



Montanas evolving urban system: a geography of economic linkages, 1869-1914
by James Robert Halberg

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in
Earth Sciences

Montana State University

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Abstract:

Reconstructing economic linkages between a developing frontier region and the national urban system creates additional insight into the roles out-of-state cities have on the development of frontier urban centers. Attempts have been made to understand these relationships by previous researchers with most studies occurring in the eastern United States. This is only the second study which takes place in the trans-Mississippi West and is unique because of the decentralized nature of Montana's urban system.

Out-of-state incorporation records are used to reconstruct patterns of large-scale economic linkages between Montana cities and the national urban system. The evolution of these connections suggests the shift from initial corporate investment by large national urban centers to more regionally-based investment by the end of the period. Channelized flows of corporate investments into Montana based on transport and functional economic links are also described. These patterns are related to the economic linkage model proposed by Conzen.

A content analysis of newspaper place-name mentions reflect the more day-to-day economic activity of Montana with the national urban system and offers a base of comparison to the large-scale corporate economic activity. The pattern of newspaper linkages differs from the incorporation records evolving from connections to many diverse small and large regional and national centers to a pattern that focuses on New York City by the end of the study period. This change is due to the maturation of Montana's internal economy and its continual integration with the national urban system. The important role of transportation is reflected in the strong linearity of linkages as proposed by Vance and supported by Wyckoff.

**MONTANA'S EVOLVING URBAN SYSTEM:
A GEOGRAPHY OF ECONOMIC
LINKAGES, 1869-1914**

**by
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**A thesis submitted in partial fulfillment
of the requirements for the degree**

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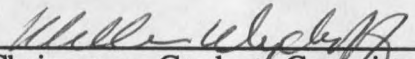
APPROVAL

of a thesis submitted by

James Robert Halberg

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

8-12-91
Date


Chairperson, Graduate Committee

Approved for the Major Department

8-12-91
Date

David R. Luges
Head, Major Department

Approved for the College of Graduate Studies

August 12, 1991
Date

Henry L. Parsons
Graduate Dean

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ABSTRACT

Reconstructing economic linkages between a developing frontier region and the national urban system creates additional insight into the roles out-of-state cities have on the development of frontier urban centers. Attempts have been made to understand these relationships by previous researchers with most studies occurring in the eastern United States. This is only the second study which takes place in the trans-Mississippi West and is unique because of the decentralized nature of Montana's urban system.

Out-of-state incorporation records are used to reconstruct patterns of large-scale economic linkages between Montana cities and the national urban system. The evolution of these connections suggests the shift from initial corporate investment by large national urban centers to more regionally-based investment by the end of the period. Channelized flows of corporate investments into Montana based on transport and functional economic links are also described. These patterns are related to the economic linkage model proposed by Conzen.

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INTRODUCTION

The American urban system experienced important changes during the late nineteenth century. The relative dominance of New York City decreased while regional centers became more influential in the growth of the trans-Mississippi West. Variables such as the transportation infrastructure and the economic base of the frontier regions greatly affected the types and patterns of business linkages between the developing frontier centers and the national urban system. Montana's incipient urbanization began in the 1860's as the region's mineral deposits were discovered. Over the past 130 years, the cities of Billings, Butte, Great Falls, Helena, and Missoula developed as major urban centers that reflected the varied economic bases of Montana. Butte and Helena began as mining settlements, whereas Missoula evolved from a military post and small agricultural center to a mining supply center with related businesses in timber, railroads, and agriculture. In the 1880's, Billings was established as a railroad town and developed into an important center for the agricultural industry in eastern Montana. In central Montana, Great Falls was built in anticipation of the arrival of the Great Northern Railroad and grew into an important transportation and supply center for the agricultural industry in that region of the state (Figure 1).

Each of these places developed into important twentieth century urban centers. This study examines the development of these cities as measured by their economic links to the national urban system. Selective components of their changing interregional economies during the 1865-1915 period are assessed. The linkages to the national urban system are examined through a content analysis of newspapers at various times throughout the study.

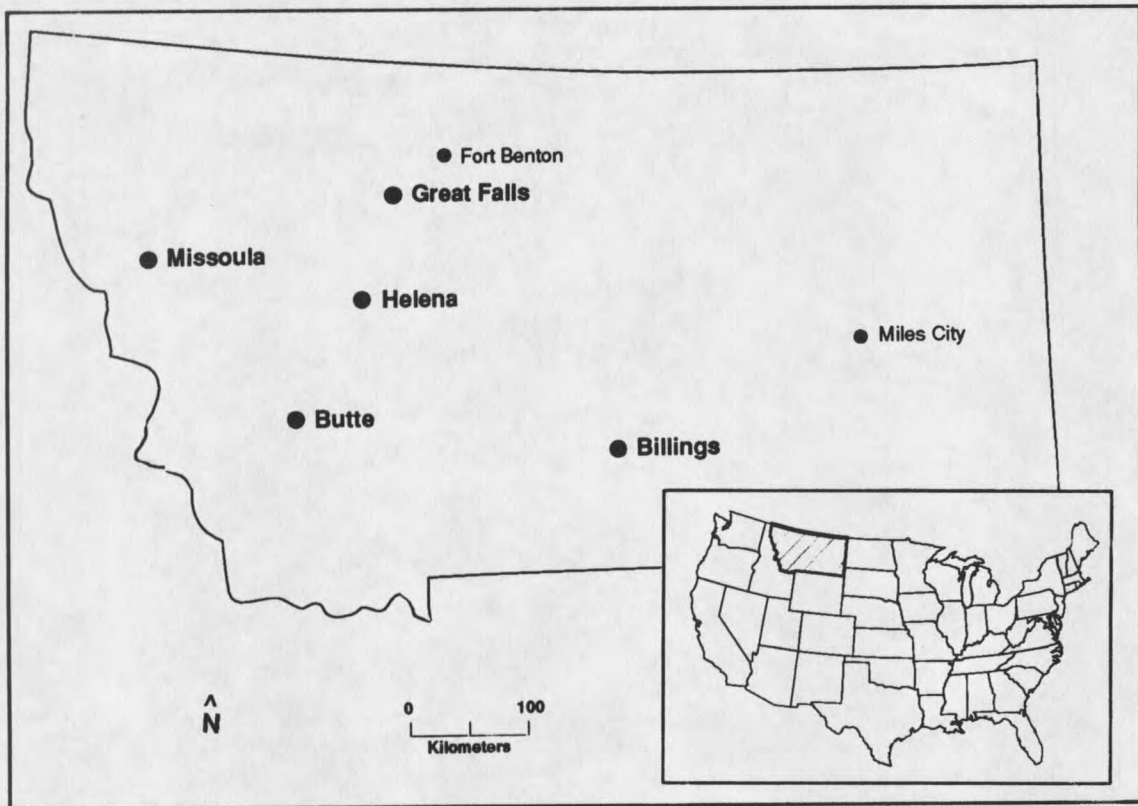


Figure 1. Montana urban centers studied.

Rationale

Reconstructing these linkages is important for several reasons. First, empirical data gathered adds to an important body of knowledge about urban linkages within the United States. In particular, this information can be used to understand the development of frontier urban places in the American West. Recent studies in Colorado (Wyckoff, 1988) suggest modifications of urban models for the American West. The Montana case study offers an opportunity to test the applicability of Wyckoff's modifications or to offer further modifications to other existing models.

Second, Montana provides an unusual case study because, relative to much of the West, its urban system is quite decentralized without one primate city that dominated the state for any long period of time. This presents a unique case which may offer a new perspective on previous studies of the national urban system and its relationship to frontier cities. For example, the decentralized urban population of Montana would set it apart from the Colorado study in which Denver had long been the state's primate city.

Finally, it is significant to note that the state's urban character evolved from varied economic factors. This resulted in a diverse set of regional and national linkages that differed widely from one section of the state to another. This study assessed the evolution of those connections between 1865 and 1915. For example, Butte's connections, because of its location and its emphasis on mining, may be quite unlike Great Falls' connections, given its location, different transportation connections, and its broader, agriculturally-based economy.

Models of Urban Linkages

There are a variety of theories which deal with the development of central places, frontiers, hinterlands, and gateway cities. These theories suggest developing patterns of interactions between urban centers and their relationships to an evolving national urban system. Recent theories of urban development have evolved from Christaller's Central Place Theory (Wheeler, Muller, 1986). Christaller's theory emphasized the importance of local demand and services for the growth of an urban place and did not examine the effects of interregional linkages on urban growth. Incorporating later studies of interregional linkages into the basic concepts of Central Place Theory improved our understanding of how urban places developed.

Vance's (1970) Mercantile Model focused on the relationship between frontier entrepôts and the national urban system, expanding Christaller's Central Place view of a localized economy. Vance emphasized transportation and stressed the role of long distance trade in the development of a frontier entrepôt. Johnston (1982) also focused on transportation and examined how these links were involved in developing the American frontier. Johnston noted how key transportation hubs developed at pivotal points between the hinterland and foreland. He also stressed the role and broad structural components of mercantile capitalism and linked them to the urbanization of American towns. Both Johnston and Vance suggested general models of linkages between frontier entrepôts and the national urban system rather than testing specific applications of these linkages in the American West.

Burghardt (1971) echoed many of the ideas of Vance and Johnston by focusing on the development of transportation links between gateway cities and the national urban system. He reinforced the concept of a linear development of frontier urban systems and focused on the further development of the hinterland rather than its links to the foreland. He also emphasized how a gateway city could be transformed into a central place as its hinterlands became developed and settled. Using Winnipeg as a model, Burghardt outlined its progression from a frontier trading center to a predominantly consumer-oriented town.

Muller's (1976) study assessed selective urban growth in the Middle Ohio Valley region from 1800 to 1860. He found that newer towns often had the most modern forms of transportation and as a result, became more important economic nodes. Since these nodes had the best access to regional markets, they developed other service-oriented industries and their populations increased quickly. Muller's second study (1977) expanded on Vance and Burghardt by focusing on the role of manufacturing in a developing urban center. Muller attempted to take into account many variables that affected urban growth.

He cautioned against overemphasizing transportation links as the main catalyst for growth, since many towns became linked to the national urban system but only a few developed into large urban centers.

Conzen (1977) discussed the national urban system of the United States from 1840 to 1910. He concentrated on the banking linkages of urban centers to hinterland regions and how they developed. He suggested a four-level hierarchical system of banking in the United States with New York City as the dominant center. A two stage model outlined developing bank linkages in a hinterland region. First, a link is made at the national level to either Chicago or New York. Secondly, as the hinterland develops, stronger regional banking links are made at the expense of the original national link. The majority of his study focused on the eastern United States, but important references were made to Kansas City, Denver, Omaha, and Minneapolis as major regional banking centers in the central United States. He concludes that the period of 1840 to 1910 witnessed a fundamental change in the geography of banking that reflected an evolution from a primate to a hierarchical system. The ongoing development of the American frontier and the nation's interior hinterlands contributed to this change.

Pred's (1980) study was less focused on frontier urban systems and concentrated more on the linkages of major urban places in the eastern United States between 1840 and 1860. He found that as a town in the eastern hinterlands matured, complex linkages with major urban centers developed. Pred demonstrated how these linkages changed over time and the importance of large regional and national urban centers in the development of hinterland places. One strength of Pred's study is the great diversity of historical evidence he utilized to demonstrate urban interdependencies in the eastern United States.

Meyer (1980) attempted to bring together many of the theories proposed by previous authors. He specifically examined the development of frontier urban centers and

their linkages to the national urban system. He also explained how these links changed as a frontier urban center grew and developed. The focus was on the interaction of national, regional, and frontier centers. In addition, Meyer examined the types of linkages by noting that the physical movement of goods occurred while the control for the exchange may not have originated in the same region. He went beyond looking just at the basic movement of goods and took into account these linkages of control of exchange. This model reconstructs the growth of a frontier center as its hinterland developed and how the center interacted with the national urban system. Meyer's model combined Vance's Mercantile Model and Christaller's Central Place theory into a model that approached a realistic view of developing urban places.

Wyckoff's (1988) study of Denver and Colorado linkages took the first critical look at Meyer's model in a frontier setting. Wyckoff's findings supported many parts of the Meyer Model along with some support for the ideas of Vance, Conzen, and Pred. However, Wyckoff suggested two weaknesses in the Meyer Model. First, he noted that the selective nature of urban growth is often not appreciated in existing models. Meyer's model did not address why one center may grow to become a thriving town while another stagnates or dies out altogether. Wyckoff also suggested that growth stimulated changing demands for goods and services which equated to changing linkages. Wyckoff's model offers an increased degree of conceptual flexibility by including a discussion of how changing linkages correspond to changes in the entrepot and changes through competition with neighboring regions. His case study was an illustration of the interaction between the national urban system and a region with a single primate city. This differs from Montana's frontier setting where the largest urban centers were scattered and served as important urban centers in different regions with no single primate city for the entire state.

The Montana Setting

Western Montana

Southwestern Montana was the first region in the territory to be developed. Rich mineral deposits formed the economic base of western Montana into the present century. The mining legacy began in 1852 when gold was discovered at Gold Creek east of Missoula. The first major gold rush occurred in 1862 in Bannack with strikes following in 1863 at Virginia City and 1864 at Butte and Helena (Burlingame, 1942). Placer mining by independent and small 2-3 man operations was the most common method to mine the gold which always quickly played out.

By the 1870's, silver became the focus of many mining companies and a decade later copper mining began in Butte where it grew to dominate the industry by the turn of the century. With the move away from placer towards the more capital intensive quartz mining, new methods were developed to handle the increased quantity of ores. Hydraulic methods, including river dredging in the 1890's, were used to get at more inaccessible deposits while the building of stamp mills and smelters increased so more ores could be locally processed (Spence, 1978). With the growth of silver and copper mining supported by eastern capital, the small operations were replaced with large, highly mechanized processes (Spence, 1978). Even as late as 1910, mining employed 13,000 people or sixty percent of the state's wage earners. At that time, the state's largest employer was the Anaconda Copper Mining Company which continually grew by acquiring smaller companies. With Anaconda leading the way, mining interests controlled other industries such as lumbering along with politics at the state and local levels (Toole, 1972).

As the mining industry developed, supporting activities such as farming, lumbering, and ranching expanded. In southwestern Montana the major farming and

ranching areas included the Deer Lodge, Madison, and Gallatin valleys. These regions helped supply nearby mining operations in Bannack, Virginia City, and Butte with vegetables, grains, and meats. The forested regions of the area supplied trees for local mills which produced lumber for miners and their mining operations (Malone, Roeder, 1976).

Far western Montana also developed strong agricultural, mining, and lumbering industries. Missoula was located along the Mullan Road and became a major supply center for the distribution of goods in the late 1860's (Koelbel, 1972). The Bitterroot Valley, south of Missoula, had very rich soil and proved to be an important agricultural valley while lumbering also developed in the Missoula area. Even as the precious metal mining industry slowed in western Montana in the 1870's and 1880's, the region's timber industry continued to grow. The arrival of the railroads in western Montana during the 1880's opened new markets for the timber industry as the region shipped lumber to other parts of the nation (Malone, Roeder, 1976).

The range cattle industry began in western Montana in the 1860's as small herds were raised around the forts in the area. These cattle, often brought north from the Oregon Trail, were an important source of meat for the forts, nearby mining camps, and were also exported by large cattle operations like the Kohrs ranch in the Deer Lodge Valley. Upwards of 90,000 head were owned by Kohrs at one time with as many as thirty trainloads sent to Chicago in a single season. In 1866, Nelson Story trailed six hundred Texas longhorns from Dallas to Livingston along the Bozeman Trail. This practice would become much more common as Montana's eastern grasslands opened up in later years (Spence, 1978). These western herds were the beginning of an industry that expanded north and east throughout the state and that became one of the bases of economic development for eastern Montana centers by the late nineteenth century.

Eastern Montana

Montana developed from west to east with its first eastern boom period occurring after the railroad's arrived in the early 1880's. Ranching and farming developed as the main industries of the east as the expansion of the ranching industry occurred quickly. By 1882, 1,000 carloads of cattle and 7,000 head of sheep were shipped from the Billings region (Wright, 1953, Cooper, 1981). Foreign investors were a part of this early expansion. A large amount of Scottish and English capital had entered the ranching industry of the western United States, including Montana, by the early 1880's. This resulted in the 1887 Congress prohibiting foreign companies from buying land in western territories. In the severe winter of 1886-87, many of Montana's cattle were killed. Herds that fed on open range and were controlled by absentee owners suffered most with overall losses ranging from 40-70%. The severe winter and the restrictive 1887 law resulted in a decrease in large corporate ranchers in the state. The fencing of open range increased the number of smaller ranches and created available land for farmers entering eastern Montana in the late 1800's and early 1900's (Spence, 1978).

Sheep were also raised throughout Montana beginning with sheep drives from California in the early 1860's. But the industry experienced its largest growth in eastern Montana, especially in the 1880's. The Northern Pacific reached Miles City in 1881 providing sheep and cattle operations access to eastern markets. By 1886, the number of sheep in the state rose to two million and peaked in 1900 with six million, resulting in six sheep for every head of cattle in the state. The number of sheep decreased over the following decade because of instability in the wool markets, the increased use of fences in the industry, and the tendency for sheepmen to keep smaller flocks (Spence, 1978).

Farming operations began in the southwestern valleys and by 1870, over 80,000 acres of improved farmland produced enough wheat so flour no longer needed to be

imported. With the help of irrigation, farmers migrated into central and eastern Montana. Farming quickly expanded in the late 1800's in eastern and northern parts of the state as settlers plowed up what once were rangelands for cattle and sheep. The number of farms grew from 5,600 in 1890 to 13,000 by 1900 and average farm size expanded from 350 to 886 acres during the same period (Spence, 1978). The population of the state also grew tremendously, from 243,000 in 1900 to approximately 450,000 by 1915. This large migration into the state was in part the result of recruitment by James J. Hill and the Great Northern Railroad which advertised in Northern Europe and the Midwest. Hill extolled the tremendous wealth that could be generated from Montana's virgin soils as compared to the "exhausted" lands of the Midwest. Another incentive to settle in Montana was the 1909 and 1912 Homestead Acts which provided 320 acres (instead of the previous 160 acres) of land for a very small fee and a seven-month residency requirement. Many often ill-prepared "honyockers" accepted these inducements and moved to Montana, increasing the number of homestead entries in the state from 12,500 in 1912 to over 20,000 by 1914 (Groth, 1970). Irrigation was in use in eastern Montana but by the early 1900's, agriculture boomed with the advent of dryland farming techniques (Lang, Meyers, 1979).

