analyses of Colorado data that were conducted for this dissertation brought to light several problems at the stages of field work and analysis. At the level of field work, the use of multiple field workers with differing styles created some problems in the analysis, most of it due to an imbalance in the types and number of variants collected by one field worker and not the other. Each field worker brings certain strengths and weaknesses to the interviewing process, creating problems in the comparability of forms, or in how the presence or absence of certain linguistic forms in the field records should be properly interpreted.

This is, of course, not an easy problem to rectify and scholars have different ideas on how to control differences in field worker styles beyond the mere implementation of interview worksheets. Pederson (1990) calls for as few field workers as possible in his LAWS proposal; however, some scholars

have noted that the use of too few field workers can be problematic in that the weaknesses of one field worker become magnified in the corpus (Bailey and Tillery 1999). But the best number of field workers for LAWS is dictated by practical concerns, as well as theoretical assumptions.

That there must be a greater number of field workers than the six or seven the original LAWS plan calls for in order to cover the West (Pederson 1990: 10) is apparent if only because of practical concerns. The great area covered by each state and the great distances between the grid units selected for this study alone is enough to warrant such a modification to the original plan. This has been especially true due to the long distance between those areas requiring coverage and the schools from which field workers have been recruited (Emory University and the University of Georgia). Bridging the gap between the region that is being studied and the location of trained field workers willing and able to do the work is one of the first steps that should be taken toward the completion of this project. The enhancement of the current web site for the Linguistic Atlas of the Western States is intended not only to appeal to scholars interested in working with data that has been collected in the West but to encourage potential scholars to conduct field work in the grid units that are required for completion of the project.

While allowing for a greater number of field workers than was called for in the original plans is perhaps necessary for completing LAWS, the problems in producing comparable results is something that cannot be ignored. Perhaps the most important step in alleviating such differences is training in which potential field workers not only listen to and critique earlier field records, but conduct transcription on the records created by earlier field workers and their own work as they conduct interviews in the field. The individual styles of field workers do not have to, nor should they, conform to a romantic notion of "the perfect interview" or aspire to be exactly like another field worker's styles; rather, field workers should learn what works and what does not work by critiquing their own work and others as they go through the process of becoming an Atlas field worker.

The statistical testing measuring field worker effect that was presented in this study can be conducted to determine when differences in field worker styles are having a significant influence on the data that is elicited. It should be noted that the problem of varying results in interviews is not only found

among the differences of multiple field workers, but differences in a single field worker as the field worker gains experience and modifies his or her interviewing technique. Because of such problems in collecting comparable data, the main benefit of LAWS methodology is the ability to see and hear what transpired in the interviews. By providing numbered references to specific parts of the interview, those interested in learning more about facets of interviews can isolate specific parts of the interview to conduct their own analyses of the data or to determine whether scholars. Ultimately, however, scholars should realize that Atlas interviews are speech events held between two or more participants and should ultimately be judged on such terms.

In addition to field worker effect, there were problems at the analytical stage of the dissertation. Most importantly is that there were too few informants for statistics to do as much as work as was desired. This was especially problematic when determining appropriate social categorization. For instance, the range of age was small and statistics could not be used on age categories that are traditionally used, such as by decades, simply because the number of informants in each category would be too small for statistics to work very well on that set. Therefore, social categories had to be determined in part on an appropriate distribution across categories for statistical testing to be conducted. This was also the case for the levels of education and origin of parents.

As more work is done in the western states, and even in Colorado, problems at both the collection and analytical stages should be alleviated to some extent simply by the greater numbers of interviews that are conducted. A greater number of informants should help to create a situation in which external methods of creating social categories can be implemented and applied to the data. Additionally, more inductive statistics that do not rely on preselected categories may also be conducted on the data in future work. Finally, the availability of both the field records and the transcripts of LAWS interviews enables researchers to apply any of a number of analytical procedures to the data, including qualitative methods that do not rely on statistical analyses.

Despite some shortcomings, several interesting phenomenon were brought to light that should bear some influence on how we look at Western American English in general and Colorado English in

particular. Linguistic data collected in Colorado as part of the LAWS project and presented in the current study depict a variety of English comprising linguistic variants associated with dialect regions in the eastern United States, as well as vocabulary items borrowed from the Spanish language used by the state's large Hispanic population. Indeed, it is the mix of these English linguistic elements from all dialect regions of the United States, including the Pacific West, and Spanish that serves as one of the defining characteristics of Colorado English; the variety also includes vocabulary denoting physical and cultural artifacts that are common to the western United States and are little known in the East. Finally, a characteristic of Colorado English is that it uses lexical items from the dialects of eastern American English as well as Spanish in new ways. While there are few if any linguistic elements used in Colorado English that are unique to this variety of English, the combination of speakers of diverse linguistic backgrounds dealing with an environment comprising physical artifacts not found in other regions of the United States has created an interesting variety of speech used by inhabitants of the Centennial State.

Partially due to the way that the variety of English spoken in Colorado was created, the distribution of linguistic variants in the Colorado datasets, particularly those related to the lexicon, follows the power law first applied to linguistic data by George Zipf (1949), modified by Mandelbrot (1983), and applied to Atlas data from the eastern states by Kretzschmar and Tamasi (2001). Rather than finding qualitative differences in which a target prompt elicits only one variant, one often finds in the inventories of linguistic items in the Colorado corpus a situation that is much in line with the findings in other large data sets, including data from the Linguistic Atlas of the Middle and South Atlantic States:

> What is truly stable and systematic about this situation is the curve itself, not any perceived system of arrangement of variants. The 'orderly heterogeneity' that Weinreich, Labov, and Herzog attributed to language, we would argue, belongs more properly to frequency distributions than to contingent systems, whether perceptually generated or merely abstract (Kretzschmar and Tamasi 2001: 20).

That is, in Colorado English, as in other varieties of English, one does not necessarily find situations in which there are neat rows of lexical items, nor are there many opportunities for the drawing of isoglosses between regional or social categories.

This observation of the distribution of linguistic items is not only at odds with some of the assumptions of earlier dialectology, but it is also at odds with some of the predictions that were made about the future of Colorado English based on those assumptions. For instance, some of the lexical variants that were considered old-fashioned or relic at the time of the first Colorado Atlas collection has not been one toward obsolescence as predicted, calling into question a model of language change postulating only three possible paths for linguistic variants: 1) introduction; 2) continued use; and 3) obsolescence. While there are many examples of lexical items that do follow such paths in the Colorado corpus, a comparison of Hankey's findings and my own shows that some of the items Hankey thought to be on their way to being lost in the Colorado lexicon still persist in the Colorado lexicon today. This suggests the possibility of regeneration for a lexical item, even if only a small number of older speakers use it at some point in time. More generally, an inventory of items in the Colorado corpus shows that some items have remarkable resilience in the speech of the individuals of a speech community, a finding also noted by Burkette (2001b), Johnson (1996), Kretzschmar and Tamasi (2001), and others, revealing the flaws in models of language change that assume that one variant will be adopted at the expense of all others.

With respect to the phonetics in the Colorado corpus, this study found that speakers had a smaller number of phonetic variants that they could select for each target item than they did lexical variants, which was a not unexpected finding considering the differences between the lexicon and pronunciation. There were, however, competing phonetic variants throughout the dataset, despite the application of broad impressionistic phonetics to the data. The phonetic analysis also found several phonetic variants with statistically significant social correlates. Like the lexical analysis, the phonetic analysis conducted in this study is also at odds with the notion that was put forth by earlier scholars (e.g. Hankey 1960) that Colorado English would coalesce into a single dialect.

A more thorough analysis of phonetic details related to the merger of /ɑ/ and /ɔ/ in the corpus suggests a more complex picture of the merger in Colorado than has been depicted in other accounts, such

as Labov et al. (1997). Rather than the situation of almost total merger that Labov et al. (1997) found among younger, urban informants in their study, the data collected from the elderly, rural informants in this study provide evidence of a range of possibilities for pronouncing variants of different historical word classes. Furthermore, social data from this part of the current study suggests that the merger is more common among women than men. While differences between the two analyses might be the product of differences in methodology, as the LAWS work is designed to elicit more detailed data, the difference might show a change in progress, as the older women in the Colorado data apparently adopted a newer innovation in American English. Further research should be conducted on both sets of data in order to better describe the differences among them.

Finally, the study examined syntactic variation in the Colorado corpus. Using a preselected inventory of forms from Atwood (1953), this analysis only focused on whether informants used specific variants or not; however, even this modest approach turned up evidence of syntactic variation in the corpus that were unexpected, due to the relative formality of the interview situation and the effect that most people have thought that mandatory formal education would have. Nevertheless, several nonstandard tense forms occur throughout the interviews, as well as the use of the double modal *might could* and numerous examples of a-prefixing. Although of the three linguistic levels that were examined in this study, syntax had the fewest sociolinguistic correlates in the Colorado corpus, further study using more inductive means of examining syntactic variation might reveal that certain social variables have a greater influence on the grammar of an individual than the current study suggests. This, however, will need to be the subject of future research.

As a statistical analysis of the relationship of linguistic variants and social variables, this study found significant correlation between a variety of linguistic items and the social characteristics of the speakers who used them during the course of interviewing. First of all, the entire set of social variables that were tested in this study were found to have significant linguistic correlates in at least one of the linguistic levels that were examined, and several social variables had significant correlates at each of the linguistic levels examined in this study. Furthermore, each of the three linguistic levels was found to

have several social correlates, and that analysis of the lexicon revealed statistically significant correlates in each of the social categories that were selected.

An interesting finding of this study was that specific social characteristics varied in their influence at each linguistic level. For instance, region was shown to have a great influence on lexical choices made by speakers, due at least in part to differences in the artifacts of each region that speakers are inclined to denote with lexical items; however, it had less influence at the phonetic level and no statistical correlates were found at the syntactic level. The relative strength of region in influencing the lexical choices that speakers make and its relative weakness with respect to other aspects of speech, as well as the types of lexical variants that region has a bearing on, suggest that these differences are not determined by settlement patterns but by differences in how speakers of different regions deal linguistically with the different environment that characterize these regions.

On the other hand, other variables played a relatively weak role in shaping lexical choices made by speakers in the Colorado corpus, but they appeared to have a relatively strong influence with respect to other facets of speech. For instance, the variable of education played no significant role in pronunciation differences, but its influence at the syntactic level was comparable to that of the other social variables that were examined. Closer examination of the correlation between social variables and syntactic variants showed that education might have an even greater influence on the use of syntactic variants than statistical testing of one syntactic variant at a time would suggest; rather, the number of informants at a specific education level and the number of syntactic variants they used suggested a correlation between education and syntax.

Another variable that had little effect on speakers' lexical choices but had a comparable effect at other levels of the grammar was sex of the informant. However, like the variable of education, the nature of the relationship between Colorado pronunciation and the variable of sex was only revealed when the analysis went beyond a feature-by-feature method to a method that relied on an examination based on comparing current pronunciation with that suggested by the historical word classes of specific variants.

More study of the phonetics of the Colorado corpus using this approach should be conducted in future research.

The finding that a social variable could have an important impact on some aspects of speech while having little or no influence on other aspects of speech was not unique to this study. Based on their analysis of records from the Linguistic Atlas of the Upper Midwest, Linn and Regal (2006: 261) conclude that "the lexicon provides a better source of regional use than phonology, and grammar provides little regional distinction." Johnson (1996: 80) says that "Of all the linguistic levels, vocabulary is the most sensitive to [cultural] change since it is tied referentially to the culture. In this and other ways it differs from phonology and grammar." While the settlement patterns that Kurath (1949) relied on in postulating dialectal divisions in the eastern states may hold some influence in this regard, I again maintain that region is influential in that it prioritizes relevancy in both thought and language.

As a study of the speech of a relatively small area of the United States, this investigation has gone into great detail into some facets of Colorado English that have been overlooked by some of the broader approaches taken to Western American English, and, as such, greater complexities have been revealed. Specifically, an examination of the low back vowel merger in the corpus and its correlation with biological sex has suggested a far greater complexity than have earlier depictions of the low back vowel merger as a salient characteristic of Western American English (Labov et al. 1997).

The findings of this dissertation have also been counter to several predictions that Hankey made in his 1960 dissertation. For instance, Hankey concluded that the state of Colorado displayed the dialect mixture indicative of a transition area, but he maintained that "there is in Colorado a kind of linguistic ferment which might give rise to dialect development peculiar to this state and parts of the Rocky Mountain region." Like Kimmerle, McDavid and McDavid (1951), Hankey predicted that linguistic patterns would emerge in Colorado, much as they had in the eastern states, and they would follow settlement patterns, often patterning with the rivers and mountain passes that formed natural avenues of migration into and throughout the state. Nearly 50 years after the completion of Hankey's work finds that the neat linguistic patterns that Hankey and other early researchers on Colorado English predicted for the

state have not developed. Rather, this dissertation has suggested that social characteristics act together to maintain a linguistic environment in which competing variants are retained.

Perhaps the primary reason for the predictions that Hankey made not being borne out by the present work is Hankey's apparent assumption that dialect mixture was simply a stage that dialects go through on their way to becoming unique entities. Kimmerle, McDavid, and McDavid (1951) pointed out that the problem of dialect mixture in Colorado from the situation in other dialect regions of the United States was simply "more of degree than kind," and this dissertation also takes the view that all dialects comprise a mixture of dialects to some extent. Thus, the dialect mixture of Colorado is its dialect, and while this dialect will change over time, especially as the state's demographics and culture change, it will not necessarily become a more pure dialect, nor should it, for, as Saussure pointed out, there are no pure dialects.

Another reason that Colorado has not developed the distinct dialect that Hankey and others predicted for it may be a reflection of changes in American lifestyle since the 1950s and '60s. Although social and regional mobility have always existed to some extent in the United States, the development of the U.S. interstate system, routine air travel, and advances in mass communications have fostered a mobility in American culture like never before, and this development has surely influenced American speech in a variety of ways. The influence that changes in American culture had on Colorado during its formative years is out of the range of the current study.

While no other state in the Union, let alone the West, is exactly like it, Colorado is the composite of many factors that have been important in the development of the West, including a relatively lengthy history of Spanish occupation and an economy based on mining, ranching, farming, and tourism. But these factors are just some of numerous social variables that have had an influence on the variety of English spoken in Colorado, and the importance of all social factors, and their relationships to one another, should not be overlooked in future examinations of Western American English.

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APPENDICES

APPENDIX A

LAWS WORKSHEETS

LAWS WORKSHEETS

Abbreviations:

|	> See footnote
lower case	>get synonyms
UPPER CASE	> get pronunciation
+	> get synonyms also
#	> get semantic clarification
"…"	> get meaning
[…]	> synonyms worth exploring

Sheet A: Personal Data

1) Interviewer
2) Date
3) Community
4) County
5) State
6) Informant
7) Address
8) Birthplace
9) Date of birth/year
10) Education/schools attended/last grade completed
11) Social contacts/working companions/business contacts/close friends/church/clubs/travel
12) Parents' birthplace: Mother/Father
13) Parents' education: Mother/Father
14) Parents' occupation: Mother/Father
15) Maternal grandparents: birthplace/education/occupation/source of earlier ancestry
16) Paternal grandparents: birthplace/education/occupation/source of earlier ancestry
17) Spouse: age/religion/education/occupation/social contacts/parental ancestry
18) Community sketch: have informant provide a description of town/now and years ago

1. MOTHER +
2. FATHER +
3. PARENTS +
4. Grandmother
5. Grandfather
6. CHILDREN +
7. RAISED +
8. looks like
9. HOSPITAL
10. midwife
11. HUSBAND +
12. WIFE +
13. MARRIED +
14. CHURCH
15. SERMON +
16. GOD
17. MATTHEW
18. JOHN

19. EDUCATION
20. COLLEGE
21. LIBRARY
22. DAUGHTER
23. NEPHEW
24. AUNT
25. UNCLE
26. WOMAN teacher
27. best man
28. bridesmaid
29. relatives
30. not related

Sheet B: The House

1. living room
2. mantel
3. CHIMNEY
4. HEARTH
5. andirons
6. BACKLOG +
7. kindling
8. WOOD
9. SOOT
10. ASHES
11. closet
12. attic
13. storage room
14. HOUSE/S |
15. ROOF/S |
16. gutters
17. siding
18. main ranch building
19. SHUT THE DOOR
20. WINDOW
21. storm cellar
22. MIRROR
23. GLASS
24. HOME
25. BROOM
26. PORCH +
27. shades on rollers
28. central heating units #
29. storm windows
30. STAIRS +

Sheet C: Household Goods and Clothing

1. FURNITURE #
2. couch
3. dresser

4. bureau
5. TIN bucket +
6. WASHcloth/dishrag
7. TOWEL
8. FAUCET +
9. WATER
10. KETTLE +
11. frying pan/greasy
12. makeshift lamp
13. kerosene
14. COAL
15. OIL
16. bed on the floor
17. SUGAN +
18. pillowcase
19. LIGHT BULBS
20. TELEVISION
21. APRON +
22. COAT
23. HANDKERCHIEF +
24. work clothes #
25. winter clothes #
26. work shoes #
27. gloves #
28. hats #
29. suspenders
30. trousers

Sheet D: Food

1. CORN on the cob [roasting ears]
2. corn husks
3. corn silk
4. BEANS # |
5. cherry TOMATO
6. POTATOES # |
7. beets
8. SQUASH # |
9. VEGETABLES #
10. fruit pits # |
11. peaches #
12. fruits
13. JELLY
14. MUSHROOMS +
15. chipped beef
16. salt pork #
17. headcheese
18. STRAIN
19. thin milk
20. curdled milk
21. cottage cheese

22. corn bread #
23. WHEAT bread #
24. YEAST
25. soft drinks #
26. moonshine
27. casserole +
28. "BARBECUE" +
29. COFFEE
30. APPLESAUCE

Sheet E: The Farm and Ranch

1. RAIL fences+
2. CORRAL #
3. PASTURE
4. FIELD +
5. BARN +
6. cornCRIB
7. "go-devil"
8. feed bag
9. bridle parts # |
10. saddle parts # |
11. lariat
12. WHEELBARROW
13. gunnysack
14. boat with oars #
15. WHIP +
16. sharpening stone +
17. A/X frames #
18. outbuildings #
19. stone wall
20. plows #
21. "gee-whiz"
22. buck scraper + |
23. harrow #
24. ranchers' tools |
25. SHEARS
26. HAMMER
27. CAR
28. trucks #
29. guns # |
30. CARTRIDGE

Sheet F: Enclosures, Containers, and Farm Animals

1. animal pens #
2. chicken COOP
3. TROUGH/S |
4. BARREL
5. KEG
6. slop bucket

7. BULL |
8. COW
9. CALF
10. ram |
11. EWE
12. fowl #
13. EGGS
14. BOAR/sow/pig |
15. studHORSE/S + |
16. MARE
17. "bronco"
18. MULE
19. jackass/she-ass
20. BURRO
21. livestock
22. string of horses
23. poor livestock
24. calve
25. castrate
26. castrated animal |
27. animal calls |
28. DOG of mixed breed
29. orphan calf/lamb/horse/pig
30. animal excrement #