Transportation

Four main transportation routes were Montana's earliest pre-railroad links with regions outside the territory (Figure 2). The Missouri River provided a principal avenue into eastern and northcentral Montana. Two important trading centers developed along the Missouri River. Fort Union was located in the east and Fort Benton was established downriver from present-day Great Falls. These forts conducted trade via steamboats that traveled from Omaha, Council Bluffs, and St. Louis (Malone, Roeder, 1976). A second link, the Mullan Road, was completed in 1862. It originated in Walla Walla, Washington

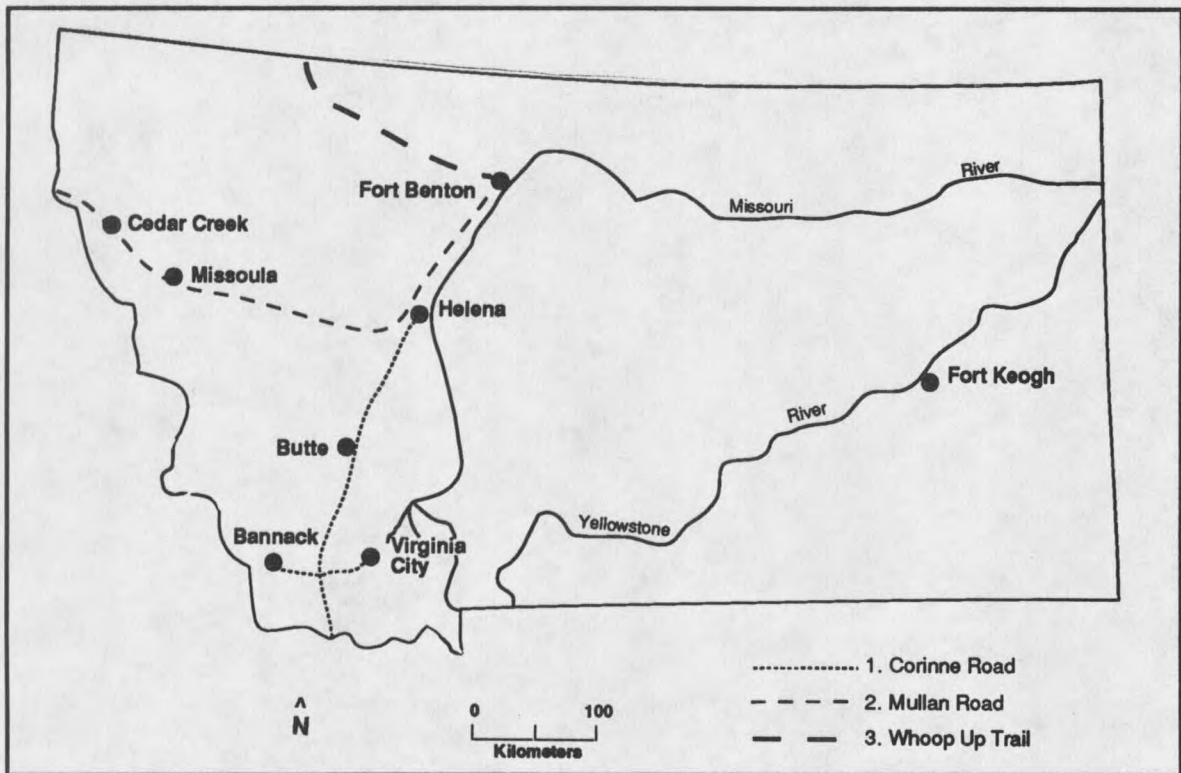


Figure 2. Montana's pre-railroad transportation routes.

and passed through Missoula and Helena before ending at Fort Benton (Burlingame, 1942). The Mullan Road helped open the intermountain region of the state as it was Montana's first route to connect with the coast via the Columbia River. In 1865, 750 tons of merchandise traveled over the western part of the road. It became an important route for goods and miners entering the region resulting in Walla Walla and St. Louis competing for the mining camp business (Olinger, 1980). The third important route was the Corinne-Virginia City road that connected the southwestern mining regions to Salt Lake City and offered access to the transcontinental Union Pacific Railroad at Corinne, Utah. This was also a very important route for people and supplies entering Montana's early mining regions (Malone, Roeder, 1976). Lastly, traffic on the Whoop-Up Trail boomed during the 1874-1885 era. The Whoop-Up connected Fort Benton with Fort McLeod in Canada

and accounted for over one-third of Fort Benton's total freight handled through the eleven-year period (Sharp, 1955). The building of the Canadian Pacific Railroad to Fort McLeod in 1883 signaled an end to the economic influence of the Whoop-Up Trail on Fort Benton (Overhosler, 1980).

There were other trails and routes that were used before the arrival of the railroad but these were either short-lived or could not be sustained as commercial corridors for various other reasons (Malone, Roeder, 1976). An example is the Bozeman Trail which was completed in 1863. It branched off the Oregon Trail in Wyoming and cut across southwestern Montana to Virginia City. This trail went through Sioux hunting grounds and was eventually closed by Indian attacks. The Fisk Route from Minnesota was another briefly used route which carried eight wagon trains and approximately 1,400 people to Montana from 1862 to 1867 (Spence, 1978).

The railroads reinforced some of these older routes and also established new links to Montana, greatly improving access from the rest of the nation (Figure 3). In 1881, tracks were laid to Miles City from the east by the Northern Pacific while the Utah Northern Railroad reached Silver Bow following the Corinne-Butte wagon route. The Northern Pacific completed its line from St. Paul to Tacoma in 1883 across the southern part of Montana, while the Great Northern dominated northern Montana by the late 1880's and linked the region to the West Coast by 1893 (Malone, Roeder, 1976).

From 1890 to 1915 the railroads greatly influenced the development of Montana. The railroads helped to establish Billings and Great Falls in the early 1880's and reduced the importance of transportation on the Missouri and Yellowstone Rivers and along the Mullan and other wagon roads. The cattle industry expanded from the central river valleys eastward and agriculture became an important activity in eastern Montana. The railroads

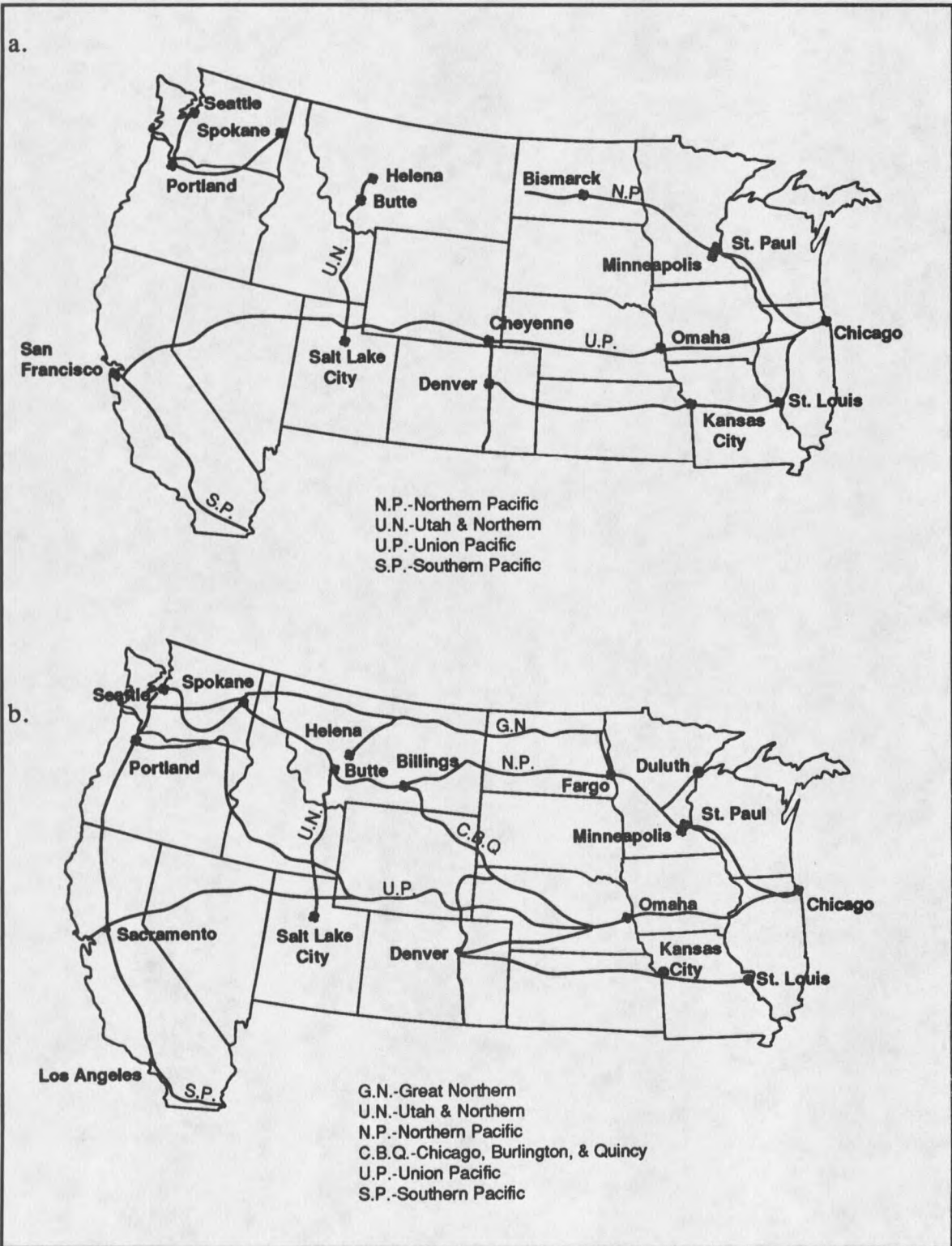


Figure 3. Major western railroads, 1880 (a) and 1890 (b).

also solicited new homesteaders from other parts of the United States to develop and settle eastern Montana (Malone, Roeder, 1976).

Urban Development

The population and influence of early mining boom towns such as Virginia City and Bannack decreased as their placer deposits played out and new mineral discoveries were made in other parts of southwestern Montana. One of the new emerging centers was Butte, which grew to become an important mining and commercial center by 1900 and the largest urban center in Montana through the 1940's. Butte was first established in 1864 with the discovery of gold on Butte Hill (Hamilton, 1957). The placer gold deposits were exhausted by the late 1860's and Butte looked as if it would become another mining ghost town. However, silver was discovered in the 1870's to temporarily revive the town. The future of Butte was assured in 1883 when the copper industry was established. Its population reached well over 50,000 by the end of the study period. The ores mined in Butte were shipped out either via Fort Benton and the Missouri River or south to Corinne, Utah and transported on the Union Pacific Railroad to the eastern United States. Sometimes the ores were even shipped west and taken around South America by ship to Wales for processing (Devitt, 1988). The 1881 arrival of the Utah and Northern Railroad in Silver Bow made shipments to Utah quick and economical while the Northern Pacific created a direct route east after 1883 (Malone, Roeder, 1976, Burlingame, 1942).

As the potential of copper mining in Butte was realized, eastern capital developed large mining and smelting operations. For example, Boston financiers bought the Boston & Montana and Butte & Boston mines. As a result of the tremendous amounts of money entering Butte, mining politics began to play a more active role in Butte and in the state as exemplified by the well documented "War of the Copper Kings" (Toole, 1953). By 1900,

Butte was mining 50% of the copper in the United States making it the largest copper producer in the country (Hill, 1981, LeMauviel, 1983). By the turn of the century, Butte's population was 40,000 with the mines paying \$1 million a month in wages to the miners. Mining controlled so much of the state's economy that when Amalgamated (which controlled all copper mining in the state by the early 1900's) suspended operations for three weeks in 1903, an estimated three-fourths of Montana's work force was unemployed (Thompson, 1899, Toole, 1953). Copper totally controlled Butte in the last fifteen years of the study. Production increased from 75 million pounds in 1885 to 300 million pounds by 1915 while Butte's population rose to 50,000 with an additional 50,000 people in the surrounding areas (McIntosh, 1916).

As with Butte, Helena began as a gold mining town with the discovery of gold in 1864. By 1870, Helena was the largest town in the territory with a population of over 3,000 and its mining industry had produced \$15,000,000 of placer gold (United States Census, 1870, Thresher, 1890). Its gold was transported either to Fort Benton where it was shipped east via the Missouri River or to Corinne, Utah where it was loaded onto the Union Pacific rail line (McManus, 1956). After 1870, Helena slumped as the placer gold was all mined and quartz mining had not yet begun. However, the city received a boost when it was selected as the capital of the territory in 1875. In 1883 the Northern Pacific Railroad reached Helena bringing with it the heavy equipment to develop quartz mining in the area and the ability for ores to be shipped out for processing (Thresher, 1890). Helena's growth continued into the early 1890's as all three transcontinental railroads had connections to the city, creating new linkages to the national urban system (Graff, 1964, Meloy, 1984). Helena's boom period ended in 1893 as the silver crash and railroad strikes hurt commerce. The city's population declined from 13,834 in 1890 to only 10,770 by 1900 (Malone, Roeder, 1976, United States Census Report, 1900). Helena's economic

diversity helped it recover from the recession and its population slowly grew as it developed into a stable Montana urban center.

Missoula was originally established as a supply point along the Mullan Road furnishing goods to travelers while also providing lumber and food to the local mines in southwestern and central Montana. Between 1863 and 1866, 20,000 people and \$1 million of freight passed over the Mullan Road (Koelbel, 1972). Hellgate (1861-1864) was the first settlement at the north end of the Bitterroot Valley. When a saw mill was built four miles away in 1864, the population of Hellgate began to migrate to that location and the townsite of Missoula was established. Gold was discovered on the Blackfoot River just east of town in 1865 bringing more people into the region. A flour mill was built the same year and by 1869, there were fifty buildings in town and about 2,000 residents. The nearby Bitterroot Valley also was becoming an established agricultural region and by 1871 there were 150 farms in the valley selling their products to the mills and retailers of Missoula (Joscelyn, 1971). The early 1870's saw hard times in Missoula as the gold played out and the population began to decline. Two important events then took place to insure the town's longevity. The first occurred in 1877 when Fort Missoula was built to protect the citizens from local Indians. The second event was in 1883 when the Northern Pacific Railroad was completed, linking the town to the transcontinental line (Koelbel, 1972). A roundhouse was built in 1885 and by 1889, a rail line had been built into the Bitterroot Valley which further opened up the area for logging, mining, and agricultural development. Ranching grew during this period having been established in this part of Montana as early as the 1860's when sheep were trailed into the region from California. In 1896, a new gold strike at Rock Creek near Missoula brought a new surge of miners into the region and firmly established Missoula as a diverse center for many different industries and created steady growth in the city throughout the study period (Koelbel, 1972).

Fort Benton was first established in 1846 as Fort Lewis. It served as an American Fur Company trading post along the Missouri River which supplied the entire region from Virginia City to Fort McLeod in southern Alberta (Harber, 1930). Steamboats linked St. Louis, Omaha, and Bismarck to the "Chicago of the West" as Fort Benton liked to call itself. In the early 1860's, only six steamboats undertook the nine-week trip from St. Louis, arriving in Fort Benton to bring supplies from the east and returning loaded with furs. In 1866 and 1867, however, the Montana gold rush brought seventy steamers and 10,000 miners and their supplies to Fort Benton (Gamble, 1956). Gold was then shipped down the Missouri until the gold rush ended in 1870. Commerce decreased over the following five years even though the shipment of supplies to isolated Canadian towns in southern Alberta continued along the Whoop-Up Trail (Bakke, 1988). Events in the 1880's combined to further reduce Fort Benton as an important trade center. In 1883, Great Falls was platted forty miles upstream as a future railroad hub for the Great Northern Railroad. A year later, the Canadian Pacific railroad was built to Calgary and with southern Montana controlled by the Northern Pacific railroad, Fort Benton's role as a supply center for these regions declined (Overholser, 1980).

Extensive building in Great Falls began in 1884 with the town growing quickly after the railroad arrived in 1887. In that same year, the Montana Central Railroad linked Great Falls, Helena, and Butte (Burlingame, Toole, 1957). Easy access to transportation plus extensive coal deposits (important in the smelting process) near Great Falls enabled the city to become an important center in the mining industry (Bertsche, 1975). The city developed a diverse economic base but the emphasis remained on mining and mining-associated industries such as the Boston and Montana Copper Smelting Works built in 1890 and the Montana Smelting and Refining Company in 1892 (Gibson, 1914). A silver panic and railroad strike hit Great Falls hard in 1893 and the area turned to agriculture as

dryland crops such as wheat and barley were grown (Diamond Jubilee Inc., 1959). In the 1890's and throughout the early years of this century, Great Falls continued its steady growth and further developed as an important power supply and milling center while increasingly serving as a transportation focus for the entire region including southern Alberta.

In eastern Montana, Miles City was originally established as a supply center for nearby Fort Keogh, which was built to control the Indians after the Battle of the Little Big Horn in 1876 (Miles City Star, May 24, 1934). The steamboat traffic along the Yellowstone River created the city's economic link to the east. Cattle and sheep were brought to the area in the late 1870's and established the ranching industry in eastern Montana (Miles City Star, May 24, 1934). In the 1880's, Montana wool was sent downriver to Omaha and St. Louis and then east to Boston's woolen mills (Meloy, 1983). Miles City remained the dominant center in the eastern region of the state as the Northern Pacific Railroad reached town from the east in 1881 (Kurkowski, 1976). However, the railroad continued building westward and by 1882 Billings was established as the main hub in eastern Montana and quickly surpassed Miles City in size and regional economic importance.

Billings was known as the "Magic City" because of its supposed tremendous growth. Following the 1882 arrival of the Northern Pacific railroad, agriculture was quickly established in eastern Montana and Billings became the major transport hub for sheep and cattle shipments to the east (Burlingame, 1942). Between 1890 and 1910, Billings shipped out at least 13,000 pounds of wool every year. In 1894, another railroad, the Chicago, Burlington and Quincy, arrived and connected the town with St. Louis, Kansas City, and Lincoln, Nebraska (Albro, 1982, Cooper, 1981). Despite these developments, Billings struggled to survive in its early years as there was a lack of

confidence that there was enough local business to sustain the town. By the late 1890's, however, Billings' struggle had been won. It grew steadily over the following twenty years as the homesteading boom began in the early 1900's with many midwestern farmers moving to the region (Burlingame, Toole, 1957). By 1910, dryland farming techniques were established and with promotion by railroad companies, thousands of new homesteaders arrived in the region (Lang, Meyers, 1979). Many of these new arrivals depended on Billings for supplies as it became the major distribution center for an area stretching into northern Wyoming. By 1915, Billings had developed into an important agricultural region. Four million acres of dry land farming produced mostly corn, oats, and flax while one million acres of irrigated farm land near the Yellowstone River supported grains, potatoes, strawberries, and sugar beets. These crops also helped develop the industries of sugar refining, stock feed lots, and meat packing (Smith-Brooks, 1917).