Sheet G: Wild Animals

1. wild horses +
2. prairie dog +
3. chipmunk +
4. "gopher"
5. ground-/rock-/wood-chuck
6. turtles #
7. SQUIRREL # |
8. game animals #
9. wood animals #
10. mountain animals #
11. desert animals #
12. plains animals #
13. MOTH/S # |
14. stinging insects #
15. WASP/S + |
16. chiggers
17. lightning bug
18. dragonfly
19. woodpeckers #
20. OWLS #
21. local birds #
22. snakes #
23. WORMS +
24. local fish #

25. FROG
26. toad
27. bullfrog
28. lizards #
29. OYSTERS
30. SHRIMP

Sheet H: Weather and Vegetation

1. FOG
2. CLOUDS
3. summer storms #
4. winter storms #
5. ZERO |
6. FROSTbite # |
7. hard freeze
8. wet snow/dry snow #
9. thin ice # |
10. thaw
11. windstorms #
12. the wind picks up
13. the wind lets up
14. the weather is hotter than...
15. the weather is colder than...
16. BREATHE |
17. the weather is drier than...
18. "chinook"
19. "blue norther"
20. DROUGHT +
21. cultivated grasses #
22. uncultivated CROP
23. local trees #
24. SYCAMORE
25. aspen
26. grove of trees
27. SHRUBS # |
28. cactus #
29. weeds #
30. creeping brush and vines #

Sheet I: Landscape

1. local streams #
2. CREEK +
3. wet-weather creek #
4. "MEADOW"
5. "park"
6. "basin"
7. SWAMP #
8. flat-topped hill
9. CLIFF/S + |

10. irrigation ditch
11. irrigation POND
12. ditch along upgraded road
13. poor soil +
14. productive soil +
15. sidewalk
16. "boulevard"
17. paved roads #
18. unpaved roads #
19. roadway through mountain
20. "badlands"
21. "high plains"
22. "hole"
23. "MOUNTAIN"
24. HILL #
25. draw
26. canyon #
27. waterfall # |
28. "white water" # |
29. wild FLOWERS +
30. "rock"/"stone"

Sheet J: Society

1. WIDOW
2. bastard +
3. shivaree # |
4. harmonica
5. MUSIC
6. seesaw
7. wishbone |
8. carry a heavy load [lug/pack/tote]
9. GIRLfriend +
10. local parties/fairs #
11. RODEO #
12. HUMOR
13. escort
14. ROUGE
15. "dude"
16. CEMETERY +
17. FUNERAL
18. casket
19. MOURNING
20. GHOSTS +
21. haunted house
22. DEVIL
23. superstitious + |
24. really tired
25. really frightened
26. really disgusted
27. really angry

28. leave in a hurry
29. MERRY CHRISTMAS+
30. HAPPY NEW YEAR +

Sheet K: People

1. COLORADO native
2. natives of other Western states
3. AMERICAN +
4. Canadian
5. Mexican
6. Negro
7. Mormon
8. "Anglo" + |
9. country/city people
10. POOR people +
11. ranch hand
12. stockman |
13. miner #
14. MARY
15. SARAH
16. NELLY
17. "jackleg" |
18. LAWYER
19. JUDGE
20. [body parts] |
21. strong +
22. (sick) to (one's stomach) |
23. HOARSE
24. ARTHRITIS +
25. APPENDICITIS +
26. DIPHTHERIA
27. "Rocky Mountain fever"+
28. WOUND
29. sickly
30. DEAF

Sheet L: Time and Distance

1. sunrise
2. sunset
3. 10:45 |
4. YESTERDAY
5. TOMORROW
6. (days of the week) |
7. (months of the year) |
8. (cardinal numbers) |
9. (ordinal numbers) |
10. local towns/counties # |
11. Western states/cities |
12. LOUISIANA

13. MISSOURI
14. BATON ROUGE
15. NEW ORLEANS
16. CHICAGO
17. CINCINNATI
18. MORNING
19. TOWARD
20. "up/"down" in travel#|
21. MILES
22. PUSHED
23. PULLED
24. short distance
25. long distance
26. SCARCE
27. railroad station+
28. cater-cornered (rest)+
29. angling (motion)+|
30. words of parting

APPENDIX B

INFORMANT BIOGRAPHICAL SKETCHES

1. Jackson County -- Walden

H17: F, teacher/housewife, 82. B. Calgary. – F. b. here, rancher. PGF b. in KY of Scots-Irish heritage; M. b. North Park; MGPs were Irish, GGPs came in 1878 from IL enroute to CA, stopped in Boulder and heard about North Park area and family moved there. Family constitutes a long line of Colorado ranchers. – Ed.: local h.s. – Methodist, Methodist Community Church. – Well-traveled: Europe, Mexico, Canada, AK, CA, TX and many other states but family has strong ties to Walden area, going back several generations and children remain in area. – Uses several expressions, such as "wouldn't pick one on a bet" and "kind of fell heir to that." Lack of relative pronouns in several sentences, such as "There's four of them live here still"; /hw/ in words like whip.
*Aux. inf.: M, electrician. B. Walden. – Ed.: Some college at the University of Colorado at Boulder. Ancestors migrated from MO and PA of English heritage, and mother was from MO. – Was familiar with several terms that he claimed were not used in the area very often, such as souse, smearcase, tow sack; also, knowledgeable in local ranching practices and terminology.

2. Grand County -- Kremmling

H18: M, rancher, 81. B. Sidney, Nebraska, but lived in Kremmling most of his life. – F. Henry, NE; M. b. Cheyenne Wells, CO, MGP b. Germany. – Ed.: h.s. – Served in the military during World War II and was stationed in Africa and Italy for three years. – Knows and uses quite a few Spanish terms during the interview, especially for ranching artifacts, and jokes quite a bit. Uses positive anymore, some leveling in be forms, e.g. "they was." Quite a few instances of /hw/, as in *wheelbarrow, wheeler, whip.* Some features typically associated with Southern American English, e.g. [grizi], first syllable stress on *insurance*, "I'm not right sure." Some feedback at beginning of interview and at various points in interview, presumably caused by microphone placement.

3. Gilpin County -- Black Hawk

H19: F, housewife, 72. B. here. – F. ? Cornish, F's grandfather was first of the inf.'s family to live in Black Hawk; M. b. Arvada of English and French descent. – Ed.: 10th grade. – Methodist. Central City St. James United Methodist, Eastern Star. – Traveled with her husband as he was a roadbuilder in four states. – Pleasant informant; laughs and giggles quite a bit throughout interview; has a high-pitched voice. Her speech has some of the prosodic qualities associated with North Germanic languages like Swedish and Norwegian. Some aspirated /w/, e.g. [hwɪp]
*Aux. inf.: M, equipment operator. B. Norway, moved to Denver when he was two, then to Gilpin to mine gold. – Mason.

4. Boulder County – Hygiene

H21: M, farmer?, 82. B. three or four miles n.e. of town. – F. b. MO, farmer of Scottish and English descent; M b. south of Hygiene, MGF from MI, MGGF from KY came to CO in 1867. – Ed.: 10th grade. – Methodist, First United Methodist Church, Woodmen of the World. – Not much travel: Went to Tijuana once but didn't like it. – Some intrusive /r/, e.g. in *washstand*; some aspirated /w/ as in [hwit].

**Aux. inf.: F, homemaker/farmer, B. Denver. F. b. England. – Ed.: h.s. – Methodist, Woodmen of the World.*

5. Sedgwick County -- Sedgwick

H22: M, farmer, 91. B. 15 mls. n. of McCook, NE, moved to Sedgwick area when he was 7. – F.b. NY of English descent, farmer, PGF b. NY, English, but some Scottish blood somewhere along the line, as well; M.b. Nashville, TN, but grew up in Omaha, NE, teacher/housewife. – Ed.: h.s. – Presbyterian – Widower: Wife was b. in Tecumseh, NE, possibly of Scottish descent, 2 yrs. h.s. – Some intrusive /r/, some monophthongization, e.g. in fire, some aspirated /w/, e.g in whip.

6. Rio Blanco County -- Meeker

I16: F, homemaker, motel owner/operator, 74. B. here, lived in Boulder during college and in Denver for a couple years after before moving back to Meeker, traveled a great deal in western U.S. – F b. Meeker, PGF Scotland, PGM England; M b. Meeker, MGF Ireland, MGM England, ranchers. – Ed.: graduate of Colorado University. – Episcopalian; P.O.E.; Eastern Star. Some microphone problems – Some aspirated /w/, as in white, whip.

*Aux. inf.: M, rancher, motel owner/operator, 75. – Ed.: local h.s., correspondence courses. – Only provides a few answer on tape and from other room.

7. Lake County -- Leadville

I17: F, teacher, 85. B. Malta, CO (4 miles southwest)?, traveled some with husband's job throughout U.S. six months at a time. – F., railroad agent, b. Godfrey, IL, PGF English, PGM German; M b. KS, MGP b. WV French, English, Scottish. – Ed.: local schools, Colorado Women's College in Denver, State College of Education in Greely (now Northern Colorado University). – Presbyterian; Eastern Star; A.A.R.P.; Golden Age. – Husband was Finnish, Lutheran. – Used oxygen respirator but her voice was generally strong, although somewhat raspy. – Limited knowledge of farming and ranching in the area, but some knowledge of community history and local mining folklore and practices. – Didn't know many ranching terms, but did provide some mining terminology, positive anymore, articulates /l/ in [folks], some aspirated /w/, as in [hwil].

8. Chaffee County -- Buena Vista

I18: F, homemaker, 71. B. Florence, CO. – F b. in Buena Vista, of Canadian ancestry, railroad worker, farmer, PGF from Canada, saloonkeeper, Grange; M b. Clarkdale, CO, MGPs from MO, English, MGF railroad worker. – Ed.: h.s. – Some intrusive /r/, as in wash.

*Aux. inf.: M. – MGP from Iowa, English.

9. Yuma County -- Idalia

I21: M, farmer, 70. B. Robber's Roost (20 miles from Idalia). – F.b. Monroe, MO, rural carrier, ranch hand, PGM b. Gem, KS, farmer; M b. Idalia, MGM German, MGF from Kentucky, of English ancestry. – Ed.: College. – Wife, b. California. – Open /o/ is pervasive: father, John, college, barn, hogs, dog, water, daughter, job, earflaps; some intrusive /r/, e.g. in squash, wash; positive anymore.

10. Lincoln County – Limon

I22: F, secretary at local utility office, 74. – F. b. Illinois, rancher; M b. Indiana, schoolteacher, Scottish. – Ed.: h.s. – First Baptist Church. – Some intrusive /r/, e.g. in *wash,* some aspirated /w/, e.g. in *where,* "right close to", positive *anymore*.
*Aux. inf.: M, preacher. – Eagles Lodge.

11. Hinsdale County – Lake City

J17: M, builder, 88. B. here, went to Germany during World War II, has traveled throughout western United States and winters in AZ. – F., trout farmer, b. here, PGF b. Missouri; M. b. Aspen, CO, MGP from Braha. – Ed.: up to 9th grade in Creede and Alamosa schools. – Presbyterian; served in several public offices, including county commissioner, public magistrate, school board president. – A bit of a storyteller and not always clear on what the interview was about. Hard of hearing, may have fallen asleep at some point as wife continued with the interview. We took a lunch break more than halfway through the interview, and the interview became much slower after. Nevertheless, we used up two tapes for the interview and went well into a third tape. – Some southern features, such as monophthongization in *fire, pipe, hired, liars*; a-prefixing; [æut], [dæn].
*Aux. inf.: F, retired motel operator, 82. – F. b. TX; M. b. KS. – Ed.: local h.s., business and beauty school in Denver, continued living there for a few years after graduation. – Presbyterian – Is treated the same as a primary informant based on how many questions she answered due to her husband's hearing problem. It should be noted that her father came from TX, and she uses some lexical variants associated with Texas, e.g. "tote," some monophthongization in *bite, bright, retired*, /r/ at the end of words like *wallow.*

12. Saguache County -- Saguache

J18: M, rancher/dairy worker, 77. B. here, traveled throughout U.S., and in Europe during World War II. – F b. Cash City, KS, local schools, carpenter, county treasurer, PGF Paris, IN, PGM Palooski, TN; M b. here, MGF b. Sydney, OH, MGM Painesville, OH, English descent. – Ed.: local schools, h.s. – Methodist, American Legion, Friends of the Library, Old Spanish Trail Organization, county commissioner, town board. – Extensive knowledge of ranching terms, history of area. – Had some familiarity with Spanish due to the community's large Hispanic population, some monophthongization, e.g. in fire, some aspirated /w/, e.g. in *whip*.
*Aux. inf.: F, registered nurse, 78. B. Kansas City, KS, came to Saguache in early adulthood. – Was in another room most of the time but talked a good deal and provided some target words.

13. Pueblo County -- Beulah

J20: M, auditor, 81. B. Dermot, KS, lived in Denver for 30 yrs. after college, but always had ties to Beulah Valley; traveled extensively throughout western North America, and also visited New Zealand, Australia. – F. farmer, b. Dermot, KS, PGF coalminer in KS, Irish descent; M. teacher, b. Syracuse, KS, MGF railroad worker in southwestern KS, Welsh, German, and English descent; both families had been in U.S. for several generations. – Ed.: various local schools, Pueblo Junior College, B.A. from Denver University. – Methodist; Masonic Lodge; Beulah Historical Society. – More interested in historical aspect of interview than in language and culture.
*Aux. inf.: F, wife, homemaker, 81. B. Morton Co., KS, of English and German descent. – Ed.: h.s. – Methodist. – She was relatively quiet but did provide some target items.

14. El Paso County -- Peyton

J21: F, homemaker, 74. B. Bijou Basin, 7 miles N.E. of Peyton, traveled extensively in U.S., especially in the West. – F b. Ashton, IA; M b. Longtail, NE, MGM b. MO. – Ed.: 10th grade. – Member of non-denominational church; Friends of the Library; 4-20; Democratic Party; Florissant Heritage Foundation; Ladies Guild; P.T.A. – Very talkative in some ways but often avoided repeating items that I asked about. – Extensive knowledge of ranching and furniture terminology. – Grammatical features include copious use of double complementizers, a-prefixing, and irregular verb forms. – This was a difficult informant to label with respect to place because she was born and raised in one county but had lived a great while and was interviewed in an adjoining county. Both counties, however, were considered as one grid unit in the LAWS grid. Ultimately, I labeled her by her birthplace near Peyton, although she does discuss the Florissant area to a great extent.

15. Prowers County -- Lamar

J22: F, homemaker, 75. B. Caney, KS. – F.b. MO; M.b. KS of Pennsylvania Dutch descent. – Ed.: 11th grade. – Alta Vista Club, historical society, Siennas. – Some a-prefixing, *they was.*

16. La Plata County -- Durango

K16: F, teacher/homemaker, 86. B. here. – F b. Ireland, Catholic, M b. Ireland, Catholic, housemaid. – Ed.: College.

*Aux. inf.: M, farmer. B. Hesperus. – F. and M. from Lithuania.

17. Rio Grande County -- Del Norte

K18: M, mechanic/postmaster, 83. B. here. – F b. Massachusetts, postmaster, English, Scotch; M adopted, raised in the area. – Ed.: h.s. – A-prefixing, they was.

18. Archuleta County -- Pagosa Springs

K19: M, mechanic, 63. B. here, Army service in France, Germany, and TX, but little travel otherwise. – F., plumber, 8th grade ed., PGP from KS; M., homemaker, 8th grade ed. – Ed.: local h.s. but did not graduate. – Not religious; fire department. – Resistant at first and offered little information about family history or relationships, but eventually warmed up a bit.

19. Alamosa County -- Alamosa

K20: F, seamstress, maintenance worker, 64. B. Boulder, CO, during family migration from Burlington to San Luis Valley during Dust Bowl; extensive travel but no mention of living outside Co. – F. b. Kansas, PGGPs from Germany; M. b. Iowa, MGF b. France, MGM b. Iowa. – Ed.: Elementary in local Waverly schools; h.s. in Alamosa. – Mormon; American Legion Auxiliary; Rebecca Lodge; league bowler. – Very talkative, but busy schedule resulted in two interview sessions 1½ years apart, neither of which were held in her home but the first session in her place of employment at a senior citizen's center

and the second at a local V.F.W. lounge; as a result, other people can be heard on tape although they supply no answers to the questionnaire. – Extensive knowledge of local methods of farming, ranching, wildlife, and housing; knew a great deal about old foods like head cheese, blood sausage; some knowledge of local history, especially of outlying communities.

20. Baca County -- Springfield

K22: M, farmer, 75. B. Lamar, CO, traveled throughout country, primarily to state fairs, and Mexico. – F b. Montezuma, KS, probably German descent; M b. Balding, KS, MGPs from Kentucky. – Ed.: local elementary, graduated from h.s. in nearby Pritchett. – Church of God, Gideon's. – Late wife was schoolteacher. – Extensive knowledge of farming and ranching terminology, including illustrations of bridle and saddle; somewhat concerned with correctness and formality of interview situation. – Speech included some variants associated with southern speech, including double modals**.**

APPENDIX C

COMPARISON OF LAWS, LANE, AND LAGS HEADWORDS

LAWS	headword	LANE	headword	LAGS	headword
A10	midwife	65	midwife	065.2L	midwife
A27	best man	82	best man	082.3L	best man
B1	living room	7	living room	007.8L	sitting room
B2	mantel	8	mantel shelf	008.4L	mantel
B5	andirons	8	andirons	008.3L	andirons
B7	kindling	8	kindling wood	008.6L	lightwood
B11	closet	9	clothes closet	009.6L	clothes closet
B16	gutters	11	gutters	011.5L	eaves troughs
B26	porch	10	porch	010.8L	porch
B27	shades on rollers	9	roller shades	009.5L	window shades
C5	tin bucket	17	pail	017.3L	pail
C8	faucet	18	faucet	018.7L	faucet
C11	frying pan	17	frying pan	017.5L	frying pan
C13	kerosene	24	kerosene	024.2L	kerosene
C16	pallet	29	pallet	029.2L	pallet
D1	corn on the cob	56	sweet-corn	056.2L	roasting ears
D2	corn husks	56	corn husks	056.1L	shuck
D4	green beans	55	string beans	055A.4L	green beans
D4	lima beans	55	lima beans	055A.3L	butter bean
D11	freestone peach	54	free-stone peach	054.4L	freestone peach
D12	clingstone peach	54	cling-stone peach	054.3L	cling peach
D20	curdled milk	47	clabber	047.6L	curdled milk
D21	cottage cheese	47	cottage cheese	048.1L	cottage cheese
D22	cornbread	44	corn bread	044.5-6L	corn breads
E1	rail fences	16	rail fence	016.4L	rail fence
E6	corn crib	14	corn crib	014.3L	corncrib
E13	gunnysack	19	burlap bag	019.7L	tow sack
E16	sharpening stone	23	whet stone	023.4L	whetstone
E17	a-x frames	59	saw horse	022.1L	sawhorse
F6	slop bucket	17	pail	017.4L	slop bucket
F7	bull	33	bull	033.5L	bull
F10	ram	34	ram	034.9L	ram
G3	chipmunk	59	chipmunk	059.8L	chipmunk
G9	woods animals	59	skunk	059.4L	skunk
G18	dragonfly	60	dragonfly	060A.4L	dragonfly
G19	woodpeckers	59	woodpecker	059.3L	woodpecker
G20	owls	59	screech owl	059.1L	screech owl
G23	worms	60	earthworm	060.5L	earthworm
H12	the wind picks up	7	(...wind...) rising	007.2L	(the wind is) picking up
I2	creek	30	creek	030.6L	creek
I15	sidewalk	31	sidewalk	031.9AL	sidewalk
J2	bastard	65	bastard	065.7L	bastard
J3	shivaree	82	shivaree	082.5L	shivaree
J6	seesaw	22	seesaw	022.5L	seesaw
J7	wishbone	37	wishbone	037.1L	wishbone