Hypotheses

The object of this research is to examine the applicability of the current literature on urban linkages to the Montana setting. It is hypothesized that newspaper content analysis will suggest regional differences, within the state, in the geography of linkages to the national urban system and that the linkages changed over time. These differences will be affected by each region's transportation linkages and distinctive economic bases.

Burghardt (1971) and Johnston (1982) argued for the importance of transportation as key components in the development of urban linkages. Wyckoff (1988) emphasized that a region's economic base will affect its linkages to the national urban system. For example, Butte and Missoula should develop very different patterns of linkages not only because of

their different transportation links but also because the economy of Butte was based on mining and transport of minerals whereas Missoula's economy was focused on agricultural and lumber industries. Over time, these differences should decrease as the entire region became better integrated into an emerging national urban system (Conzen, 1977). The study also tests whether Montana's eastern urban centers tended to link to particular urban centers in the eastern United States while western Montana urban centers developed a different set of linkages to the selected regional centers in the western United States.

The relative impact of the railroad can be assessed by comparing the first sample (1877) and the second sample (1887) of the newspaper data. Vance (1970) discussed the linearity of linkages based on transportation while Wyckoff (1988) and Meyer (1980) emphasized that early transportation links tended to be subregional but as the center grew and improved its transportation system, the transportation links changed to a more national level. For example, this national shift and trend to linearity should be demonstrated as Missoula multiplied its links outside the region after the railroad's arrival in 1883 and with the relative expansion of its lumber and agricultural industries. Butte and Helena could also send more of their ores to eastern sites for processing and manufacturing as the railroad expanded into their regions after 1880. Billings was established as a direct result of the railroad and prospered through the links developed by the railroad to the eastern United States. The links established after 1887 should reflect a more national and linear linkage pattern. A further comparison of the data should reflect a continual integration of Montana's urban centers into the national urban system, both in terms of transportation and in terms of general economic linkages.

The geography of corporate links will concentrate first on New York's dominance and then reflect a greater spread to smaller midwestern regional centers such as Chicago and the Twin Cities. Over time, this spread to the smaller centers should continue to other

regional centers like Spokane, Salt Lake City, and San Francisco. Conzen (1977) supports this through his study of bank linkages between 1840 and 1910 while Wyckoff's (1987) Colorado study echoes Conzen. Wyckoff also noted that there were very few linkages to the non-urban South which should also hold true for Montana. Through time, Montana's corporate linkages should shift towards regional centers such as Spokane, Salt Lake City, San Francisco, and midwestern centers.

Montana's centers have relatively disparate economic bases and as a result, should demonstrate different corporate linkages to the national urban system depending on their economic specializations. Wyckoff (1987), for example, noted an important difference between insurance and mining linkages. Mining connections from Montana should concentrate on regions in the Midwest and eastern United States where access to investment capital was greatest (eg. New York City). Insurance connections should develop between Montana's urban centers and national urban centers with specializations in insurance (San Francisco, Hartford, Boston, etc.). The corporate linkages to Montana from the national urban system should focus on Montana's largest urban centers with the most capital intensive activities. During the first three periods (1869-1903) the focus should be on Butte and Helena which were particularly conducive to mining links whereas the other Montana urban centers should reflect a more even distribution of non-mining links. The 1904-1914 period should see Helena become more similar to the other Montana urban centers, while Butte maintains its strong mining linkages. Correlating these changing patterns of corporate linkages with the relative population changes in Montana cities over time will suggest those centers with high amounts of corporate activity.

Finally, data from the newspapers and corporate records will be compared. Over time, the corporate records should demonstrate a focus on the larger urban centers while the newspapers yield linkages to a greater diversity of smaller, regional centers. The corporate

linkages from Montana to out-of-state large centers should be established by large capital intensive businesses such as mining and ranching. Meyer (1980) and Wyckoff (1987) showed that corporate linkages concentrated in the largest centers in the national urban system with few corporate links to distant, smaller centers.

METHODS

This study examined Montana's economic linkages to the national urban system from 1869-1914 during Montana's frontier development. The beginning date was selected because of the availability of incorporation records and newspaper data after that year. Earlier economic activities in the territory focused on the gold rushes in southwestern Montana (Bannack, Virginia City, Butte, and Helena). These pursuits contributed to Montana's development but were dominated by individuals who worked in a region of little government control. There were also few comprehensive economic records of their activities. Even though there can be no way to determine an exact date that marks the end of Montana's frontier era, 1914 is an acceptable cut-off date for several reasons. Between 1915 and 1920, much of Montana's remaining settlement frontier closed. With the arrival of the automobile, plane, electronic communication, and cheap oil, the entire region subsequently became a part of the national economic system (Borchert, 1987). Conzen (1977) states that by 1910, the nation achieved a four level hierarchical system of banking, replacing the system that recognized New York City as the primate financial center of the nation. As a cut-off date, 1914 also offers a point before the beginning of World War I in which the United States is thrust into a more globally-oriented economic market with new influences and variables.

Several methodologies have been used to measure economic linkages in urban systems including banking correspondent linkages, incorporation records, transportation patterns, and newspaper place-name mentions (Vance 1970, Conzen 1977, Pred 1980, Wyckoff 1987). This study uses incorporation data and newspaper place-name mentions to determine economic linkages to Montana from outside the state. The incorporation data

allow for an examination of out-of-state business investment into frontier Montana. These data show business type, out-of-state headquarters, and location of the business within Montana. This aspect of economic involvement illustrates the types of businesses that invested in the state throughout its frontier development and what areas of the country influenced Montana's development. These linkages are plotted and mapped by time periods to establish patterns and changes over time. A study of the newspaper place-name mentions focuses upon a link which is based on the day-to-day needs of Montana residents. These needs are demonstrated by the type of information (advertisements, train schedules, news articles, etc.) carried in local newspapers. Newspaper linkages illustrate patterns that were heavily influenced by Montanan's requirements for out-of-state goods and information, as well as reflecting the importance of transport links into the region.

Incorporation Records

In order to maintain some degree of control and accountability, the 1867 Montana territorial legislature passed an act to provide for the formation and reporting of corporations in the territory starting in 1868 (General Laws, 1868). This act applied to both domestic (in-state) and foreign (out-of-state) businesses. Information businesses were required to report included the name of the company, date of incorporation, out-of-state headquarters, in-state location of operations, business type, and amount of capitalization. Four records (out of a total of 1277) were listed as missing, but all others were recorded even if they no longer operated in the state. These records were originally filed and remain at the Secretary of State's office in Helena.

This study focuses only on the foreign (out-of-state) incorporation records from 1869-1914. The incorporation data for the forty-six years of this study are divided into

four roughly equal eleven-year time periods that also reflect periods of important economic change in Montana. The first period (1869-1881) encompasses the territory's pre-railroad era and focuses on the great economic activity related to the mining boom in the western and southwestern portions of the region. The second period (1882-1892) is the era of initial railroad construction into the state from the east with connections completed from the Twin Cities across Montana to the west coast by the Northern Pacific (1883) and Great Northern (1890) railroads. This period also sees Montana achieving statehood in 1889. The third period (1893-1903) begins with the national economic recession of 1893. It also marks the era in which eastern Montana experiences the first large-scale influx of agricultural immigrants. The 1904-1914 period represents an important transitional era for the national economy along with the firm establishment of the agricultural industries within Montana. The state's population continued to grow, especially in the east.

Seven Montana cities received special attention in the incorporation records. Five of these (Billings, Butte, Great Falls, Helena, and Missoula) are important urban areas today, while the other two (Fort Benton and Miles City) were very important in Montana's early development but were eventually overshadowed by other centers. Because of the size of Montana and the fact that there is no single primate center in the state, focusing on five diverse centers permits assessment of a diverse set of economic linkages between varied portions of the state and out-of-state centers.

All pertinent data for each business were recorded on index cards and later transferred to a computer. Information used in this study included the business name, date of incorporation, business type (business types could not be determined in a few cases so no type was recorded), in-state location, and out-of-state headquarters. No out-of-state or in-state offices could be determined for several businesses while some businesses listed more than one out-of-state office. In the latter, all offices named were recorded unless it

was clearly stated that one was the main base of operations. Locational information was usually given as a town or city, however, in some instances a county name was given and was recorded as such. After initial analysis of the data, it was found that the majority of the business types fell into six groups. These included mining, agriculture, banking/finance, real estate, utilities (water and power companies), and insurance. A breakdown into groups by business types was important in order to determine patterns in the geographic linkages between out-of-state cities and specific Montana sites. These data were then organized by the urban point of origin for each company to determine which national urban areas influenced Montana during each period and how these patterns compared with earlier hypotheses offered by Wyckoff, Vance, Pred, and others.

The data were then separated by the operating locale of the company within Montana with a focus on the seven major cities of this study. This process identified the relative importance of Montana urban places during each specific period. This breakdown also allowed for an examination of strong linkage patterns between a specific Montana town and an urban place within the national urban system.

Newspaper Data

A content analysis of selected Montana newspapers was also completed to reconstruct patterns of economic place-name mentions for the region. In 1969, Klaus Krippendorff stated, "Content analysis...is the use of replicable and valid methods for making specific inferences from text to other states or properties of its source" (Moodie, 1971). The use of content analysis in the field of historical geography is widely accepted, producing numerical data which can support or contradict ideas and hypotheses.

"Unitizing" or counting similar data can easily be checked for validity by repeating the

study using the same data base (Carney, 1971). Both Pred (1980) and Wyckoff (1988) have further demonstrated that a content analysis of economic-related place-name mentions can be a useful measure of connections between urban centers.

A comparison of the incorporation and newspaper place-name data is an important part of the study and the towns and dates selected for the newspaper facilitated this comparison. The Montana centers chosen for newspaper analysis were Butte, Helena, Missoula, Great Falls, and Billings, with Fort Benton and Miles City used in place of Great Falls and Billings for the first time period only. The four dates selected for newspaper sampling were 1877, 1887, 1898, and 1909, with January, April, July, and October used to select sample issues. These eleven year intervals fall in the middle of the time periods used for the incorporation data which permits comparison between the two data sources. The months selected account for any seasonal differences. One issue was selected for each month and town for every time period resulting in 80 total newspapers examined. Mid to late-week issues were selected because of their consistent availability for each town. However, the actual days during the week varied (mostly Wednesday, Thursday, and Friday) to reduce possible overrepresentation of an advertiser who may only run an ad regularly once a week. The newspapers were available on microfilm in the Montana State University library and through the Montana Historical Society in Helena. The newspapers used in the study are listed in Table 1.

Many towns in frontier Montana had more than one newspaper. Each newspaper often represented different political and business viewpoints depending on the owner. As a result, specific criteria were developed to determine which paper best represented the majority of each town's population and would be the most suitable for this study. The first factor examined was the longevity of the paper itself and whether it stayed in business throughout the study. This eliminated a majority of the papers. Also eliminated were any

Table 1. Newspapers used for place-name mentions.

Town	Year	Newspaper	Weekly/Daily
Miles City	1880	<u>The Yellowstone Journal</u>	D
Billings	1887	<u>The Daily Gazette</u>	D
	1898	<u>The Billings Gazette</u>	2xW
	1909	<u>Billings Daily Gazette</u>	D
Butte	1877	<u>Butte Miner</u>	D
	1887	"	D
	1898	"	D
	1909	"	D
Fort Benton	1877	<u>The Benton Record</u>	W
Great Falls	1887	<u>Great Falls Tribune</u>	W, D
	1898	"	D
	1909	<u>Great Falls Daily Tribune</u>	D
Helena	1877	<u>Helena Independent Record</u>	D
	1887	<u>Helena Independent</u>	D
	1898	"	D
	1909	<u>Helena Independent Record</u>	D
Missoula	1877	<u>The Weekly Missoulian</u>	W
	1887	"	W
	1898	<u>Daily Missoulian</u>	D
	1909	"	D, W

*A list of the specific issues of each paper studied appear in Appendix A.

industry papers such as special publications for miners or agriculturalists which would bias the economic activities represented. The third step was to select the daily papers instead of weekly or twice weekly editions. The daily's circulation was generally larger and more widespread than the weekly. If there remained more than one paper to choose from the overall longevity of the newspaper was determined, with the longest running paper selected.

Each newspaper was examined for all economic place-name mentions and these were recorded in one of three categories; transportation, goods and services, and general

economic news. For this study, an economic place-name mention was defined as any national or international city or town mentioned in the paper in conjunction with transportation, advertisements of goods and services, or general economic news. General economic news included national and international market prices for commodities such as wool, gold, and silver, along with articles about any fee or tax changes and news about legislation that influenced economic conditions in the state. Advertisements for goods and services encompassed any out-of-state advertising for clothing, groceries, wholesaling, or ads for services such as loans and private investigation companies. Transportation mentions consisted mostly of train and stagecoach schedules but also included articles about train derailments and road closures due to weather, Indian attacks, and road bandits. These were counted only if an out-of-state place name was mentioned. There were some cases in which decisions regarding the type of linkage needed to be made. For example, a newspaper article about the arrival of a wagon load of flour from Salt Lake City would have been recorded as a goods and services linkage and not transportation because the focus is on the goods and not the transport of passengers. However, train schedules listing the future delivery of freight would have been counted as transportation linkages because the focus of the advertisement was the time of arrival and the point of origin of the goods.

RESULTS

Incorporation Records

Introduction

The reconstruction of economic connections is important in order to determine key urban centers within Montana and the role played by the national urban system in fostering economic change in the state. Further, the type of economic linkage can suggest how specific elements of the national urban system were connected to particular segments of Montana's economy. A variety of techniques have been proposed to study linkage patterns. Michael Conzen (1977) examined nineteenth-century banking linkages and concluded that the national urban system developed from a primate financial system centered on New York City to a hierarchical system which still had New York City at the top of the economic pyramid but also included the development of regional centers such as Chicago and St. Louis. The "Mercantile Model" proposed by Vance (1970) emphasizes the reconstruction of transportation linkages in understanding the development of cities.

Wyckoff (1987) applied these theories in his study of Colorado and used incorporation records as one measure of economic linkages between places. His findings support the theory of a dominant New York City in the early stages of Colorado's development followed by an emerging focus on regional and smaller distant centers. He also found that linkages were a function of business type which supported Meyer's (1980) earlier hypothesis that the economic base and growth of national centers influenced the nature of linkages to frontier regions. For example, Wyckoff found that strong insurance

ties were established with San Francisco, Hartford, and London, all important national and international insurance centers.

This study adopts Wyckoff's approach and applies it to Montana. Though the Colorado mining industry began about fifteen years earlier than Montana's, the early placer gold mining operations in both states were similar with many quickly depleted discoveries and a number of boom and bust mining towns. Denver eventually grew to become the center of Colorado's economic activity while in Montana no single center dominated the entire state for any length of time. Several important urban places developed in Montana and served as economic foci for various sub-regions. The type of economic activity also varied and different areas of the state often created specialized linkages to a variety of eastern and midwestern cities.

Two approaches were used to analyze the incorporation data. The first focused on linkage patterns to Montana from the national urban system. These patterns reflected a changing national urban system that de-emphasized New York City with more regional influence. The expansion of the national transportation system (railroads) also altered the connections to Montana by creating links to national urban centers that were previously isolated. The second approach examined Montana's urban centers. Transportation, economic activities, politics, and population growth affected connections to out-of-state centers. Using these two approaches facilitates a clearer breakdown of the conditions creating linkages and leads to a better understanding of the complex nature of linkage development in frontier settings.

Links to the National Urban System

Eastern capital controlled the economic development of the west including Montana (Smurr, Toole, 1957). The importance of New York City as a focus of eastern capital and

as the dominant financial center of pre-twentieth century America is clear (Wyckoff, 1988, Pred, 1980, Conzen, 1977). Other studies also conclude that the change to more regional control occurred as frontier areas developed and as the national system became more hierarchical. Indeed, the Montana case reflects this broader transformation. New York City dominated as the most important out-of-state center between 1869 and 1881 with just under 40% of all Montana linkages (Figure 4). In fact, the first out-of-state business to file incorporation papers in Montana was the New York-based Walseeka Mining Company in 1869. The low number of incorporation records for this first period may have skewed the percentage for comparison with other periods, however, the relative influence of New York City continued to decrease throughout the remaining three periods. It dropped to less than 5% by the 1904-14 period.

Mining remained an important linkage type to Montana from New York City throughout the study. That sector accounted for 93% of the links in the first period, 54% in the second, 38% in the third period, and 37% in the last period. A wide variety of other business types from New York City entered Montana after the first (1869-1881) period including a number of banking, finance, and livestock companies, and even a Helena branch office for the Burns and Sheridan International Detective Agency. However, the most important non-mining industry to enter Montana from New York was the insurance sector accounting for 38% of all New York City links in the 1893-1903 period.

Large National Centers. As the dominance of New York City declined, other distant eastern and midwestern cities developed prominent links to Montana. Jersey City, Philadelphia, Chicago, Milwaukee, along with London in the United Kingdom, forged important distant large center connections to the state. Jersey City established strong mining linkages (Figure 5) focusing on the Butte and Helena areas. Companies from

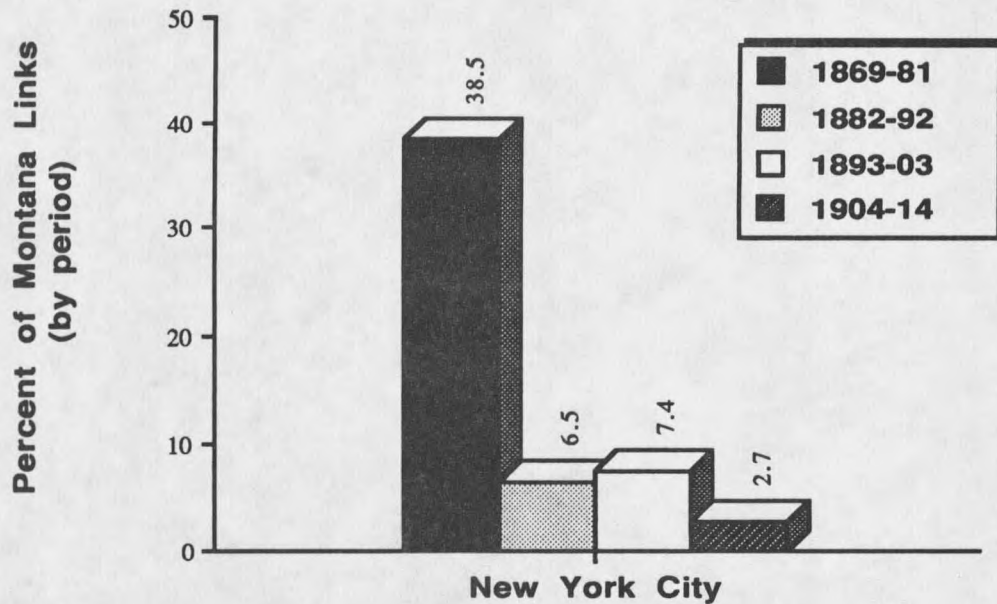


Figure 4. Montana's corporate linkages to New York City, 1869-1914.