LAWS	headword	LANE	headword	LAGS	headword
J8	carry a heavy load	21	hauling (wood)	098.1L	lug
J29	merry christmas	93	Merry Christmas!	093.2G	Merry Christmas
K22	sick) to (stomach	80		080.4G	(sick) at his stomach
L3	10:45	4	quarter of eleven	004.5G	quarter of (eleven)
L24	short distance	39	a little way	039.5G	a little way

APPENDIX D

LEXICAL VARIANTS

Eastern Lexical Variants

A10 Midwife

midwi(fe/ves)	8
NR	8
misses so-and-so	2
neighbor lady	2
neighbors	2
nurse	2
caregiver	1
doctor assistant	1
"Grandma Myers"	1
practical nurse	1

I22	neighbor lady	___ that happened to be there
K22	misses so-and-so	helped attend them...but that I think that was in relationship to helping the midwife

A27 Best man

best man	13
NA	5
the best man	2
groomsmen	1
my brother	1
witnesses	1
NR	1

H18	generally drunk

B1 Living room

living room	14
front room	8
parlor(s)	2
NA	1
the room	1
NR	1

H18	family room	different than front room. More like den.
H22	family rooms	current
I18	den	is different
I18	front room	is same thing as living room
J18	front room	is same as parlor
J21	parlor	is different
J21	living room	___ chairs
K16	parlor	old days
K18	parlors	in back

B2 Mantel

mantel(s)	15
NA	3
mantel top	1
mantelpiece	1
shelf	1
NR	1

B5 Andirons

grate(s)	12
andirons	3
endirons	1
fire cradle	1
little grate	1
steel grate	1

H21	grate	just like the grate of a stove
H22	grate	generally classed as a ___
I22	andirons	some people would say
I22	grate	would probably say
J21	grate	was separate, different than andirons
J21	(_)dog(_)	same thing as andirons
K18	grate	just like in your coal woodstove
K19	andiron	not sure what it is
K20	andirons	that has to be an eastern term
K22	grate	but not in a fireplace

B7 Kindling

kindling	14
chips	4
NA	2
NR	2
shavings	1

H21	kindling	a pitch, an old pitch, piece of pitch
I16	chips	put some smaller ___ on top
I16	kindling	small pieces of wood that you build a fire with
I17	kindling	pine or whatever wood they happened to have
J18	chips	some papers and some ___
J18	kindling	little slivers of wood
J21	kindling	small pieces of wood, pine cones
K19	kindling	pitch, pine pitch, pine or pitch
K20	kindling	little pieces
K22	kindling	wood, soft wood, pine board, an old board

B11 Closet

closet(s)	11
clothes closet(s)	11
NR	2
portable closet	1

H22	NA	mentioned closet but not with clothes

B16 Gutters

gutter(s)	8
eave(s)	4
eavestrough(s)	3
eavetrough	2
ground	2
rain gutter(s)	2
cupola	1
drain	1
dripped on the ground	1
eaves and troughs	1
flat eaves	1
NR	1
rain trough	1
right on the ground	1
troughs	1
valleys	1

H17	dripped on the ground	just ___
J18	gutter	short piece of ___
J22	ground	right on the ___
K19	barrel	old days

B26 Porch

porch	16
back porch	5
front porch	5
screened-in porch(es)	3
awning	1
deck	1
front step	1
glassed-in porch	1
lean-to	1
little awning	1
mudroom	1
patio	1
sun porch	1
step	1
NR	1

I17	step	just that front little, oh, a _ I guess is what you'd call it
J17	porch	is the laundry room
J20	deck	uncovered
J20	porch	covered
K18	porch	there was a little porch over the front door

B27 Shades on rollers

shade(s)	8
blind(s)	5
NA	3
Venetian blind(s)	3
window shade(s)	3
black window shades	1
green shades	1
NR	1
Venetian	1

H17	green shades	always ___
J20	blind	a type of ___
K20	NR	when the sun was shining, you let the sun come in

C5 Tin bucket

bucket(s)	20
pail(s)	4

H17	buckets	tin
H18	pails	milk
H19	buckets	galvanized steel
H21	buckets	granite
H22	bucket	___ of paint
I16	bucket	___fed lamb
I16	pail	same as bucket
I17	pails	same as bucket
I18	bucket	___ful
I18	buckets	galvanized
J17	bucket	big ___
J17	bucket	five-gallon
J17	bucket	steel ___
J17	pails	we have a lot of those plastic ___ now that some kind of caulking comes in
K18	buckets	galvanized or steel ___
K18	pail	some people call them
K18	pail	rattle the ___ (to call pigs)
K22	bucket	plastic ice cream

C8 Faucet

faucet(s)	16
NR	3
spicket	2
hydrant	1
pump	1
spigot	1
tap	1
water tap	1

H17	spicket	outside
H18	hydrant	outside
H19	spout	outside
H19	well	outside
H22	pump spout	outside
I18	pump	outside
I18	water tap	city hookup
I22	tap	city lines
J20	tap	outside
K16	faucet	outside
K18	spout	outside
K19	spicket	outside
K22	spicket	older word

C11 Frying pan

frying pan(s)	15
skillet	11
iron skillet	2
cast-iron skillets	1
Dutch oven	1
fry pan	1
old iron skillet	1
sauce pans	1
steel skillets	1

H17	frying pan	tin
H21	skillet	old term
I16	skillet	no difference between ___ and frying pan
I17	skillet	___ and frying pan the same thing
I22	skillet	same thing
J20	skillet	frying pan smaller, __ is cast-iron
K20	frying pan	skillet and ___ the same
K22	frying pan	older
K22	skillet	cast iron, heavier; frying pan tin or thin metal

C13 Kerosene

kerosene lamp(s)	10
kerosene	7
coal oil	6
coal oil lamp(s)	5
crude oil	1
distillate	1
gas lanterns	1
gasoline lamps	1
gasoline lanterns	1
kerosene lanterns	1

H17	coal oil	___ and kerosene are the same
H18	kerosene	same as coal oil
I21	coal oil	same as kerosene
J22	coal oil	for lamps; same thing as kerosene
K18	kerosene	petroleum byproduct

C16 Pallet

pallet(s)	5
NR	5
sleep(ing) on the floor	2
trundle bed(s)	2
air mattress	1
bed down on the floor	1
bed on the floor	1
bedroll	1
bunk beds	1
bunk on the floor	1
foam mattresses	1
mattress	1
pallet on the floor	1
sleeping bag	1
sleeping mats	1
spare mat	1

H17	sleeping on the floor	we always just said ___
H18	bunk on the floor	just a ___ I guess
H19	bed on the floor	just a ___
I16	mattress	when you don't have a bedstead
I21	bedroll	just a ___
I22	pallet	not very familiar with
J18	pallet	foam mattress
J21	pallets	at Hartzell ranch for the sheepherders
K19	bed down on the floor	blankets and a sleeping bag
K20	pallet	just in deer-hunting camps; was actually one of those foldout army cots
K22	pallet	a thick pad

D1 Corn on the cob

roasting ears	10
corn on the cob	7
on the cob	4
off the cob	1
cob	1
corn cob	1
ears	1
NA	1
NR	1
sweet corn	1

I22	corn on the cob	same thing as roasting ears
J22	off the cob	eat it ___
K16	on the cob	ate it ___
K18	on the cob	eat it ___

D2 Corn husks

husk(s)	13
shuck(s)	5
corn shucks	1
NA	1
NR	1

I21	shucking	___ corn
I21	shucking	corn__ mittens, corn__wagon
K18	shucks	(used it as an expletive)
K20	shuck	___ it

D4 Beans (green)

green bean(s)	13
string beans	10
NR	2
snap bean(s)	2
shelled	1
snap	1
string bean-type bean	1

H17	green beans	same thing as string beans
K16	green bean	__ and string beans same thing
K18	string beans	used to call them __, you had to snap them

D4 Beans (lima)

NR	13
lima bean(s)	3
lima(s)	2
big old white beans that I don't like	1

big white lima bean	1
butter beans	1
mortgage lifters	1

I16	mortgage lifter beans	which were great big kind of like a lima bean
I16	mortgage lifters	they were people's survival back in those years and we raised, we raised quite a few

D11 Freestone peach

freestone	8
NR	5
Alberta(s)	3
free	2
Albert	1
Alberta peaches	1
free peach	1
freestone peaches	1
NA	1
the Hale	1
white peach	1

J?18	Alberta	hard to get anymore

D12 Clingstone peach

cling(s)	9
NR	8
clingstone	3
cling peach(es)	2
Colorado peaches	1
early	1

D20 Curdled milk

NR	7
clabber(s/ed)	6
curdle(s/d)	3
clabber milk	2
clabbered milk	2
cottage cheese	2
buttermilk	1
cheese	1
clabber curdle	1
curdled cheese	1
curdled milk	1
powdered cheese	1
sour milk	1

H19	smearcase	used to call

I22	clabber	same thing as cottage cheese
K16	clabbers	it ___

D21 Cottage cheese

cottage cheese	14
NR	5
curdled cheese	1
curdled milk	1
curds	1
German cheese	1
smearcase	1
whey	1

H17	college cheese	used to think it was

E1 Rail fences

NR	8
pole fence	4
rail fence	2
split rail(s)	2
buck fence	1
hedge	1
rail fence-type things	1
snow fences	1
sundial fence	1
wood fences	1

H18	rail fences	used to be around here…all rotted away
I21	rail fences	wood was too scarce around here to have ___
I22	rail fence-type things	you don't see much of that at all
J20	pole corrals	earlier days
J22	rail fence	we didn't have many of those here
K18	split rails	not too much around here
K20	rail fences	on mountain ranges

E6 Corn crib

granar(y/ies)	10
NR	6
corn crib(bing)	4
crib	2
feedbox	1
granary bins	1
hay crib	1
silos	1
tin granary	1

J18	corn crib	northern
J20	corn crib	used to

K18	corn cribs	in corn country
K20	corn cribs	eastern Colorado

E13 Gunny sack

gunny sack(s)	13
burlap bag(s)	6
burlap sacks	2
NR	2
burlap	1
hemp sack	1
potato sack	1
tote bag	1
tow sacks	1

J18	tote sacks	some people…in this part of the country
J22	gunnysack	___ races
J22	tow sack	in Oklahoma
K19	gunny sack	still get beans in a ___
K19	tow sack	used to call them
K22	gunny sack	slang

E16 Sharpening stone

grindstone	7
whetstone	4
grinder	3
file	2
grinding stone	2
NA	2
awl	1
electric grinder	1
emory stone	1
flex stone	1
knife sharpener	1
sharpener	1
sickle sharpener	1
stone	1
NR	1

E17 Sawhorse

sawhorse(s)	15
sawbuck(s)	5
buck	1
cross frame	1
jig	1
mitre box	1
NR	1

H18	sawbuck	same thing as a sawhorse

H19	sawbuck	that's what we saw our wood for our house on

F6 Slop bucket

slop bucket	9
NR	5
slop pail	3
bucket	1
garbage pail	1
NA	1
pail	1
refuse bucket	1
slop jar	1
water bucket	1

H17	slop bucket	pan or bucket
K16	slop bucket	nasty ___
K20	swill buckets	the people that called them swill buckets…were the people that lived in town that had no friggin' idea how dirty it was. It was slop. Period.
K22	slop bucket	later meant commode

F7 Bull

bull(s)	20
steer(s)	5
gentleman cow	2
an animal	1
male	1

H17	gentleman cow	just to be funny
H21	an animal	in the presence of women
J22	gentleman cow	girls said

F10 Ram

buck	9
NR	8
ram(s)	6
buck sheep	1
Rambilay	1

H19	rams	I think they called them rams but we had no sheep here
K20	ram	short for Rambilay

G3 Chipmunk

NR	10
chipmunk(s)	7
ground squirrel(s)	3
cottontail	1

H21	chipmunk	smaller, up in the hills
H22	chipmunks	like a little, half-grown ground squirrel
I22	ground squirrels	we call them ___
J22	NR	not in this area
K16	chipmunk	little, striped ___
K18	chipmunk	different than ground squirrel but similar

G9 Woods animal (skunk)

skunk(s)	10
NR	9
stinkers	1

I21	skunk	we have badger and ___
J22	skunk	___ galore
K22	skunks	them ___ like to eat them

G18 Dragonfly

NR	18
dragonfl(y/ies)	5
NA	1
snake feeder	1

H17	snake doctors	folks called them
J21	snake feeders	when growing up
K19	snake doctor	years ago

G19 Woodpeckers

woodpecker(s)	9
NR	8
flicker(s)	2
big redheaded one	1
irritating souls	1
redhead	1
redheaded kind	1
redheaded ones	1
redheaded woodpecker	1
red-winged	1
regular old finch	1
yellowhammers	1

I17	woodpecker	not around here

G20 Owls

owl(s)	12
hoot owl(s)	6
horned owl(s)	3
horned	3
screech owl	2
barn owls	1
big barn owl	1
big old horned owl	1
brown owl	1
dog owls	1
ground owls	1
monkey face	1
old owl	1
snowy owls	1
NR	1

J17	white owl	but not here
K19	spotted owl	I don't think it was around here

G23 Worms

nightcrawler(s)	9
worm(s)	8
angleworms	6
fishworms	5
earthworm(s)	4
cutworms	2
grub worms	2
NA	2
army worms	1
cabbage worm	1
inch worms	1
potato worm	1
spinners?	1

H27	nightcrawlers	different from an ordinary earthworm
H18	worms	poor helpless
H18	screw worms	down in Arizona
H19	nightcrawlers	those big worms, ___, and then there's worms
I21	fishworms	older term
I21	nightcrawler	much larger worm than an earthworm or a fishworm
J18	nightcrawlers	get to be big, big fellows, you know

H12 The wind picks up

coming up	3
blowing	2
increasing	2
NR	2
blizzard	1
cutting up	1
gushing up	1
hard wind	1
high wind	1
NA	1
picking up	1
pretty good breeze	1
really beginning to blow	1
really blowing	1
really gushing	1
somebody left the gate open	1
sure is windy today	1
the wind is getting rough	1
the wind's coming up	1
(beginning) to blow	1
wind starts out hard	1
wind's blowing like hell	1
wind's picking up	1

I2 Creek

Creek	18
creek(s)	16
stream(s)	9
feeder streams	1

H17	stream	I think the ___ is a very small body of water
I18	creek	a ___ is a tributary of a river
I21	creeks	sand ___
J22	stream	there'll be a little stream during the rain
K22	stream	a ___ might be more something that had water all the time

I15 Sidewalk

sidewalk(s)	11
NR	5
NA	3
pavement	1
stone sidewalk	1
walk	1

H17	board sidewalk	Walden used to have
J21	sidewalks	not in this town or whatever you call this
K20	sidewalks	no sidewalks or nothing

J2 Bastard

bastard(s)	6
NR	6
illegitimate	5
brats	1
catch calf	1
illegitimate child	1
illegits	1
one of the kids	1
NA	1

J22	bastard	older word

J3 Shivaree

shivaree	18
NA	1
NR	1
reception and dance	1
wedding shivaree	1

I16	shivaree	not too much anymore
I21	shivaree	my wife never heard of a shivaree because she was from California
K18	shivaree	___ing

J6 Seesaw

teeter-totter(s)	20
seesaw(s)	4

J7 Wishbone

wishbone	14
NR	5
pulley-bone	1

H17	pulley-bone	some called it
J20	pulley-bone	some people called that a ___ instead

J8 Carry a heavy load

Elicitation:

pack	6
carry	5
haul	4
lug	4
tote	4

Conversational:

hauled	13
pack	2
carry	1
lug	1

J29 Merry Christmas

Merry Christmas	18
Happy Holidays	1
Merry Christmas and a Happy New Year	1
NA	1

K22 Sick) to (one's stomach

sick to (one's) stomach	6
bellyache	5
indigestion	2
nauseated	2
(sick)at(one's)stomach	2
upset stomach	2
NR	2
aches	1
acid indigestion	1
bellious	1
distressed	1
NA	1
nausea	1
stomachache	1
vomity	1
got a bug	1
eat too much	1

L3 Ten-forty-five

quarter to	10
quarter of	4
quarter till	3
NR	2
fifteen til	1

fifteen to	1

L24 Short Distance

a little ways	7
NR	4
NA	3
little way(s)	2
little jump	1
a mile or two	1
a skip and a jump	1
near	1
not far	1
over to	1
short ways	1

Western Lexical Variants

D4 Beans (pinto)

pinto beans	7
NR	7
pinto(s)	4

H22	pinto beans	quite a few ___ grown in this area
J17	pinto	___ and anesasin beans
K16	pinto beans	we didn't grow any but we've sure eaten a lot
K19	pinto beans	over by Cortez they have raised a lot of ___

D28 Barbecue

barbecue(s)	11
barbecue(verb form)	4
barbecue pit	3
cookout	2
pig roast	2
campfire	1
little portable barbecues	1
outside grills	1
party	1
picnic	1
pit barbecue	1
roadkill	1

E2 Corral

corral(s)	20
corral (verb)	3
corral fence(s)	2
corralled (verb)	2
horse corrals	2
barnyard	1
cages	1
catching pen	1
cattle corral	1
Picket Corral	1
picket corral	1
pole corrals	1
round corral	1
sheep corrals	1
sheep pens	1
sheepmen's corral	1

H18	horse corrals	well you call corrals ___ but you use them for anything
H21	cattle corral	have a horse corral and a ___
I18	corral	no difference between barnyard and ___
I21	corrals	and the cows you'd bring into the __ to brand them or dehorn or vaccinate
J17	corralled	he planted our fish for us and ___
J20	corral	they would ___ five-thousand head of sheep here
J21	corral	they ___ them also
K18	corrals	mainly for horses and cattle
K19	corralled	Nights they kept them ___
K20	corral	They ___ the cattle

E11 Lariat

lariat	9
lasso	5
lariat rope	4
rope	3
NR	3
lasso (verb)	2
catch rope	1
latigo	1
payola	1
reata	1

H17	lariat	I think lariat was used more than lasso really
H18	throw rope	Arkansasers
I17	lasso	You ___ somebody when you throw a lariat around them
I18	lasso	Same as a ___ only we always call it lariats
K19	lasso	part of the lariat; A ___ is the circle in the end of it
K22	lariat	It's a rope to catch a cow with

E15 Whip

whip	15
quirt	9
blacksnake	3
bullwhip	3
bats	1
prod	1
rope	1

H18	quirt	short
H18	whip	long
H22	quirt	a small whip they use for riding
I18	bats	use them on your own horse
I21	quirt	___ wasn't one that you cracked. A ___ was a short one.
I22	quirt	___ would be small
K18	quirt	used a ___ on his own horse rather than on cattle
K22	blacksnake	slang

F17 Bronco

bronco(s)	19
mustang(s)	4
bronc-buster	1
bronco-busters	1
broomtail	1
bucking bronco	1
kind of a nag	1