Jersey City were also involved in developing Montana's urban infrastructure.

Corporations such as the Montana Power Transmission Company in Butte, the Capital City Power Company of Helena, and the Boston and Great Falls Electric Light and Power Company of Great Falls all had links to Jersey City. These linkages were formed mostly after 1893 when Montana's urban places were establishing and upgrading their basic services.

Many other large urban centers that were important in the growth and control of the eastern United States (Pred, 1980, Conzen, 1977) played relatively minor roles in Montana's corporate development. Important banking centers such as Baltimore and Philadelphia (which were reserve cities in the national banking system) played small parts in the frontier era of Montana (Figure 5). Even Boston, which by the early 1870's was

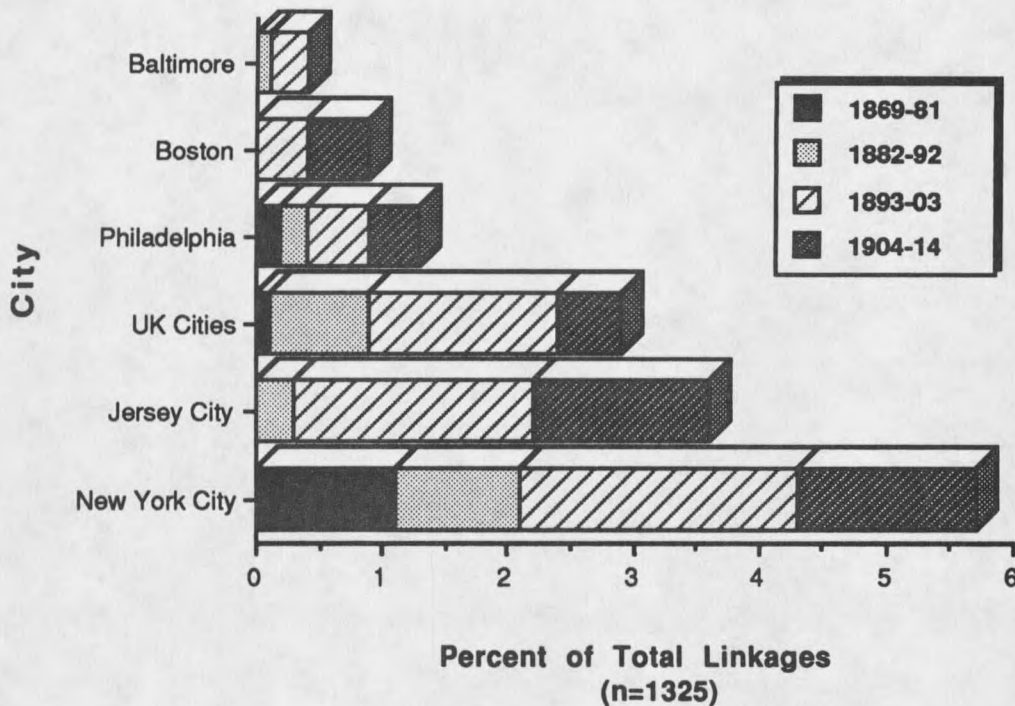


Figure 5. Montana corporate linkages to selected large eastern cities and the United Kingdom, 1869-1914.

second only to New York City in banking importance (Conzen, 1977), contributed very little to Montana's corporate development. The few linkages that did exist between Montana and Boston and Baltimore were mainly in the mining industry with few banking and financial ties. Philadelphia generated several insurance linkages in the 1890's but most of its links were also in the mining industry.

The lack of involvement by some large eastern centers suggests two interconnected processes. First, the early corporate dominance of New York City overshadowed Boston and Philadelphia. New York proved most able to control the financial resources needed to invest in a remote and isolated Montana. As accessibility improved and New York City's

dominance waned, a shift to regional centers closer to the state occurred, resulting in fewer links with many large eastern cities. Secondly, by the time Montana's internal development was such that its cities required more complex corporate linkages, large regional centers in the national urban system had developed to the point where they could handle many of Montana's needs.

The importance of the development of large regional centers and their effect on the growth of the urban frontier have been studied before in the trans-Mississippi West (Wyckoff, 1987). During the pre-1880 era in Denver, it was found that Chicago and St. Louis became equally important secondary cities to the dominance of New York City. These cities acted as gateways to the frontier of the developing West and were important transportation nodes for the region.

The role of large midwestern cities was also found to be significant for Montana but the pattern differed from the Denver case in the relative importance of the various midwestern cities. Chicago was an important large midwestern center for Montana's growth even though its influence started slowly with less than twenty-five percent of its total links (67 mentions, 5.2% of all Montana links) established between 1869 and 1892 (Figure 6). Chicago's first corporate connections were associated with mining and were typical of most early linkages to Montana. The boom period began in 1893 with large investments in Montana mining and significant growth in the agricultural/livestock industries with an emphasis in meat packing. Milwaukee (25 mentions, 2.0%) also established important mining linkages between 1890 and 1905. After 1905, half (6 mentions) of Milwaukee's connections turned to real estate, focusing on Lewistown and Great Falls in central Montana and suggests a focus of migration from Milwaukee to these towns. The Pabst Brewing Company in Butte and the Brand Stone Company in Helena represent other linkage types that located farther west. Throughout the study period, St. Louis' and

Kansas City's total corporate linkages were low, 27 and 6 respectively, reflecting the dominance of Chicago and its direct accessibility by rail to Montana compared to that of St. Louis and Kansas City. Most of these corporate links were established between 1884 and 1903 and focused on central and western Montana with 51.5% in the mining sector and the remaining 48.5% in various other business types including real estate, construction, and specialized agriculture.

Involvement in Montana's frontier urban development was not restricted to cities within the United States. Investments from the United Kingdom in mining and cattle ranching increased greatly after the completion of the Union Pacific Railroad in 1869. Also, new telegraph lines between London and New York could now speed up potential investments (Jackson, 1968). For example, mining companies coming into Montana from the United Kingdom (mainly from London but also including Norwich, Edinburgh, Liverpool, Glasgow, and Manchester) were important between 1881 and 1907 (Figure 5). After 1893 a shift in business types coming from the United Kingdom is apparent. Between 1893 and 1896, seventy-five percent of the businesses from the United Kingdom were insurance companies. This coincided with a large influx of insurance businesses concentrated on Helena with well over 95% of the state's insurance business. Some banking and financial businesses from the United Kingdom were established in the last years of the study, but they were relatively few. A scattering of other foreign cities (Paris, Hamburg, Calgary, Toronto, and Texetlaxco in Mexico) were involved in Montana's corporate development but these links are few and show no distinct pattern or influence.

Large Regional Centers. Other large regional centers such as the Twin Cities, Spokane, and Chicago became more involved in Montana's development throughout the

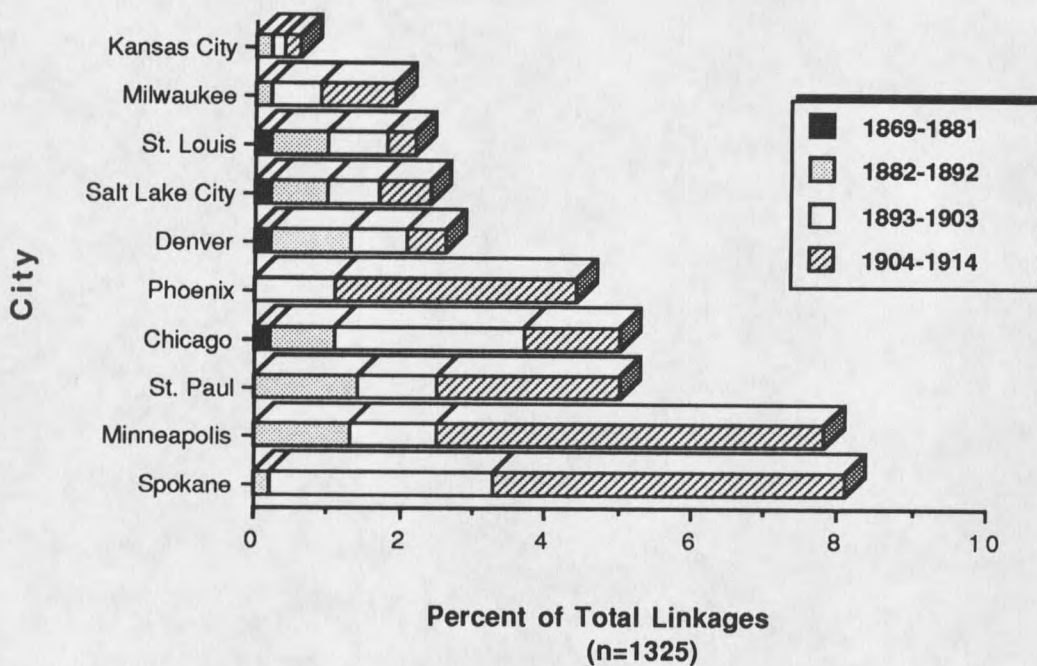


Figure 6. Montana corporate linkages to selected Midwest and regional cities, 1869-1914.

study period while Denver and Salt Lake City played more minor roles in the corporate development of the state (Figure 6).

The Twin Cities of Minneapolis and St. Paul are geographically close to one another, but economically and historically, there were some important differences. The state capitol of St. Paul was the older half of the Twin Cities with an 1860 population of 10,401 while Minneapolis had only 2,564 inhabitants. Both cities maintained commercial and manufacturing economies. St. Paul was particularly known as a commercial center for the Mississippi River steamboat trade in dry goods, groceries, and hardwares. It was also the earliest banking center in the region. Minneapolis owed its early economic development to the great water power site at St. Anthony Falls which supported a growing

manufacturing focus based on flour and lumber milling. An important grain processing point, Minneapolis also rose to become a powerful financial center, eclipsing St. Paul in the late nineteenth century (Borchert, 1987). By 1880, Minneapolis had surpassed St. Paul in population. Although both centers continued to grow, Minneapolis widened its lead over St. Paul in the early twentieth century. By 1914, St. Paul contained 220,000 people while Minneapolis supported 320,000 people.

Minneapolis and St. Paul were two of the most important centers for Montana's development even though their influence did not begin until the early 1880's as the railroads entered Montana from the east. The diversity of linkage types from the Twin Cities is obvious when compared to other regional centers (Figure 7). Over 13% (169 mentions) of Montana's total linkages for the entire study period were to the Twin Cities, more than the combined total for Chicago and New York City. Minneapolis was the most influential of the Twin Cities with 103 corporate connections. During the 1882-1892 period, Minneapolis' connections were mainly in mining, banking/finance, and agriculture/livestock (Figure 8). These were the types of basic industries established in Montana which had not yet generated a great demand for more specialized businesses. After 1893, a more diversified economy was developing in Montana as reflected by the greater number of specialized connections from Minneapolis. For example, the W.S. Nott Company (leather and rubber goods), the Northwest Casket Company, the North Star Shoe Company, and the M.A. Gedney Pickling Company helped Montanan's with some of their specialized needs.

The 1904-1914 period saw continued diversification of Montana's economy while the majority (68%) of Twin Cities links came from Minneapolis. The eastern part of the state was developing as homesteaders migrated from the Upper Midwest with the help of railroad companies that promoted dry land farming techniques and offered cheap rates to

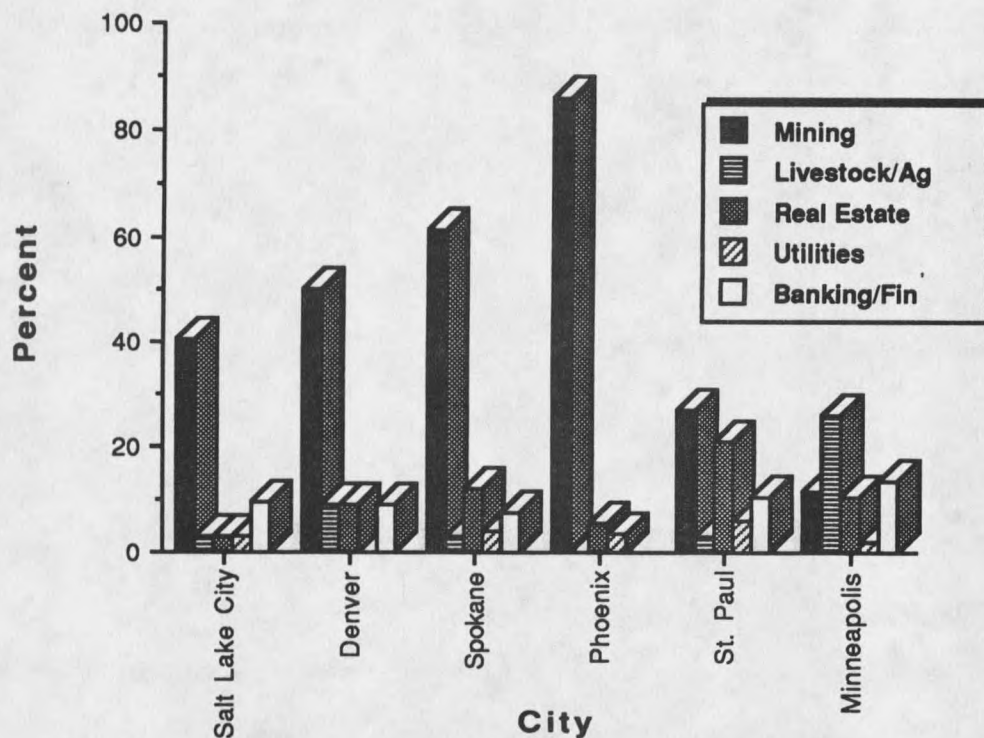


Figure 7. Selected corporate linkage types for regional centers.

anyone who moved to Montana by train (Federal Writers Project, 1939). The types of connections from Minneapolis to Montana focused on northern and eastern Montana's development during the 1904-14 period and were of varied linkage types ranging from mining, lumbering, and agriculture to newspaper supplies. Agricultural activities including grain dealers and grain elevators were common eastern Montana businesses along with many new real estate, banks, and other financial companies. The lumber industry also boomed during this period as lumber companies in Minneapolis supplied materials to build homes for new arrivals (Blegen, 1963).

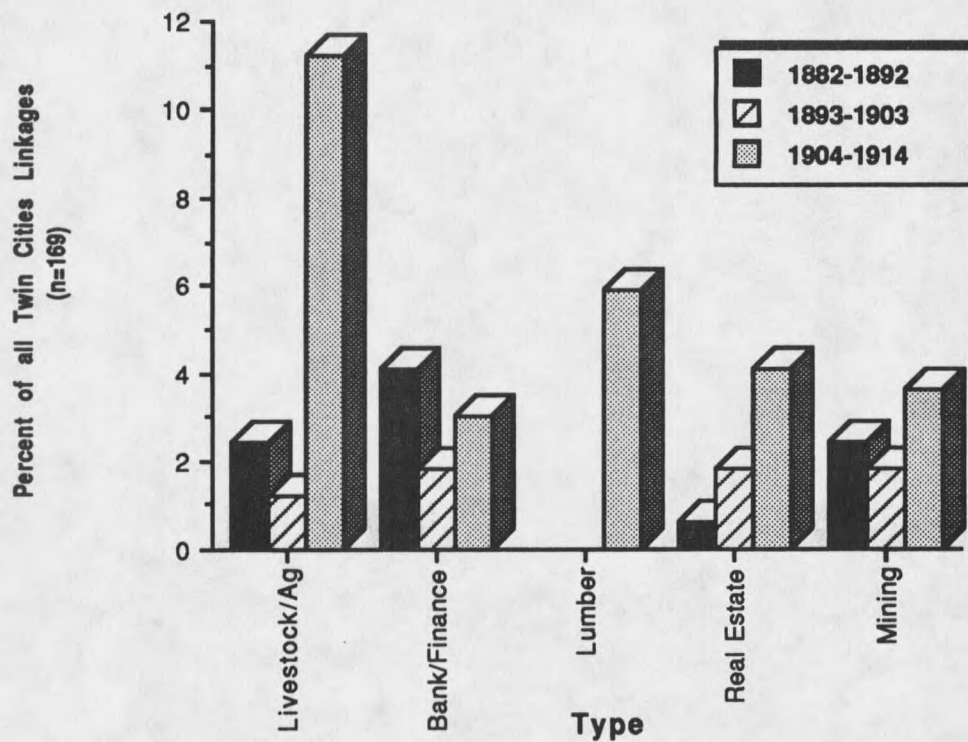


Figure 8. Montana linkages to Minneapolis, selected types, 1882-1914. Percentage of all Twin Cities linkages after 1882.

It would be incorrect to say Minneapolis and St. Paul had an equal influence on Montana's development. Like Minneapolis, St. Paul developed diverse Montana connections but was more influential in Montana's mining, real estate, and banking/finance development. Mining made up over one-fourth of St. Paul's linkages to Montana (10% of all Twin Cities linkages). St. Paul's mining links were concentrated in the 1882-1892 period as Montana's ores began to travel east along newly established rail lines to Minnesota and beyond. Over 40% of all linkages during this period were in the mining industry with future mining investments continuing from St. Paul after 1892 at a slightly slower rate (Figure 9). St. Paul's real estate industry had connections to Helena and Great Falls in the late nineteenth century but shifted to eastern Montana (mainly Billings) after

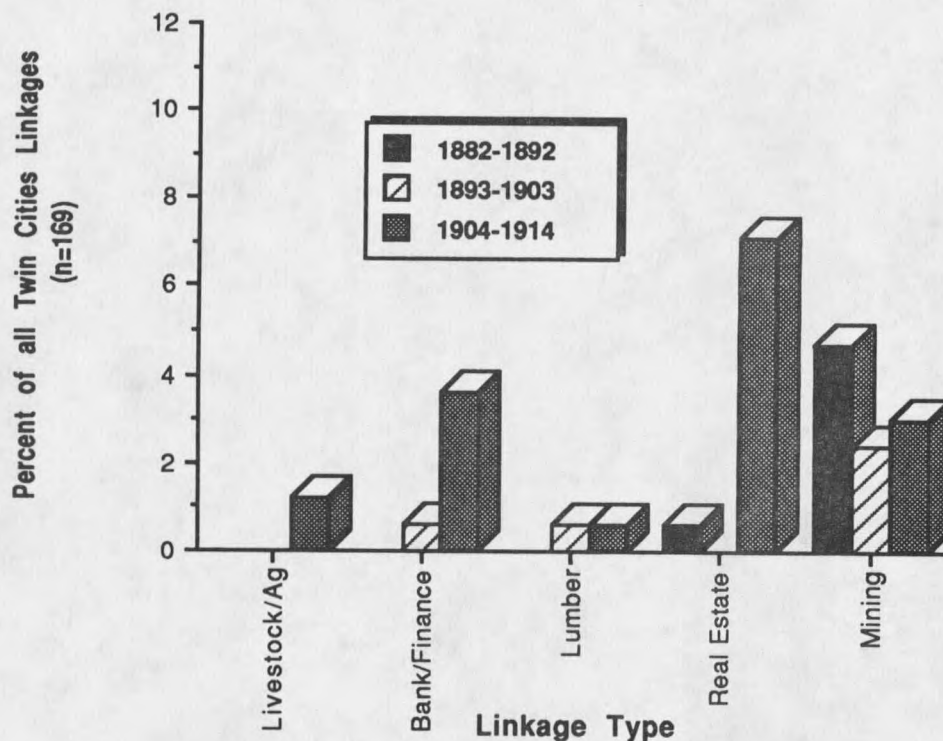


Figure 9. Montana linkages to St. Paul, selected types, 1882-1914. Percentage of all Twin Cities linkages after 1882.

1904. By then, the banking boom also focused on eastern Montana and coincided with the large influx of settlers to the area. Between 1904 and 1914, real estate and banking/finance connections grew to become the dominant linkage type with 36% and 18.2% of all St. Paul linkages, respectively.

The Twin Cities were important in eastern and central Montana's agricultural development but they also had banking and financial connections to Great Falls and Helena, mining connections to Helena and Butte, and real estate links to Great Falls and Billings. Out of 24 agriculture/livestock connections from the Twin Cities to Montana, 22 (94%) were from Minneapolis, reflecting its dominant role in agriculture. These agricultural linkages focused first on eastern Montana in the 1880's and then shifted to northern and central Montana by the early twentieth century. The lumber industry

connection was also important between Minneapolis and Montana with an emphasis, particularly after 1905, on eastern Montana towns like Billings, Glasgow, Miles City, and Glendive. Overall, the Twin Cities had one of the strongest and most diverse linkage patterns to Montana and greatly influenced Montana's urban development.

Other regional centers were also important in Montana's development. The influence of Denver (34 mentions, 2.6%) and Salt Lake City (32 mentions, 2.4%) especially in mining (Figure 7), were most important before 1892. Denver's influence was first felt in the mining industry with fifty percent (17) of all linkages going to mining. These mining links were mainly to southwestern Montana with a focus on Dillon. Other linkages from Denver developed to other regions of the state. The Denver, Yellowstone and Pacific Railway Company's operations, for example, reflected an early interest in developing Montana's transportation and communication infrastructure. Denver-based real estate companies were established in Helena and Billings along with livestock businesses in Havre and Helena. Denver's influence was not limited to mining but since distances to Montana were great, and Denver's influence clearly remained focused in Colorado, a strong link did not develop and the number of incorporations remained low.

Salt Lake City was settled in 1847 and extended its influence as a trading center into the surrounding regions via stagecoach and wagon roads during the 1860's (Winther, 1964). Utah trading firms served the mining towns of southwestern Montana by the Salt Lake City-Virginia City wagon road (Walker, 1966). Stronger transportation links were developed in the early 1880's with the Utah & Northern Railroad connecting Butte with the Union Pacific Railroad in Corinne, Utah (Jackson, 1984). This corridor was a pipeline for goods to the mining regions of southwestern Montana. The John W. Lowell Wagon Company, Northwestern Forwarding Company, and the American Liquor Company are examples of wholesalers and other merchandisers that linked Salt Lake City to Montana.

Salt Lake City had approximately the same number of total linkages (32) as Denver and also had a strong mining influence (43.8%), but, because of the transportation corridor, the Salt Lake City connection focused clearly on Butte.

Spokane, Washington was the entrepot for Idaho's mining region (Pollard, 1951) and as a result, also greatly influenced western Montana's development. Spokane represented the first major connection to an entrepot west of the state and linkages were established as the completion of the Great Northern and Northern Pacific lines to the Puget Sound helped open the interior of the Pacific Northwest (Fargo, 1950). Spokane's population expanded from 350 in 1880 to almost 20,000 by 1890 as the mining industry in northern Idaho rapidly expanded in the 1880's (Dodds, 1986). Spokane continued to grow tremendously until the population leveled off at about 100,000 in 1910 (United States Census Reports, 1880-1910).

Because of Spokane's early status as a mining gateway, it is not surprising that over sixty-two percent of its linkages to Montana are in the mining industry (Figure 7). Some variety in business types occurred during the 1904-1914 period as real estate, banking, and livestock businesses begin to incorporate in Montana. Even with these non-mining businesses, the majority of Spokane's linkages to Montana remain in the western part of the state. Of Montana's urban centers, Butte received 21.7%, Missoula 10.4%, and Helena 3.8% of total links from Spokane. Many of the non-urban links went to Saltese and other small western Montana mining towns.

After the Northern Pacific and Great Northern railroads were completed from the Midwest to the Pacific Ocean in 1883 and 1893, respectively, west coast cities could interact with Montana more easily (Beal, 1962). Tacoma, Washington established significant mining ties beginning in 1893. Over eighty percent of Tacoma's total linkages (16) involved mining and since Tacoma was the western terminus of the Northern Pacific

Railroad, it made sense that the majority of these links had destinations to the southwestern mining regions such as Norris, Deer Lodge, and Philipsburg. Seattle was the western terminus of the Great Northern line. The city had the same number of linkages to Montana as did Tacoma but they were more varied. Mining accounted for only one-third while the remaining two-thirds were composed of banking/finance, real estate, road building, and agricultural linkages. Seattle was also the major sea port in the Pacific Northwest and a wide variety of incoming goods were transported east on the Great Northern encouraging a wider variety of links. Portland, Oregon's links (11) were also quite varied with nine different business types. These links focused on Missoula and Helena. The overall role of the Pacific Northwest on Montana's corporate development to 1915 was quite small. The railroads helped to generate the few linkages that did exist but these generally affected only western Montana as the eastern part of the state had already established strong ties to Midwest centers.

The San Francisco Bay area also had linkages to western Montana. These links focused on Helena (50%), Butte (18.8%), and Missoula (6.3%). Over thirty-seven percent of the linkages were in the insurance industry and occurred during the "insurance rush" of the 1890's. All of San Francisco's insurance connections were to Helena, helping to establish it as Montana's insurance center. Other important Bay area industries were mining (18.8%) and finance (18.8%). Even though San Francisco had several early ties to Montana via the Union Pacific, the west coast did not play a dominant role in the state's corporate development. By the last period, the concentration of connections had moved to the interior of the United States, leaving both coasts playing more minor roles in Montana's growth.

The corporate connections from Phoenix to Montana represent an important post-1893 link to Butte's copper mining industry. Phoenix was not a mining town but was

originally established as an agricultural center in the late 1860's supplying the military and mining communities of the territory with vegetables, grains, and various citrus crops (Meinig, 1971, Mawn, 1977). It remained a small farming town until its central location to Arizona's population centers and easy access to the Southern Pacific Railroad influenced the territory to move the capital there in 1889 (Ehrlich, 1981). As the capital city, Phoenix developed into an important business center with many Arizona industries locating their main offices there.

The growth of Arizona's mining industry is similar to Montana's, growing from gold mining in the 1870's to silver and finally copper by the late 1880's (Works Projects Administration, 1940). In 1888, William A. Clark, one of Butte's copper kings, bought the United Verde Company, a copper mine, in Jerome, Arizona (Faulk, 1970). This demonstrates one of the many important links between the two dominant copper producing states (Montana and Arizona controlled 62% of the copper production in the country in 1900) (Freeman, 1900). Not surprisingly, the connections between Phoenix and Montana are nearly all mining with little involvement in other business types (Figure 9). Out of a total of fifty-seven linkages (4.5% of all Montana links), nearly 90% are in the mining sector focusing on Butte (49.1%) and Helena (14%). These connections are all established after 1901 coinciding with the growth of Arizona copper mining and the establishment of Phoenix as the territorial capital in the late nineteenth century.

Small National and Regional Centers. Patterns of linkages from Montana to large national and regional centers are obviously important information to analyze when examining a region's urban development. As an urban place develops further, however, important linkages are often formed with small national and regional centers which show patterns of greater complexity (Wyckoff, 1987). This is also the case for Montana with

diffusion of control away from New York City and growth in importance of many smaller eastern and midwestern centers (Figure 10). These smaller center links are established and strengthened as Montana's railroad connections became integrated into the national transportation system via the Northern Pacific, Great Northern, and Utah and Northern lines during the 1880's (Figure 11).

Some overall patterns of linkages to small centers in the national urban system emerge. The linearity of links along rail lines became obvious in the later periods after the railroads were established. These connections along railroad lines parallel Vance's (1970) discussion of how linear linkages develop in the flow of commodities. One Montana example would be the flow of ore from Montana's mines along rail lines to the Twin Cities, Chicago, or Duluth (Albro, 1976). A similar pattern developed with the flow of supplies and other goods which entered the state from the Midwest (James, 1975). This linearity is also observed for corporate linkages coming into Montana reflecting the better accessibility to the state for those centers on the rail line. This pattern is very clear especially through the small centers of the Dakotas and in the Midwest (Figure 11). In the 1893-03 period, the small centers that had corporate offices in Montana took on a more widespread distribution throughout the country, although the South was still void of connections. More regional links also developed in the Dakotas, Idaho, Oregon, and Washington while the number of midwestern and eastern links grew throughout the northern half of the country.

In New England, several small centers were very instrumental in the development of corporate linkages focused on western Montana. Portland and Augusta, Maine (32 mentions) developed linkages to Montana after 1882 with over 70% of the total links in the state's mining industry. Wilmington, Delaware's (21 mentions) corporate links to Montana began in 1896 and represented a mid-Atlantic connection that was concentrated in the 1904-

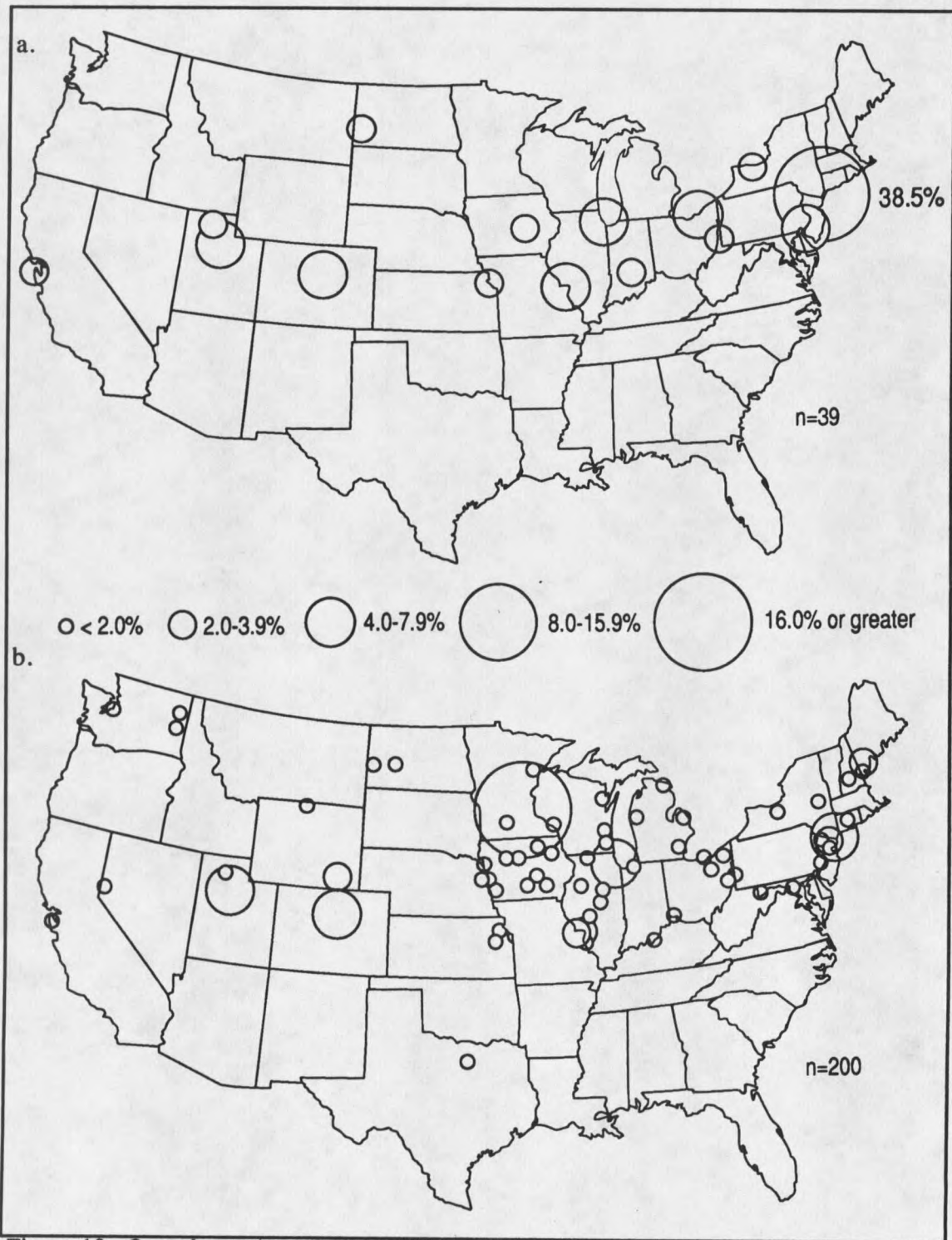


Figure 10. Out-of-state incorporation linkages, 1869-1881 (a) and 1882-1892 (b).

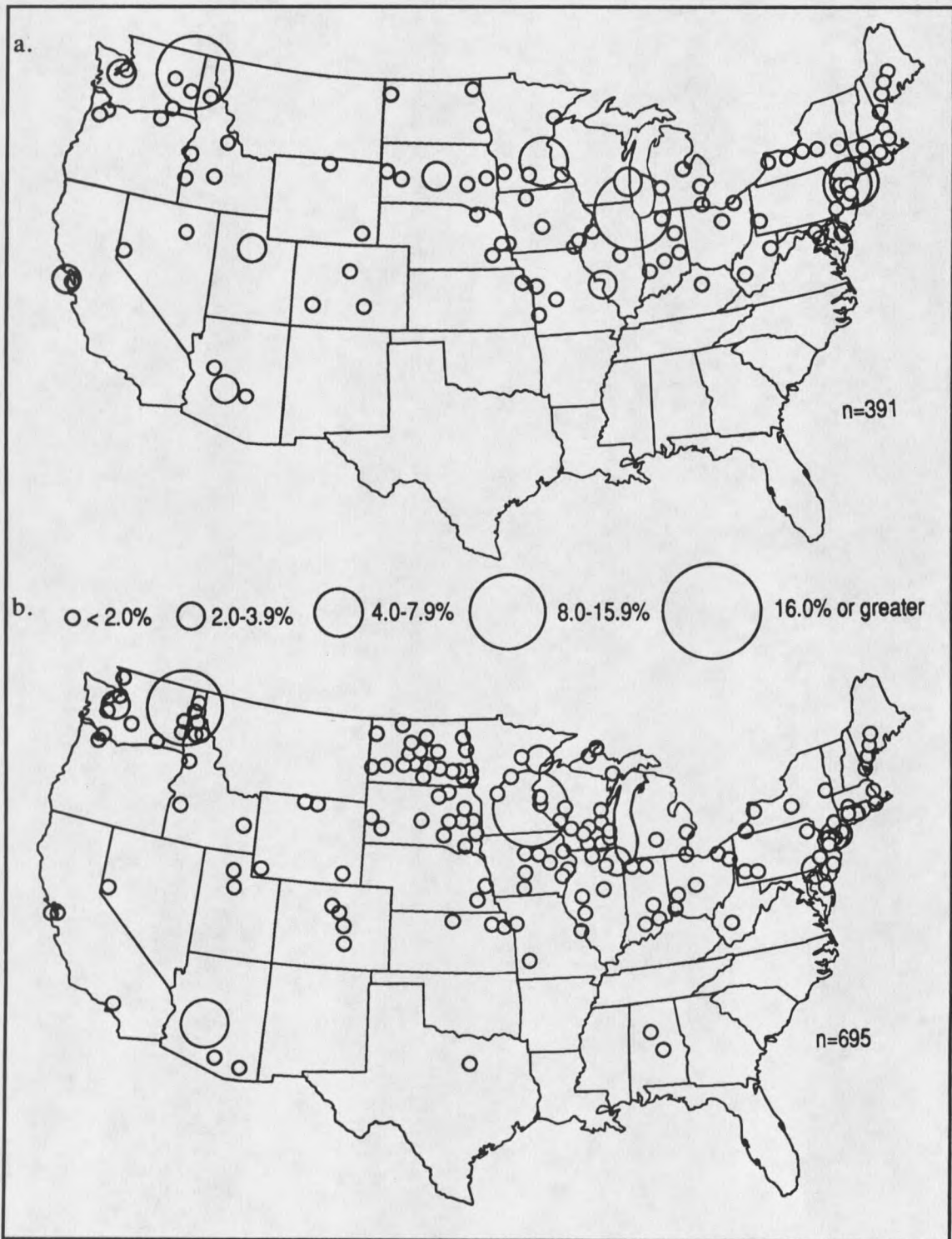


Figure 11. Out-of-state incorporation linkages, 1893-1903 (a) and 1904-1914 (b).

1914 period. A diverse linkage pattern was developed with 5 links to mining, 3 links each to the finance and utility industries, and various other business types including chemicals, typewriters, real estate, and a railroad company. Over 95% of Wilmington's connections were to the western part of the state, continuing the pattern by other small eastern centers which also reflected the desire of entrepreneurs from this region to invest in primary industries.

Small center links to Illinois, Indiana, Ohio, and Pennsylvania developed after 1882 (Figures 10b, 11) and focused on the agricultural and mining industries. Patterns in both Illinois and Indiana reflected the importance of the farming and livestock industries in their states by the strong connections to these same industries in Montana. Almost 70% of Illinois' and 40% of Indiana's connections were in agriculture/livestock and were linked to Montana's northern and eastern agricultural and livestock regions. The mining and manufacturing industries of Ohio and Pennsylvania were reflected in their linkage patterns which focused on western Montana's mining industry. Mining links constituted almost 60% of Ohio's links and about 45% of Pennsylvania's links. This regional connection was strengthened by the fact that all small center links from these two states, regardless of type, were to western Montana.