H17	bronco	a wild horse that bucks you
H18	bronco	an unbroken horse
H22	bronco	a wild horse that doesn't like to be rode
I16	bronco	a horse that bucks and they use them in rodeos primarily
J20	bronco	an unbroken horse rather than being a wild horse
K18	bronco	a ___ …just ain't learned nothing
K22	bronco	a wild horse or one that's never been broke

F21 Burro

burro(s)	11
NR	9
burritos	1
genet	1
hinny	1
jack burro	1
pack burro	1

H17	burro	same thing as a donkey
H22	burro	male of a mule
I16	burros	not sure I know the difference between a ___ and the donkey
I17	burro	smaller than a mule
I18	burro	we just called ___ and donkeys the same thing
I21	burro	we always considered the donkey a little bigger
J17	burro	jackass is a __
J17	burro	___ polo
J18	genet	female burro
J18	hinny	little more refined looking
J20	burro	another word for donkey
K16	burro	___ and donkey are the same
K18	burro	not the same as a donkey
K19	burro	a jackass

F29 Orphan animals

bum lamb(s)	5
pencos	3
orphan(s)	3
orphan calf	3
NR	3
bum(s)	3
bucketfed	2
young orphaned animals	1
stray	1
orphan sheep	1
orphan lambs	1
NA	1
mavericks	1
little orphans	1
doggie	1
bucket	1
bastards	1
baby	1

H18	dogies	some of them call ___
H18	leppie	some people…but I don't
H19	skim milkers	when we took the calves off the cows
J18	pencos	same thing (as a bum lamb)
J21	bum lamb	I raised a bunch of those

G2 Prairie dogs

prairie dog(s)	11
NR	7
gophers	1
ground squirrels	1

groundhogs	1
marmots	1
picket pins	1
whistle pigs	1

H17	gophers	___ are thicker than prairie dogs
H22	prairie dog	___ towns
I21	prairie dog	___ towns
I21	prairie dog	___ hunts
K20	prairie dogs	gophers
K22	prairie dogs	we have ___ by the jillions

G10 Mountain animals (Lions)

mountain lion(s)	11
NR	4
lions	2
NA	2
big cats	1
cougars	1
wildcat	1

J21	cougars	___ are black

G12 Plains animals (Coyotes)

coyote(s)	17
NR	3
killer coyotes	1

G22 Snakes

rattlesnake(s)	13
water snake(s)	12
bull snake(s)	11
garter snakes	5
garden snake(s)	3
blue racer(s)	2
blue racer snakes	1
common garden snakes	1
coral snakes	1
diamondheads	1
garden garter snakes	1
king snakes	1
little water snakes	1
moccassins	1
mountain rattler	1

prairie rattlers	1
red racer	1
rubber snakes	1
sidewinder rattlesnakes	1

J21	rattlesnakes	It's actually too high for them up here. They figured… had been hauled in
K22	bullsnake	___ we call them (common garden snake)

H18 Chinook

chinook(s)	15
chinook wind(s)	5
NR	3

H22	chinook	comes out from southwest or down, downslope

H19 Blue norther

NR	9
blizzard	4
north wind	2
northern(s)	2
blue norther	1
cold wind	1
freezing wind	1
heavy blizzards	1
northern blizzard	1
northerner	1

H17	norther	blue norther
I21	blizzard	we call a northerner a ___
I22	northerner	I don't know that we have that so much around here
K18	northerns	but we don't get those
K22	blue norther	I've heard someone call ___ and they were heavy blizzards

H23 Local trees (Aspen)

aspen(s)	9
quaking aspen	7
NR	6
quaking asp	4
quakies	2
quakers	1
quakie aspen	1
quaking	1
quivering	1

H23 Local Trees (Pinon)

pine(s)	9
spruce	9
cedar(s)	6
blue spruce	5
juniper	3
pinon	3
NR	2
blue	1
bristlecone pine	1
Colorado blue spruce	1
Doug fir	1
evergreen	1
evergreen trees	1
ham fir	1
jack pine	1
lodge pine	1
lodgepole pine	1
Oregon fir	1
pine trees	1
ponderosa	1
red spruce	1
white fir	1
white pine	1
white spruce	1
yellow pine	1

I16	pinon	___ are juniper

I3 Wet weather creeks

NR	9
creeks	3
arroyo	2
dry creek	2
brooks	1
draw	1
dry gulches	1
little arroyos	1
Rock Creek	1
sand creek	1

H18	dry gulches	they're ___ when there's no water
H21	arroyo	has been made out of rushing water…that's out east
I22	NR	a river would have to have water running it all the time
J22	creeks	one of those ___ are up
K19	arroyo	a draw…is the same as what we call an ___ around here
K19	mud creek	maybe call a dry-weather creek that

K20	draw	a ___ is when a creek comes through in a rainstorm…but then it's dry otherwise
K22	creeks	that's the only kind we have…when it's wet

I8 Flat-topped hills

mesa(s)	12
flat-topped mountain(s)	3
bluffs	1
butte	1
flat-topped	1
flattops	1
NA	1
NR	1
plateau	1
table land	1
Turtle Buttes	1

I16	butte	is kind of where a mountain ends and drops off sharply
I22	butte	in the breaks what you would call a ___
J18	butte	it isn't gradual…it comes up like this then it sloughs off
J20	Turtle Buttes	it just kind of rounds
J22	mesa	___ I don't think is quite as high as a butte
K16	mesa	___ is the top land
K18	butte	might come on up to more or less a peak than a mesa
K19	butte	don't think we use the term ___ around here much
K20	butte	more by itself
K22	butte	we call them ___ sometimes but I've always called them mesa

I12 Ditch along an upgraded road

NA	8
NR	5
bar pit	3
barrow ditch(es)	2
ditch	2
bar ditch	1
barrow pit	1

H17	ditch	just a ___
H19	ditch	just a ___

I19 Roadway through a mountain

pass(es)	7
NR	5
gap(s)	2

mountain pass(es)	2
tunnel	2
county road	1
county-maintained road	1
cuts	1
dirt road	1
gap road	1
Highway 70	1
little passes	1
roadways	1
trails	1

I21	pass	I suppose they use gap. I don't know. Or ___.
I22	pass	might be a ___
J18	trails	not much more than ___ you might say
J22	NR	I haven't been in the mountains enough to know those things
K16	gap	some of them are ___
K16	pass	a ___ includes the gaps
K18	Gap	Wagon Wheel ___ up here
K22	NR	we don't have any mountains so

APPENDIX E

VOWEL SYNOPSES

The vowel synopses created for this study followed the model established by Kurath and McDavid (1961). Each synopsis was constructed with forty-seven targets, most of which occurred in all or nearly all of the interviews that were completed for the Colorado component of the LAWS project. These target items were selected to create an inventory of vowels used by each informant, and work on the phonetics of Colorado speech follows from the information that is present in the synopses.

For each item in which there is adequate evidence to determine the quality of the target vowel, the result was placed within the appropriate column in broad phonetic transcription. When words were found to have a variety of pronunciations with respect to the primary vowel, I presented all the pronunciations on the spreadsheets. Although there is little confusion at the top of the spreadsheet with respect to which vowel goes with which word, where there is confusion at the bottom of the sheet, such as when one phonetic symbol stands for the vowel sound of both the word in the left column and that in the right, the phonetic symbol was written in bold and italicized font. Additionally, in those cases in which a word had two vowel articulations and one of these sounds was shared by the other word in the same row, the word with the variant pronunciations was italicized, as was the sound found in both words.

While most target items do occur in all of the interviews, there are several targets that do not. In many of these cases, a replacement word was found that was similar to the target item in its articulation, particularly in the sound immediately following the vowel in question, and an attempt was made to keep the number of replacement words as small as possible. In the synopses, these replacement words are presented within parentheses in the slots usually reserved for the target item. When no suitable replacement was found, an asterisk precedes the target item and the cell reserved for the vowel in that word is left open.

Although the SIL phonetic fonts were employed for the task of representing the vowel sounds of Colorado English, diacritics were kept to a minimum in the synopses and an analysis incorporating the information conveyed by the diacritics that were used has not been undertaken. Rather, an analysis based on phonemic differences in the vowel inventories of Colorado informants has been conducted, both in the

phonetic realizations of individual words and in a broader analysis of vowels of particular concern with respect to this data, namely, the [ɑ] and [ɔ].

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek		ɪ													u	school
six		ɪ													u	root(beer)
crib		ɪ												ʊ		roof
eight			e											ʊ		pull
*keg														ʊ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ											u	poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ							ɔ	o			corn
(calf)						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
pond							ɑ				ɔ					(thaw)
John							ɑ				ɔ					frost
college							ɑ				ɔ					dog
father							ɑ				ɔ					water
barn							ɑ				ɔ					daughter
crop							ɑ				ɔ					moth
wire								ai		au						down
(nice)								ai		au						out
five								ai			ɔ					drouth
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bear				ɛ									o			home
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John							ɑ					ɔ				frost
college							ɑ					ɔ				dog
father							ɑ					ɔ				water
barn							ɑ					ɔ				daughter
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six		ɪ													u	root(s)
crib		ɪ												ʊ		roof
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Mary				ɛ										ʊ		soot
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bear				ɛ									o			home
corral				ɛ									o			four
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college							ɑ				ɔ					dog
father							ɑ				ɔ					water
barn							ɑ				ɔ					daughter
crop							ɑ				ɔ					moth
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crib		ɪ												ʊ		roof
eight			e											ʊ		pull
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glass						æ						ʌ				mother
aunt						æ										
pond							ɑ				ɔ					(thaw)
John							ɑ				ɔ					frost
college							ɑ				ɔ					(frog)
father							ɑ ^				ɔ					water
barn							ɑ				***ɔ***					(coffee)
crop							ɑ				ɔ					moth
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six		ɪ													u	root
crib		ɪ													u	roof
eight			e											ʊ		pull
keg				ɛ ^										ʊ		wood
Mary				ɛ										ʊ		soot
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corral				ɛ									o			four
sermon					ɜ						ɔ					corn
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glass						æ						ʌ				mother
aunt						æ										
pond							ɑ				ɔ					(thaw)
John							ɑ				ɔ					(frost)
college											ɔ					dog
father							ɑ				ɔ					water
barn							ɑ				ɔ					daughter
crop							ɑ				ɔ					moth
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keg				ɛ ^										ʊ		wood
*Mary														ʊ		soot
ten				ɛ												
head				ɛ ^									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ								o			corn
(calf)						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
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John							ɑ				ɔ					frost
college											ɔ					dog
father											ɔ					water
barn											ɔ					daughter
crop							ɑ				ɔ					moth
wire								ai		au						down
(ice)								ai		au						out
five								ai		au						drouth
									ɔi							(boys)
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i														u	school
six		ɪ												ʊ		root (beer)
(pig)		ɪ														*roof
eight			e											ʊ		pull
keg				**ɛ**										ʊ ^		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ								o			corn
half						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
pond											**ɔ**					law
John											**ɔ**					frost
college											**ɔ**					dog
father							ɑ				ɔ					water
barn							ɑ				ɔ					daughter
crop							ɑ				ɔ					(coffee)
wire								ai		au						down
(nice)								ai		au						out
five								ai		au						(drought)
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i	ɪ													u	school
six		ɪ												ʊ		root (canal)
crib		ɪ												ʊ		roof
eight			e											ʊ		pull
keg				ɛ ^										ʊ ^		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ										ʊ		poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ								o			corn
half						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
pond							ɑ				ɔ					law
John							***a***									frost
college							ɑ				ɔ					dog
father							ɑ				ɔ					water
barn							ɑ				ɔ					daughter
crop							ɑ				ɔ					moth
wire								ai		au						down
twice								ai		au						out
five								ai		au						drouth
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i														u	school
six		ɪ												ʊ		root(s)
crib		ɪ												ʊ		roof
eight			e											ʊ		pull
keg				ɛ										ʊ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ										ʊ		poor
*bear													o			home
corral				ɛ									o			four
sermon					ɜ								o			corn
half						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
pond											ɔ					(thaw)
John											ɔ					frost
college											ɔ					dog
father											ɔ					water
barn											ɔ					daughter
crop											ɔ					moth
wire								ai		au						down
twice								əi		au						out
five								əi		au						drouth
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek		ɪ													u	school
six		ɪ														*root
crib		ɪ												ʊ		roof
eight			e											ʊ ^		pull
keg				ɛ										ʊ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ											u	poor
bear				ɛ									o			home
corral				ɛ									o			four
(German)					ɜ								o			corn
half						æ						ʌ				sun
(pass)						æ						ʌ				mother
aunt						æ										
pond							ɑ				ɔ					law
John							***a***									frost
college							ɑ				ɔ					dog
father							***a***				ɔ					*water*
barn							***a***									daughter
crop							ɑ				ɔ					(trough)
wire								ai		au						down
(nice)								əi		au						out
five								ai		au						drouth
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek		ɪ													u	school
six		ɪ														*root
crib		ɪ														*roof
eight			e											ʊ ^		pull
*keg				ɛ										ʊ		wood
Mary				ɛ^												*soot
ten				ɛ												
head				ɛ												*poor
bear				ɛ									o			home
corral						æ							o^			four
(Germany)					ɜ								o			corn
half						æ						ʌ				sun
(Pass)						æ						ʌ				mother
*aunt																
(bond)							ɑ ^				ɔ					law
(Johnson)							ɑ ^				ɔ					(faucet)
(Colorado)							ɑ				ɔ					dog
father							ɑ				ɔ					water
barn							ɑ				ɔ					(taught)
(stop)							ɑ				ɔ					(trough)
wire							ɑ			æu						down
(nice)							ɑ			æu						out
five								ai		au						drouth
									ɔi							(boy)
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek		ɪ													u	school
six		ɪ													u	root (beer)
crib		ɪ												ʊ	u	roof
eight			e											ʊ		pull
keg				ɛˆ										ʊ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral						æ							o			four
sermon					ɜ								o			corn
*half												ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
*pond											ɔ					law
John							***ɑ***				ɔ					***(faucet)***
college							ɑ				ɔ					dog
*father											ɔ					water
barn							ɑ				ɔ					(coffee)
*crop											ɔ					moth
wire							ɑ			au						down
(nice)								ai		au						out
five								ai		au						drouth
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i														u	school
six		ɪ													u	root (crops)
crib		ɪ												ʊ		roof
eight			e											ʊ		pull
keg				ɛˆ										ʊˆ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ									o	ʊ	u	poor
bear				ɛ									o			home
corral						æ							o			four
(German)					ɜ								o			corn
half						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
pond											ɔ					law
John											ɔ					frost
college							ɑ				ɔ					dog
father							ɑ				ɔ					water
barn							ɑ				ɔ					daughter
crop							ɑ				ɔ					moth
wire							ɑ			au						down
(nice)								ɐi		au						out
five								ai		au						drouth
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i														u	school
six		ɪ													u	root (beer)
crib		ɪ												ʊ		roof
eight			e											ʊ^		(bulls)
keg				ɛ^										ʊ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ						ɔ					corn
(calves)						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
*pond											ɔ					law
John											ɔ̀					frost
college											ɔ̀					dog
father							ɑ				ɔ					water
barn											ɔ̀					daughter
crop							ɑ				ɔ					(coffee)
wire							ɑ			au						down
(prices)								ai		au						out
five								ai		au						drouth
									ɔi							(boys)
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i													ʊ	u	school
six		ɪ														*root
crib		ɪ												ʊˆ		roof
eight			e											ʊ		pull
keg				ɛ										ʊ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ								o			corn
half						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
pond											ɔ					law
John											ɔ					frost
college											ɔ					dog
father							ɑ				ɔ					water
barn							ɑ									daughter
crop											ɔ					(fox)
wire							ɑ			au						down
(nice)								ai		au						out
five								ai		au						drouth
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i	ɪ													u	school
six		ɪ												ʊ		root(s)
crib		ɪ												ʊ		roof
eight			e											ʊ^		pull
keg				ɛ^										ʊ		wood
Mary				ɛ								ʌ				soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ						ɔ					corn
half						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
pond											ɔ					law
John											ɔ					frost
college											ɔ					dog
father							ɑ				ɔ					water
barn											ɔ					daughter
crop											ɔ					moth
wire							ɑ			au						down
twice								əi		au						out
five								ai		au						drouth
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i	ɪ													u	school
six		ɪ													u	root (V)
crib		ɪ												ʊ		roof
eight			e											ʊ		pull
keg				ɛ										ʊ̂		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ								o			corn
half						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
pond							ɑ				ɔ					law
John							***a***									frost
(cottage)							ɑ				ɔ					dog
father							ɑ				ɔ					water
barn							ɑ				ɔ					daughter
crop							ɑ				ɔ					(cloth)
wire								ai		au						down
twice								ai		au						out
five								ai		au						drouth
									ɔi							(joined)
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i	ɪ													u	school
six		ɪ														*root
crib		ɪ												ʊ		roof
eight			e											ʊ		pull
keg				ɛˆ										ʊˆ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ								o			corn
half						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ					ɔ					
pond											ɔ					law
John							ɑ				ɔ					frost
college											ɔ					dog
father							ɑ				ɔ					water
barn							ɑ				ɔ					daughter
(stop)							ɑ				ɔ					moth
wire							ɑ			au						down
(nice)								əi		au						out
five								ai		au						drouth
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i	ɪ													u	school
six		ɪ^													u	root (cellar)
crib		ɪ												ʊ		roof
eight			e											ʊ		pull
keg				ɛ										ʊ		wood
Mary				ɛ								ʌ				soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
(Germany)					ɜ								o			corn
half						æ						ʌ				sun
glass						æ						ʌ				mother
aunt						æ										
pond											ɔ					(thaw)
John							ɑ				ɔ					frost
college											ɔ					dog
*father							ɑ				ɔ					water
barn							ɑ									*daughter
crop							ɑ				ɔ					(cloth)
wire							ɑ	ai		au						down
(ice)								ai		au						out
five								ai								*drouth
									ɔi							joint
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek	i														u	school
six		ɪ												ʊ		root
crib		ɪ													u	roof
eight			e											ʊˆ		pull
*keg														ʊˆ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
(German)					ɜ								o			corn
half						æ						ʌ				sun
(pass)						æ						ʌ				mother
aunt						æ										
pond							ɑˆ				ɔ					law
John							***a***									(lost)
college											***ɔ***					dog
father							***a***				ɔ					*water*
barn							***a***				ɔ					*daughter*
crop							ɑ				ɔ					(coffee)
wire								ai		au						down
twice								ai		au						out
five								ai		au						(drought)
									ɔi							(joined)
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	

	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	
three	i														u	two
creek		ɪ													u	school
six		ɪ													u	root(ing)
crib		ɪ												ʊ		roof
eight			e											ʊ		pull
keg				ɛ^										ʊ		wood
Mary				ɛ										ʊ		soot
ten				ɛ												
head				ɛ									o			poor
bear				ɛ									o			home
corral				ɛ									o			four
sermon					ɜ								o			corn
half						æ						ʌ				sun
(pass)						æ						ʌ				mother
aunt						æ										
pond											ɔ					law
John							ɑ				ɔ					(lost)
college							ɑ				ɔ					dog
father							ɑ				ɔ					water
barn											ɔ					daughter
crop							ɑ				ɔ					(trough)
wire							ɑ			au						down
twice							ɑ			æu						out
five							ɑ			au						drouth
									ɔi							(boys)
	i	ɪ	e	ɛ	ɜ	æ	ɑ	ai	ɔi	au	ɔ	ʌ	o	ʊ	u	