By the 1904-14 period, the number of small center ties to the eastern United States remained static while links to the midwestern and north central states increased, most notably to the Dakotas, Iowa, Wisconsin, and Minnesota. These linkages were often focused along rail lines (reflecting linear patterns), especially in Iowa and the Dakotas. The type of business linkage to Montana varied among these states. For example, all of South Dakota's linkages occurred after 1897 with 68% in the mining sector. The majority of these linkages were from Pierre to Butte and Helena. Even though Pierre is listed as the main out-of-state office, many of these companies listed branch offices in the eastern

United States which may imply indirect control by eastern financiers. North Dakota's small center linkages also emerged in the late 1800's, but only 6% were based in mining while real estate (24%) and banking/finance (22%) lead a wide variety of other corporate types. Contrary to South Dakota, North Dakota's links were mainly to the northern and eastern small towns of Montana where railroad and agricultural towns were developing. The process of land development and town building, which was taking place along the rail lines in North Dakota, continued into Montana and facilitated links between the two areas. Such links with South Dakota were much less pronounced and suggested weaker economic ties to Montana.

Iowa, Minnesota, and Wisconsin develop a wide range of small center linkages to Montana. A majority of these links involved agriculture/ livestock and real estate industries in the eastern and central areas of the state. Iowa's links (30 mentions) are varied with most corporate activity in livestock/agriculture (23.3%), mining (20%), and banking/finance (16.7%). The completion of the railroads from Minnesota to Puget Sound was an important factor in the development of links from Wisconsin (36 mentions) and Minnesota (13 mentions) as the majority were established after 1890 and focused on Montana railroad towns. Wisconsin had 50% of its links in real estate mainly in the eastern and central parts of Montana while Minnesota's small center links were in agriculture/livestock with eight of the links to small eastern centers focusing on Culbertson and Plentywood. In particular, Duluth became an important gateway to the western United States, including Montana. The city became an eastern terminus for the Great Northern and Northern Pacific railroads and a major shipping port for ores and grains through the Great Lakes (Blegen, 1963). In 1889, steamers operating through Duluth carried 42% of all eastbound flour and westbound freight (Hidy, 1988). The city's population grew from only 3,600 in 1880 to over 33,000 ten years later. The town's population continued to

grow with the completion of the railroads to the Pacific and reached nearly 90,000 by the end of the study period. All of Duluth's ties to Montana were created after the railroads were established and all were located along rail lines. Overall, Duluth's 17 Montana linkages included seven mining companies with six of the seven based in Butte.

Another significant change that occurred by the 1904-1914 period was the increased number of small center links to states west of Montana, mainly in Washington and Idaho. These were focused along the Northern Pacific and Great Northern rail lines. The Pacific Northwest was developing and becoming more integrated with eastern centers. Linkages also developed to small centers in Wyoming and Colorado. Idaho's panhandle mining towns such as Mullan and Wallace extended an especially strong influence into western Montana. Seventy percent of Idaho's small center linkages (47) were in the mining industry (57% of Idaho connections were to Missoula County alone) with no connections at all to the eastern regions of the state.

Montana's Urban System

Montana's urban areas grew in response to various economic stimuli. As each town developed, its economic base became more diversified. For example, Helena became an insurance and banking center after its initial mining boom slowed. Butte also became more diversified, but retained mining as its driving economic force. The national urban system was also dynamic: new towns grew, while others changed their national system interactions, linking with different cities. As the national urban system expanded and changed so did Montana's urban system of economic linkages. Total linkages for each Montana center studied reflects the dominance of Butte and Helena as measured by the number of incorporations. This high number of linkages demonstrates the importance of

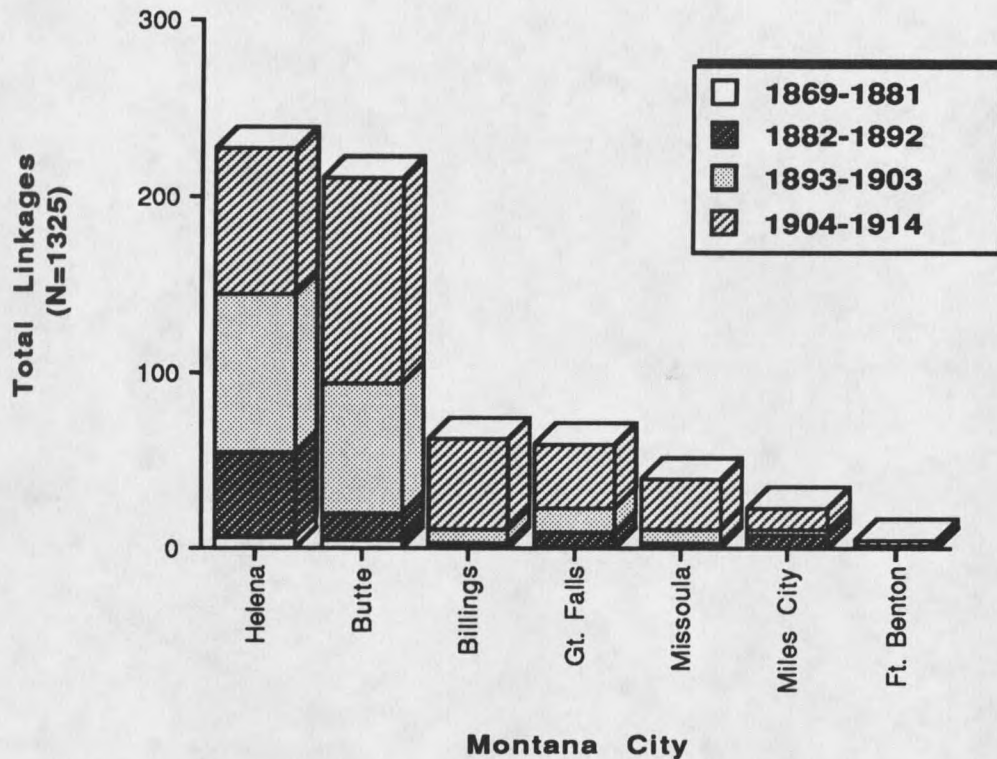


Figure 12. Montana corporate linkages by city, 1869-1914.

mining in Montana and also reflects the dominance of these two centers in the first two periods of the study (Figure 12).

Butte. Butte's development began with the discovery of gold in 1864. Its placer deposits were played out by 1870 with an estimated \$9,000,000 extracted in five years (Cooper, 1981). Silver proved too costly to ship east for refining so W. A. Clark built the first silver smelter in Butte in 1877. By 1878, 8 mills produced \$1,000,000 in silver. But in the 1883, two events insured Butte's success. A five-foot copper vein was discovered and the Northern Pacific Railroad arrived in town. With eastern capital pouring into Montana, the "Big Five" companies were created and led Butte's copper boom. The

Amalgamated was owned by Marcus Daly and the Clark was owned by W.A. Clark. Other leading participants in the mining development included the Montana Ore Purchasing Company (owned by Augustus Heinze), the Butte & Boston Company, and the Boston & Montana mines (Cooper, 1981). Copper continued to dominate Butte's economy well into the twentieth century (Malone, Roeder, 1976). Butte led the nation in copper production with over \$40 million produced by 1900 (50% of the total for the entire country) compared to second place Arizona with only \$22 million (Freeman, 1900). With this prosperity Butte's population grew to over 3,000 by 1880, 10,000 by 1890, 30,000 in 1900, and nearly 40,000 by 1910, (Figure 13) making it the state's largest urban center (United States Census Reports, 1880-1910). This phenomenal increase in population created a great need for a variety of businesses but it was always the mining industry (especially copper) that drove Butte's economy (Figures 14, 15).

An important factor in Butte's rise to regional and national importance as a mining center was the development of transportation to take the ores east for refining. Originally, most of the gold and silver was shipped to Fort Benton via wagon and then transferred down the Missouri River to St. Louis. After the Union Pacific was built across northern Utah in 1869, ores were transferred south to Corinne, Utah. This route offered a longer shipping season and a more dependable route than did the Missouri River (Walker, 1966). The Wells Fargo stage coaching company dominated shipping of ores from Montana mines to both Fort Benton and Salt Lake City in the 1860's with the railroads taking over in later years (Jackson, 1979). In 1881, the Utah & Northern Railroad arrived in Butte, linking it with the Union Pacific Railroad at Corinne and the arrival of the Northern Pacific in 1883 further tied Butte to the national urban system. Butte totals 211 links or 16.5% of all out-of-state incorporations into Montana for the entire study period. Butte was dependent on

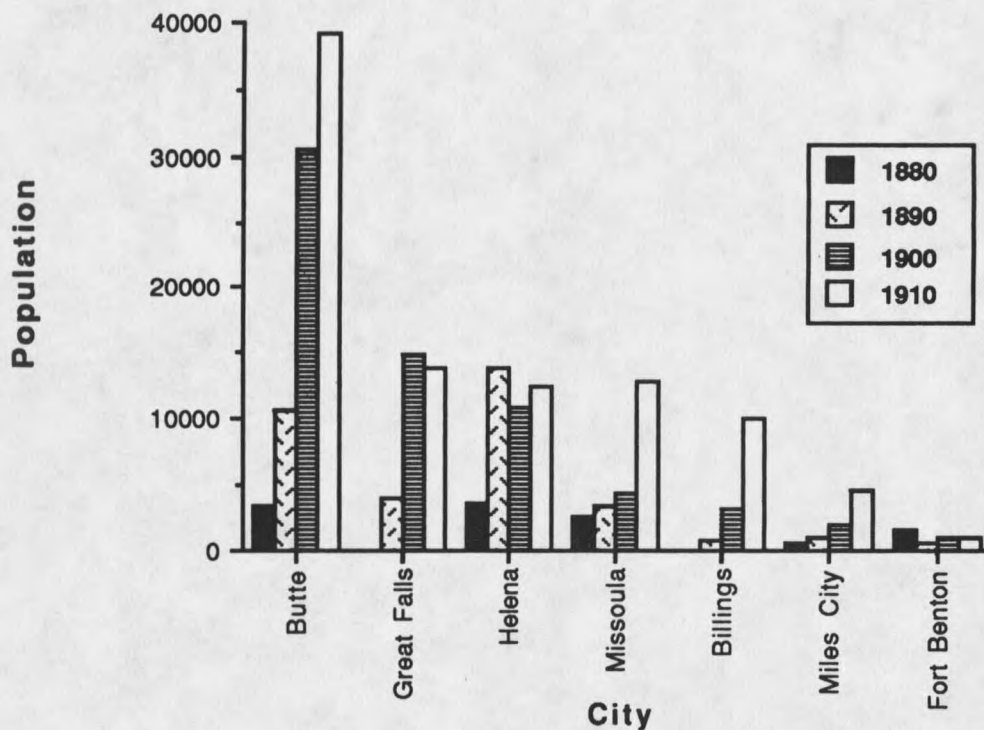


Figure 13. Population of selected Montana cities, 1880-1910. From United States Census Reports.

mining for its existence as over 51% of its links were mining-related. Nine of the first ten businesses to incorporate in Butte were mining companies with offices in Denver (2) and large eastern cities.

The capital required to begin large-scale mining came from eastern cities such as New York City and generally was less available within the region. This began to change by the late 1890's as Spokane, Phoenix, and Pierre dominated mining incorporations in Butte through the end of 1914. There was still some eastern influence, but instead of New York City (which had only 3 out of 71 mining links to Butte during the last period), smaller centers such as Augusta and Portland, Maine along with Wilmington, Delaware became more involved in Butte's mining industry.

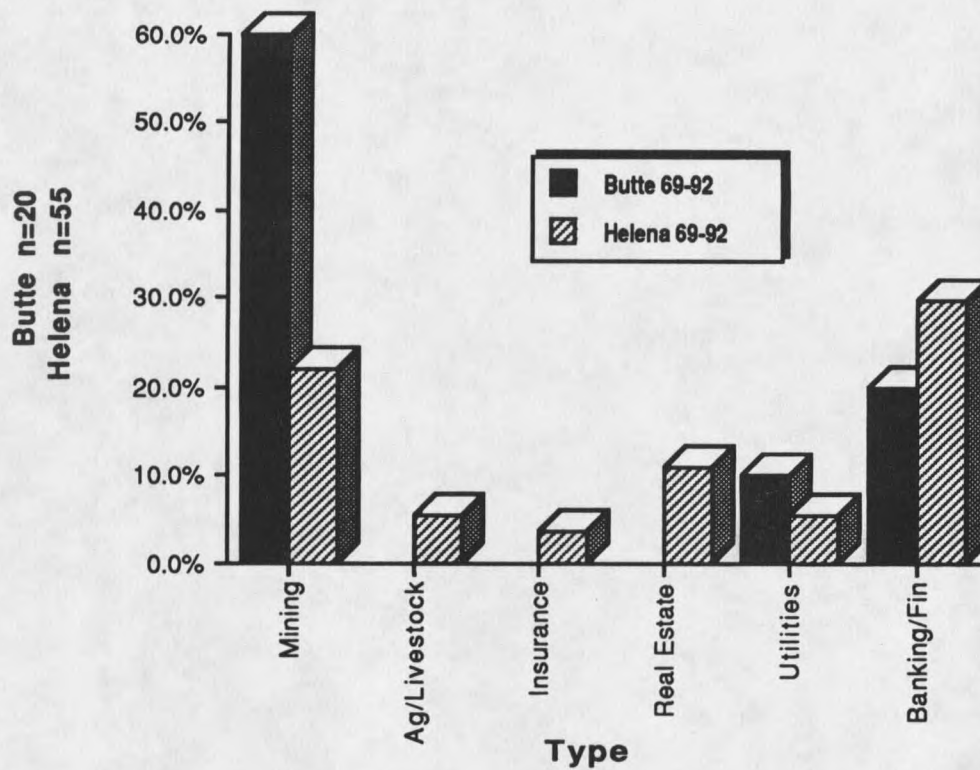


Figure 14. Butte and Helena linkage types, 1869-1892.

Other non-mining businesses were needed to keep up with Butte's rapidly expanding population. These businesses included clothing wholesalers from Salt Lake City, fruit wholesalers from Los Angeles, brewers from Milwaukee, and livestock slaughterhouses from Chicago. Large and small centers on the national and regional levels were involved in Butte's growing non-mining business sector. Butte's rapid growth and promising future seemed to make it a popular investment focus as national and international corporations became involved.

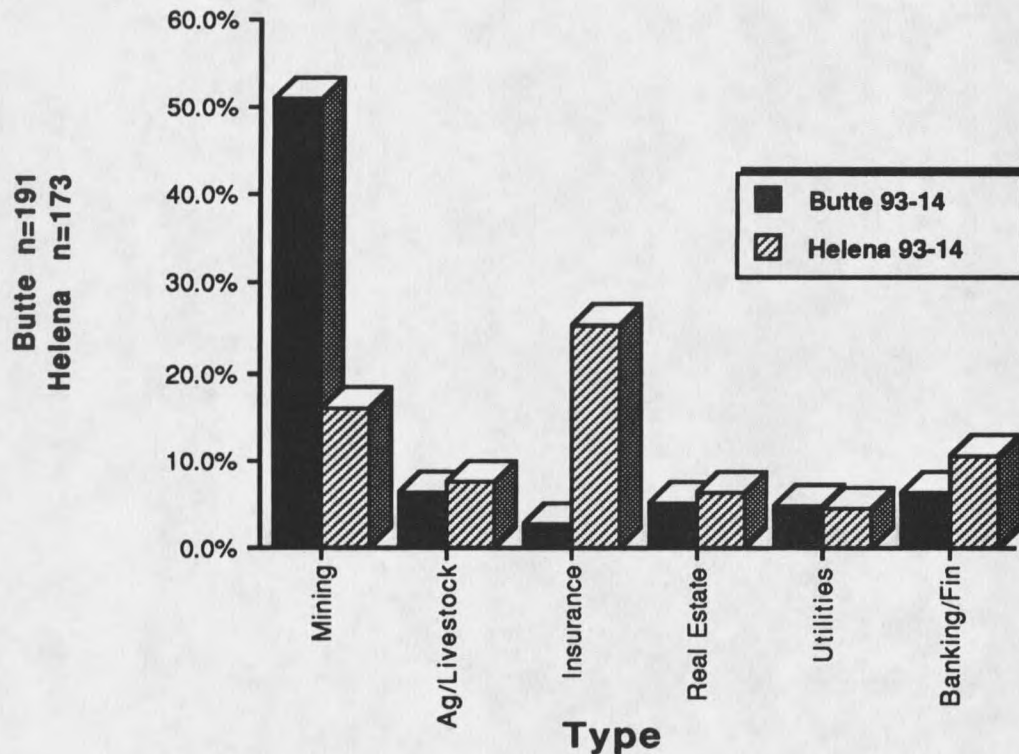


Figure 15. Butte and Helena linkage types, 1893-1914.

Helena. For the study period, Helena was the most important Montana center as measured by the rate of out-of-state incorporations (228 or 17.9%). Helena's beginnings were similar to those of Butte with a gold rush in 1864 that made Helena the largest town in the territory by 1870 with a population of 3,106 and over \$500,000 worth of gold shipped out via Fort Benton (Federal Writers Project, 1939). Even though it was soon eclipsed by Butte in population, Helena remained a key Montana urban center. Helena's degree of corporate activity for its population size is much greater than any other Montana city and is over twice that of Butte, the largest population center in the state. The residents of Helena had money for developing new businesses as the city had 50 millionaires by 1893 (Meloy, 1984). It was also Helena's good fortune that the territorial capital was moved there in

1875. Many banks, insurance firms, and other companies preferred to establish businesses in a safe and stable capital city, knowing that the potential for a bust was much lower than in a town solely dependent on mining. This helped create a more diverse set of linkages in Helena after the initial 1869-1881 period (Figures 14, 15).

Through 1890, 33.3% of all out-of-state corporations in Helena were either insurance, banking, or finance and only 25% were mining. For the entire study period mining comprised only 17.1% of Helena's links. A variety of business types predominated with several important exceptions. In 1893, the Montana legislature passed a law requiring any new insurance company entering into business in the state to file incorporation papers. However, insurance companies already doing business in Montana were not required to reincorporate (Laws of Montana, 1893). As a result of this act, the number of insurance companies filing incorporation papers increased dramatically between 1894 and 1897. During this period, Helena became the state's major insurance center. Out of a total of 54 insurance links, 46 (85.2%) were to Helena and insurance links comprised 20.2% of all links to Helena for the entire study. The majority of insurance links were to the United Kingdom, San Francisco, and large eastern cities, mostly New York City and Philadelphia.

A second focus of corporate activity in Helena was banking and finance (mortgage, trust, and investment companies). From 1868 to 1914, one-third of all banking and financial incorporations in the state were in Helena. The first large surge of banking and finance into the state occurred from 1889 until the onset of the 1893 recession. A second wave began in 1909 and lasted until 1912. This latter increase corresponded to the wave of new immigrants who settled in the northern and eastern sections of Montana. These linkages were focused on regional companies such as the Sterling Trust Company of Fargo, the Union Trust and Savings Bank of Spokane, and the Odd Fellows Building and

Loan Association of America of Dickinson, North Dakota. There were also national level centers such as the St. Louis Trust Company of St. Louis and the Standard Real Estate Loan Company of Dallas. The large primary national level centers played a relatively minor direct role in Helena's banking and finance industry. This occurs because as Helena becomes an important Montana banking center, the national urban system has shifted to a hierarchical system (Conzen, 1977) with more importance on regional center support for expansion into hinterlands.

Fort Benton and Great Falls. Fort Benton was one of the first settlements in the state with the fort established in 1846 and the town in 1865. The center was the major entry point for goods coming into the territory. Riverboat steamers began arriving from St. Louis in 1860 (Harber, 1930) and in 1867, 43 steamers brought in 10,000 passengers, 8,000 tons of mining equipment, and 7,000 tons of foodstuffs. In 1867, Fort Benton freighters had 2,500 men, 20,000 oxen/mules, and 600 wagons to ship the goods to various mining settlements around the territory (Winther, 1964). The Mullan Road, which started at Fort Benton and ended at Walla Walla, Washington, was a major corridor for shipping goods to the mining regions of western Montana. A second major wagon corridor out of Fort Benton was the Whoop-up Trail which went north into Alberta and was an important trade route for supplies and furs (Overholser, 1980). Riverboat traffic continued to bring in goods and ship out gold and silver until the railroads began building into Montana in 1881. By 1883, only 14 steamers made the trip up the Missouri to Fort Benton (Walker, 1966). In that same year the Canadian Pacific railway reached Calgary and the Whoop-up Trail and Fort Benton, lost their importance to Canadian commerce (Overholser, 1980). The event sealing Fort Benton's fate occurred only 40 miles from town, when the arrival of the Great Northern Railroad to Great Falls in 1887 signaled the

end of Fort Benton as the important shipping point for Montana and the region (Malone, Roeder, 1976). By 1890, with a population of 3,979, compared to Ft. Benton's 624 (United States Census Reports, 1890), Great Falls was clearly becoming the region's dominant center.

Connections to Great Falls accounted for 4.6% (59 mentions) of Montana's total linkages. A steady increase in the number of linkages throughout the last three time periods reflects Great Falls' increased integration into the national urban system. From 1882-1892, 15.3% of all Great Falls linkages were established, while during the 1904-1914 period, 61% of all the links to Great Falls were created.

Great Falls was an "instant city" that sprang into existence because of the Minnesota-based Great Northern railroad. Paris Gibson, a founder of Great Falls, was from St. Paul and some of his Minnesota friends (including James Hill, owner of the Great Northern) invested in real estate and other businesses in the new Montana town (Stuwe, 1983). As a result, many of its connections were established and maintained to the Twin Cities (39%) (Figure 16) with a wide variety of business types which were typical of the Twin Cities linkage pattern described earlier. For each period of the study, the Twin Cities accounted for approximately 40% of the linkages to Great Falls.

Real estate remained an important business throughout the study period, keeping pace with the growing population. Livestock and agricultural incorporations were not dominant but did begin to increase after 1909 as north central Montana developed its ranching and farming industries. There were also several oil and coal companies that were established near the turn of the century in the area. Great Falls' corporate diversity was much greater than some other Montana towns that were focused on only a single industrial activity (Figure 17).

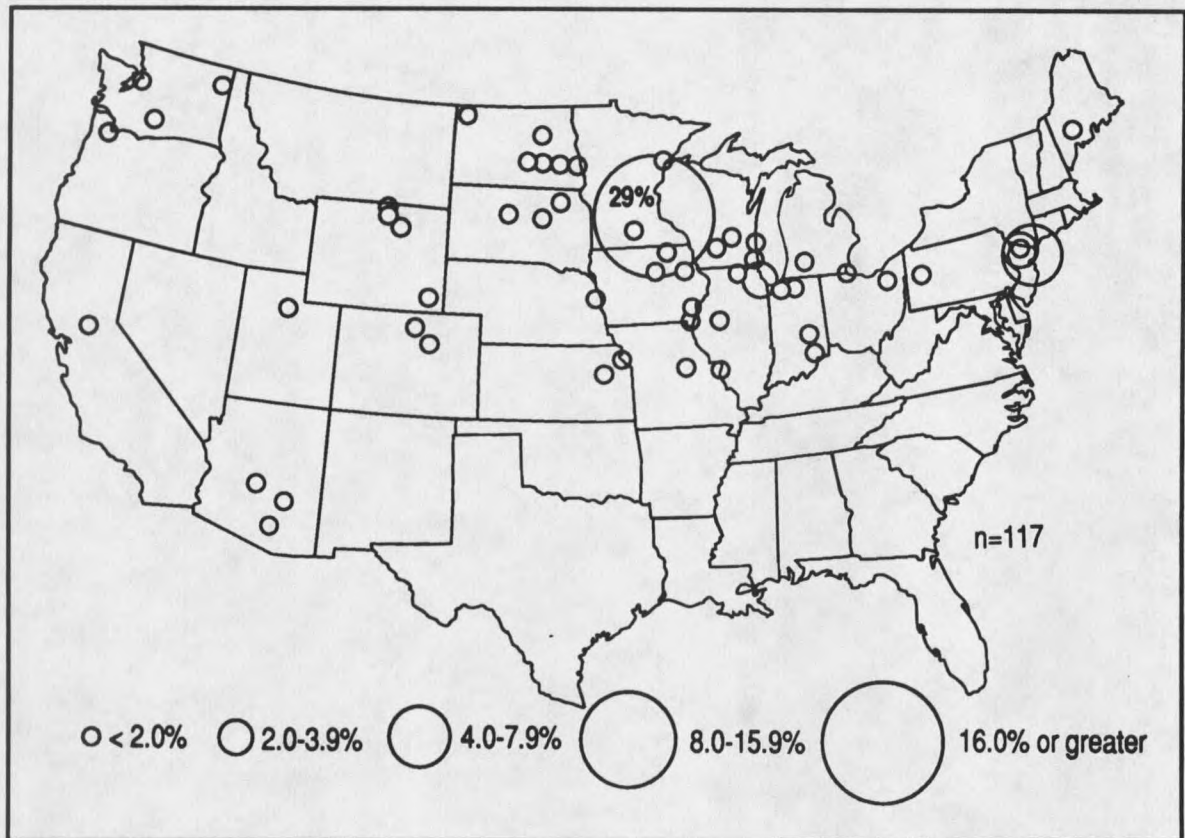


Figure 16. Great Falls and Billings linkages, 1893-1914.

Other secondary national and regional centers such as Toledo, Ohio, Williston, North Dakota, and Lawrence, Kansas also had important connections to Great Falls. These smaller center connections along with large primary linkages to the national urban system displays Great Falls' varied linkage pattern beyond its strong ties to the Twin Cities. After 1892, along with the railroad-based linkages to the Midwest, several new linkages to west coast centers began to appear, undoubtedly encouraged by the completion of the railroads to Puget Sound. These connections, however, remained relatively minor compared to the well established links to the Midwest (Figure 16).

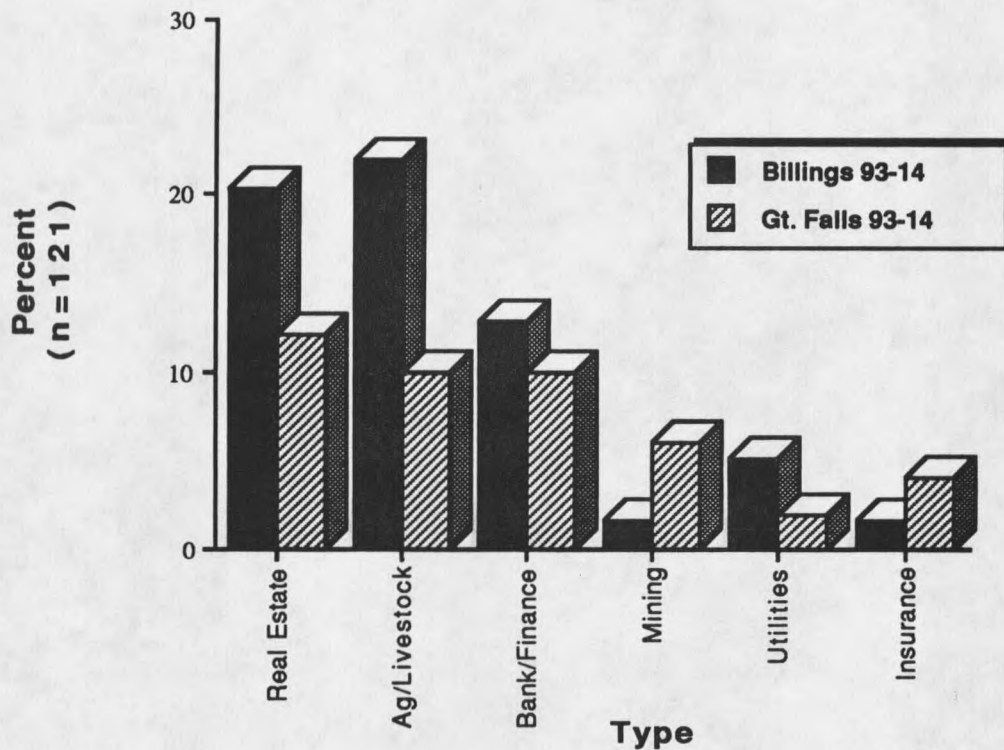


Figure 17. Billings and Great Falls linkage types, 1893-1914.

Miles City and Billings. There were restrictions holding back the expansion of any industry in eastern Montana in the 1870's including the fact that the eastern two-thirds of the territory was still Indian country and as Granville Stuart said, "covered with buffalo" (Osgood, 1929). Miles City was initially established in 1878 as a supply center for nearby Fort Keogh which was built in 1876 (Kurkowski, 1976). An important steamboat business was conducted with boats coming up the Missouri River and then up the Yellowstone River to Miles City. In 1879, 54 steamboats arrived from Bismarck, Dakota Territory (Miles City Daily Star, 1934). The town became an important east-bound shipment center for buffalo hides gathered in the Yellowstone River Valley with over 250,000 delivered in one season in the 1870's (Dawson, 1984). Many thought the dry

climate and sparse vegetation would prohibit any large agricultural or livestock expansion. This attitude quickly changed as cattlemen from the mining regions of western Montana expanded to the Sun, Smith, Judith, and Mussellshell river valleys in the north central and eastern parts of the state. By 1883, there were no buffalo and an estimated 600,000 head of cattle in these regions with stockgrowers reporting annual profits of 25-40%. In 1884, the Northern Pacific alone brought in over 98,000 head of cattle from the East and took back 75,000 to Chicago for slaughter (Osgood, 1929). In the 1880's, territorial promoters and railroad companies began to advertise all around the country and overseas about the great potential farming possibilities in eastern Montana. The agricultural industry continued to grow, experiencing pronounced booms in the 1890's and again between 1905 and 1915 (Osgood, 1929). After the turn of the century the growing sheep industry and the passage of the expanded Homestead Acts of 1909 and 1912 created tremendous growth in the number of new settlers to the region (Dawson, 1984).

Corporate links to Miles City (1.8%, 23 mentions) began in 1883 and between 1883 and 1908, 83.3% of the linkages were in the livestock industry. These linkages were mainly to midwestern cities ranging from Chicago to River Falls, Wisconsin. Until 1892, Miles City had more corporate linkages to out-of-state Montana centers and a higher population than did Billings which was established along the Northern Pacific railroad in 1882. By 1900, however, Billings had surpassed Miles City in population and began to draw more of the out-of-state corporate activity of eastern Montana. Even though 13 (57%) of Miles City's links occurred after 1904, livestock linkages declined and a variety of other businesses were established ranging from the Theodore Hamm Brewing Company in St. Paul to the Consolidated Oil and Gas Company of Sheridan, Wyoming.

Billings, like Great Falls, was built as a railroad town. Serving the Northern Pacific Railroad, Billings was slow to grow in its first few years but it then boomed from

1890 to 1910 as its population increased from 836 to 10,031 (United States Census Reports, 1890-1910). The diverse profile of corporate linkages were very similar to those of Great Falls (Figure 17). Out of 62 Billings connections, livestock and agriculture accounted for 22.6%, with an increase in agricultural linkages corresponding to the growth of this industry in the early 1900's. These agricultural and livestock links were mainly to smaller midwestern towns such as Columbus, Indiana where Reeves and Company manufactured the "Reeves Straw Stacker". Real estate was also an important industry throughout all time periods and comprised 19.4% of Billings total linkages. These companies were based in both large national and regional cities such as St. Paul and Denver, and in small regional centers along railroad lines like Lisbon and Valley City, North Dakota (Figure 16). There was also a small developing linkage pattern into Wyoming and Colorado as coal and railroad companies were established in the early 1900's via the Chicago, Burlington, & Quincy and other railroads (Cooper, 1981).

Missoula. Missoula is unique when compared to the other urban centers in Montana. It was established in 1864 as a mining supply center for the early gold camps and it gradually became a center for a variety of businesses, especially agriculture and lumbering (Burlingame, 1942). When the Northern Pacific railroad arrived in 1883 the town's survival was assured (Malone, Roeder, 1976). Extending the Northern Pacific westward allowed the mining boom of the 1880's and 1890's in northern Idaho to carry over into extreme western Montana creating many new connections focusing on Spokane (Fargo, 1950) (Figure 18a).

Linkages to Missoula County (excluding Missoula) show the strength of connections from extreme western Montana to northern Idaho and Spokane and their mining-related industries (Figure 18b). This western-oriented linkage pattern differs

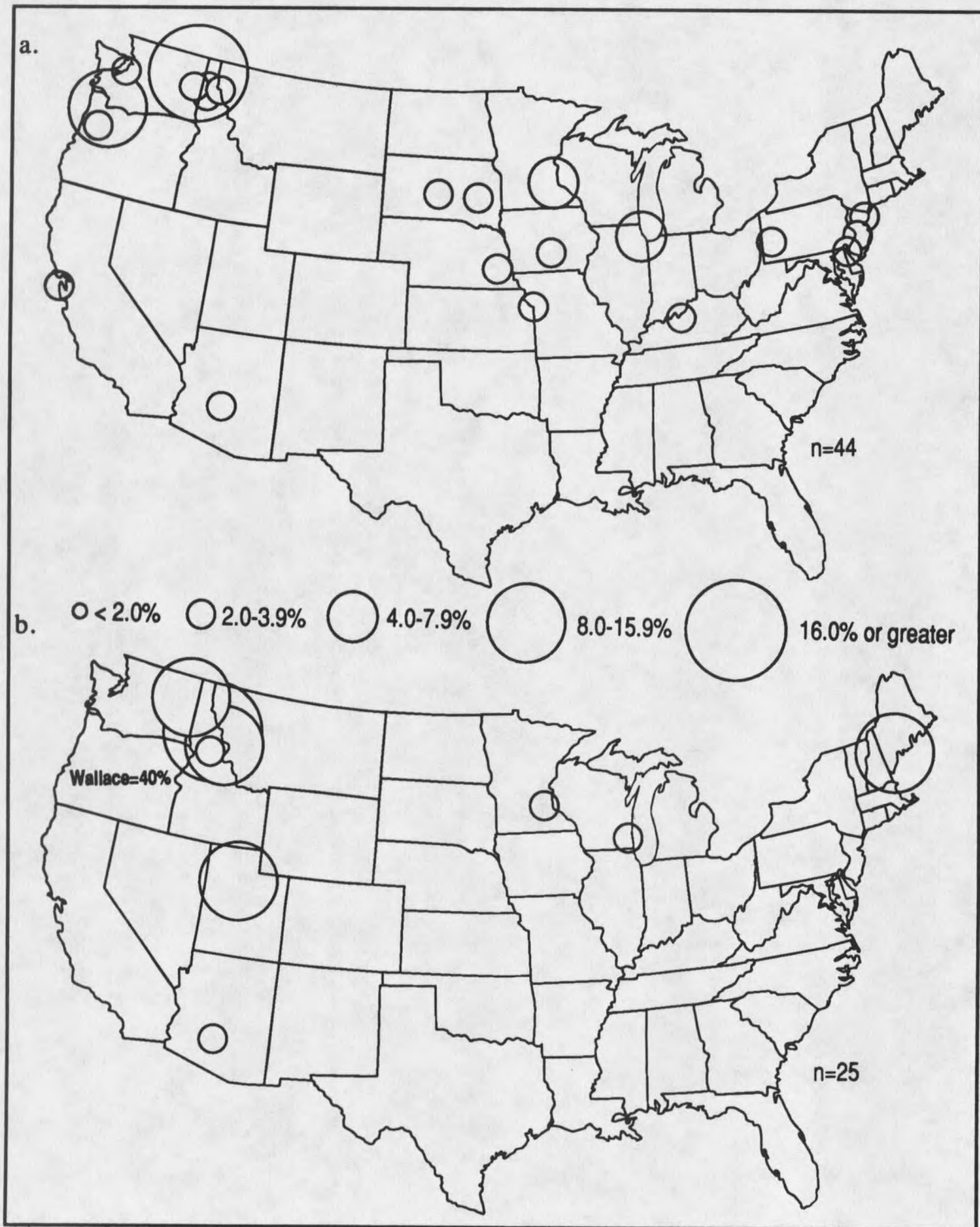


Figure 18. Missoula (a) and Missoula County (b) linkages, 1869-1914.

greatly from other Montana centers studied and provides strong evidence suggesting a regional diversity of linkage patterns. For example, Great Falls and Billings have over 90% of their linkages east and south of Montana with only minor connections to the Northwest developing in the last two periods. Missoula has 26% of its connections to Spokane and nearly 62% of its links to centers west of the state. Missoula County, excluding Missoula, shows its strong ties to Mullan and Wallace, Idaho, while 67% of its links are to centers west of Montana and very few links east.

Sixty percent of Missoula's incorporations up to 1904 involved mining companies. Other businesses included a railroad from Washington, utilities, insurance, and a nursery. The majority of these businesses originated in Washington and Oregon reflecting the strong bias towards the western states. Despite its early settlement date, Missoula was the base of operations for only 3.1% (39 mentions) of Montana's linkages. The 1904-1914 period was Missoula's first large population and incorporation growth period. Almost 72% all of Missoula's linkages developed during that decade along with a population increase from 4,366 to 12,869 (United States Census Reports, 1900, 1910). This influx of people is reflected in the incorporation of construction, lumbering, engineering, streetcar transportation, and four utility companies during the 1904-1914 period. However, during this last period, 39.3% of incorporations were still in mining with banking and finance comprising 17.9% of all linkages as Missoula became the undisputed center of banking in far western Montana. The majority of the mining links went to Spokane and northern Idaho while 3 of the 4 banking and financial links were to Edinburgh in the United Kingdom.

Newspaper Data

Introduction

The second component of this study examined out-of-state place name mentions in Montana newspapers. Newspapers from 1877, 1887, 1898, and 1909 were sampled for each of Montana's major urban centers in the study. Newspapers offer a data base distinct from incorporation records as they reflect day to day economic activities in a region. This method also allows for historical comparisons between each Montana center studied. These comparisons suggest how a center's economic base impacts its geography of economic linkages over time.

Meyer (1980) focused on how larger economic changes in a frontier center promoted an evolving pattern of linkages as the center expanded from a small town into a larger regional center. Wyckoff (1988) supports these hypotheses with his study of Denver and elaborated on the complexity of economic links from a developing center to the national urban system. Wyckoff demonstrated that Denver's links, as measured by newspaper place-name mentions, evolved from a focus on small centers to large national centers, especially Chicago and New York City. This shifting pattern reflected important changes in Denver as it evolved from a frontier entrepot to an established center with greater economic integration with the national urban system. These evolving patterns can also be analyzed by examining the types of links found in the newspapers.

Another factor that impacts the linkage patterns is the changing character of the national urban system itself. Wyckoff (1988) noted that the changing linkage patterns between Denver and the national urban system could be attributed not only to Denver's development, but also to changes in the larger national system, especially the growth of large regional centers such as St. Louis and Chicago. Similar changes also affected

Montana's linkage patterns. The Twin Cities, Chicago, Kansas City, and St. Louis developed significant linkages to Montana centers as they developed into important regional cities for the west central United States. In addition, as Vance (1970) suggests, construction of national railroad networks significantly impacts the pattern of economic place-name mentions to Montana.

As a frontier center develops economically, the types of links it has to national and regional centers will change. Early links often focused on basic transportation connections. They included the publication of stage and rail schedules that reflected newly-forged links with the national urban system. For the 1877 newspapers, about half of all the newspaper place-name mentions related to transportation. As the center developed and the frontier was pushed back, its economic needs changed and took on a more national focus with greater demands for specialized goods and services along with a growing interest in national economic news. In fact, by 1909, the sampled newspapers revealed that 70 percent of the place-name mentions related to general economic news while only 20 percent focused on transportation.

General Historical Patterns

The 1877 Pattern. In 1877, several overall patterns can be observed (Figure 19). First, the important connections to large cities are clear. Over 33% (of 975 total mentions) of the links focused on St. Louis, Chicago, and New York City. Most of these links were created via the Missouri River or the Union Pacific Railroad which was linked to Montana via the Corinne-Butte wagon road. The majority of linkages to these large cities consisted of advertisements for goods and services and transportation advertisements listing schedules for train and riverboat service from Montana.

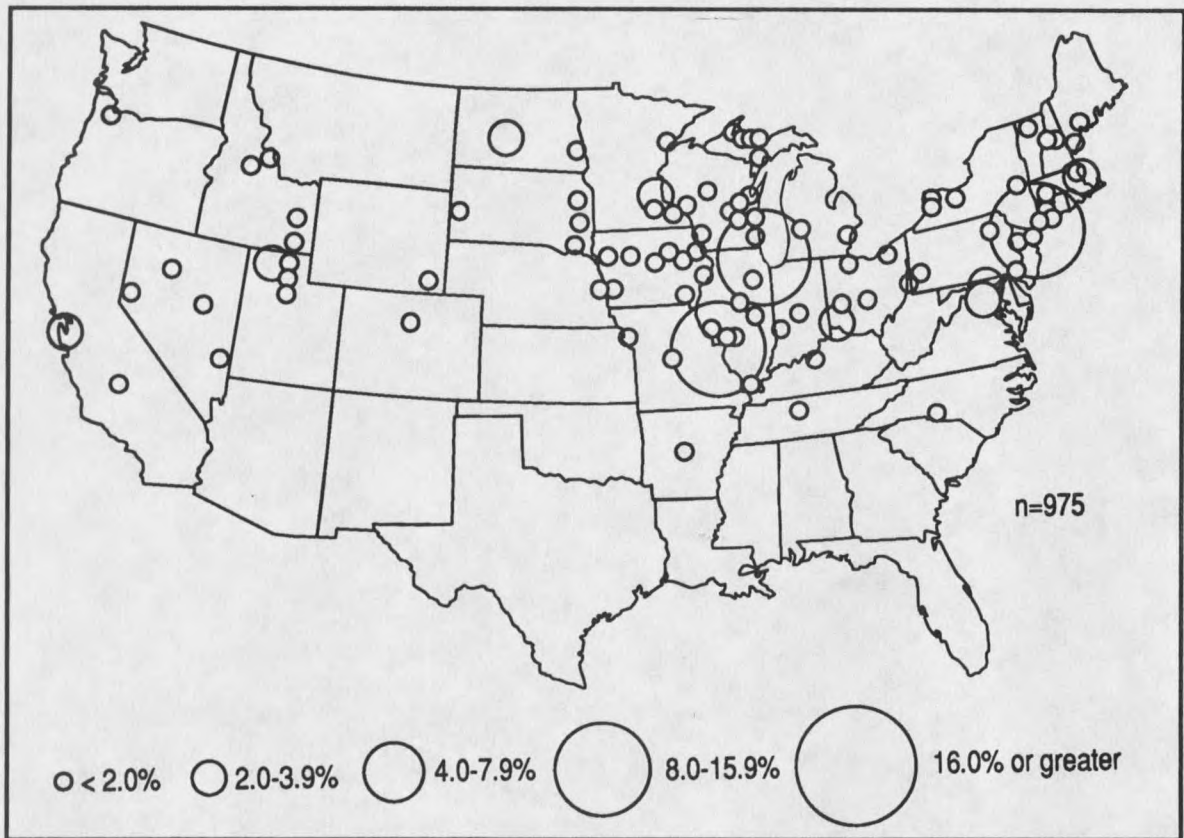


Figure 19. Montana newspaper place-name mentions, 1877.

A second notable pattern is the significance of smaller center linkages to the midwestern United States, especially in Iowa, Wisconsin, and Illinois. These links were nearly all transportation-related and reflected connecting rail line service from the Union Pacific and the Missouri River corridor. Another important aspect of these links is that they were often from areas of the country from which Montana settlers traveled and they offered ongoing connections for continual migration and growing economic activity. Along with the smaller center links were connections to the larger regional centers of Bismarck and the Twin Cities which each had about 3.5% of all Montana links for the year. The Twin Cities linkages were half related to transportation and half related to advertisements for goods and services while the Bismarck linkages were over 75% transportation-related. Bismarck was

an important transfer hub for goods and people leaving the Northern Pacific Railroad and boarding one of the Missouri River flat-bottom steamboats to finish the trip to Montana (Beal, 1962).

Finally, there was an obvious link to northern Utah and across Nevada to San Francisco along the Union Pacific Railroad. The majority of these links came from Butte and Helena and consisted of both transportation-related and goods and services linkage types, although there were some general economic news links with the growing mining community of Butte. Overall, during this period, transportation connections produced almost 50% of the recorded linkages. Advertisements for goods and services accounted for 42% of the linkages and general economic news only 8%. These numbers are fairly consistent with early Denver (Wyckoff, 1988), reflecting the frontier's need for basic goods and the importance of transportation in early frontier development.

The 1887 Pattern. The year 1887 represented the initial period following the completion of the Northern Pacific and Great Northern Railroads from the Twin Cities to Montana. This was strongly reflected in the linkage pattern with nearly 20% of all (760) links going to the Twin Cities (Figure 20). New York City, St. Louis, and Chicago still maintained nearly one-third of all Montana links. However, the percentage for St. Louis dropped from 12.3% to 4.7% while Chicago increased its links from 8.5% to 15.8%, reflecting a northward shift in Montana's regional linkages. The number of Montana connections mentioned between Omaha and Chicago notably increased and suggested more transportation-related linkages from the Union Pacific line to Chicago. Significantly, with the railroad expansion, the regional importance of Bismarck as a supply center for Montana declined as the shipping of goods along the old Missouri River route decreased. Conversely, the rising number of linkages to Duluth, Minnesota reflect the growing

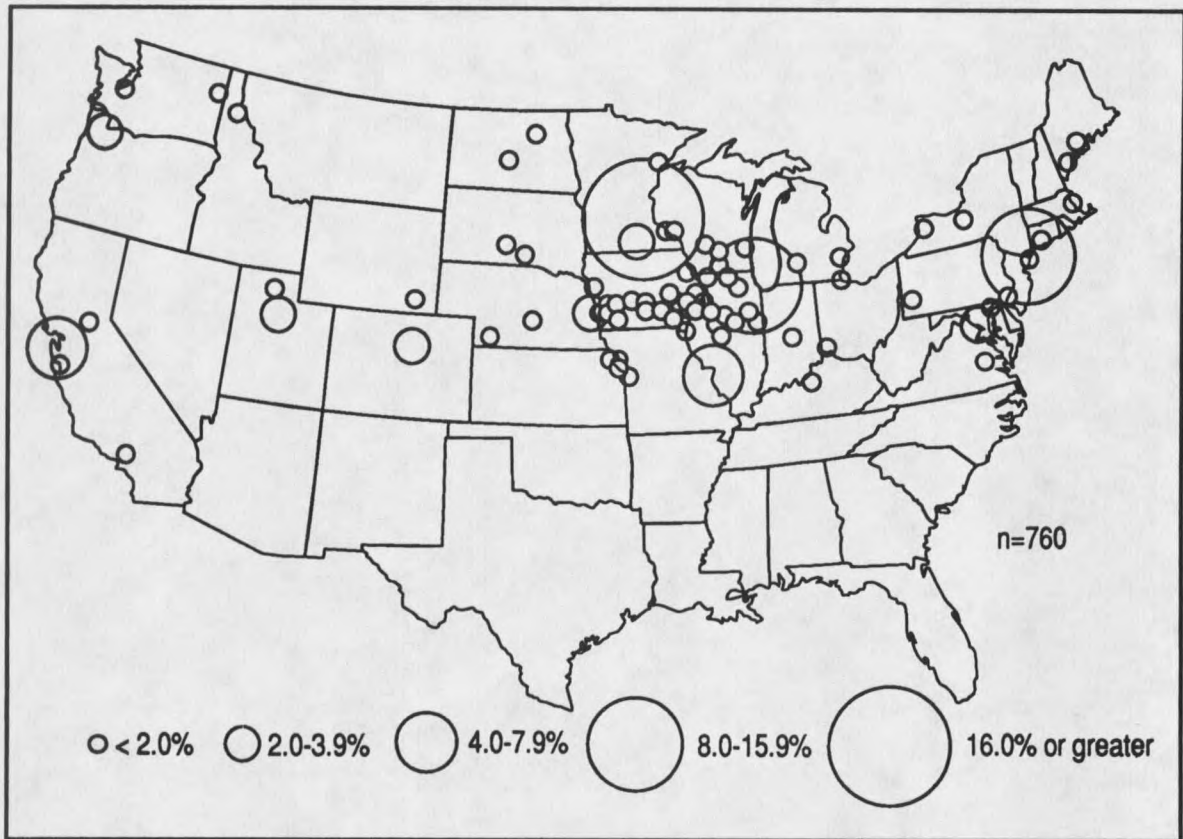


Figure 20. Montana newspaper place-name mentions, 1887.

importance of shipping through the Great Lakes and along the Great Northern Railroad which owned steamships on the Great Lakes to facilitate the transport of ores eastward and supplies and finished goods west (Borchert, 1987).

As the transcontinental railroads reached the Pacific Northwest in the late 1880's and early 1890's, stronger ties began to develop from the west coast. Portland (2.5% of all links) was the most important city in this region in the late nineteenth century until Seattle boomed at the turn of the century (Highsmith, 1968). Goods and services were delivered from Portland into the "Inland Empire", including western Montana, via the Mullan Road and the Union Pacific Railroad (Winther, 1950). As a result, Missoula showed the strongest of all of Montana's connections to Portland.

San Francisco also increased its share of Montana linkages to 5.3% with the majority to Butte, Billings, and Helena. Connections to San Francisco were generated along the Union Pacific Railroad which tied into Butte via the Utah and Northern Railroad. This, in turn, connected with the Northern Pacific and Montana's growing internal network of railroads, creating links to other Montana towns. Goods and services advertisements dominated these links with many ads in Montana newspapers for clothing and imported goods from the Far East arriving in San Francisco. Overall, Montana's linkage types did not change much from 1877 to 1887. The state was still dependent on out-of-state centers for many of its basic needs with 40% of its links in the goods and services sector. However, there was a change in the kinds of goods and services advertised. By 1887, there were fewer advertisements for basic supplies (flour, starch, dry goods) and an increase in more specialized advertisements such as dynamite, get rich quick schemes, and a variety of cure-all pills and syrups. Transportation linkages remained strong and accounted for 50 percent of the total.

The 1898 Pattern. By 1898, a changing pattern of linkages was evident with a westward shift to large urban centers and a decrease in the number of small center connections (Figure 21). Linkages to large national centers remained important during this period and expanded to include more centers west of the state. The strong ties already established to the Twin Cities, Chicago, and New York City remained important even though the overall percentage to the Twin Cities declined. The Twin Cities had dropped from controlling nearly 20% of the 1887 linkages from Montana, to only 13% by 1898 with nearly all linkages of the transportation type. Chicago's role was more diverse with one-half of its links in transportation and the remainder evenly split between goods and services and general economic news. New York City had two-thirds of its links in goods

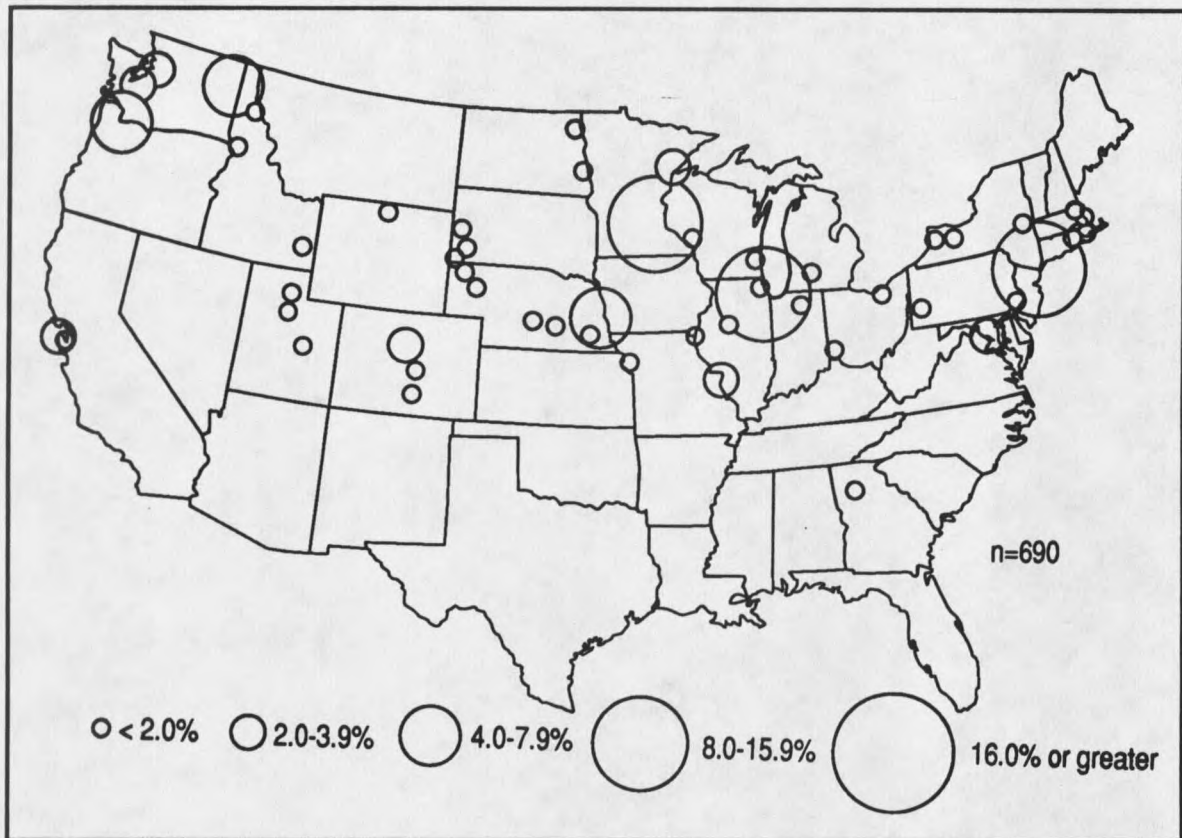


Figure 21. Montana newspaper place-name mentions, 1898.

and services and one-third in general economic news reflecting its role as the national economic center. However, a new set of connections were established with large centers west of Montana. During the 1880's, cities in the Pacific Northwest grew rapidly as the region was connected to the east via the Great Northern and Northern Pacific railroads. Cities such as Portland, Seattle, Tacoma, and Spokane boomed during the late 1880's and doubled their 1890 populations by 1900 (Table 2) (U. S. Census Reports, 1880-1910). As transportation to Montana improved, the influence of these growing Pacific Northwest centers on the state also increased.

When the rail lines were first built to Montana, the railroad companies went to great lengths to advertise all of their stops to points east of the state. By 1898, however, these

Table 2. Population of selected Pacific Northwest cities, 1880-1910.

City	Year			
	1880	1890	1900	1910
Portland	17,577	46,385	90,426	207,214
Seattle	3,533	42,837	80,671	237,194
Tacoma	1,098	36,006	37,714	83,743
Spokane	350	19,922	36,848	104,402

companies only advertised the final destinations and the largest urban centers the train would be traveling through. This accounted for the large drop in the number of midwestern small center mentions from Montana (Figure 21). Exceptions included the new establishment of connections to southwestern South Dakota into Nebraska along the Chicago, Burlington, & Quincy railroad running from Lincoln, Nebraska to Billings.

Linkage types during this period revealed a gradual shift away from advertisements for goods and services to more mentions of general economic news. An increase in transportation mentions was due mostly to the growth of railroad connections to Billings. Montana was beginning to become more integrated into the national urban system while its own economy also matured. Overall, transportation accounted for 60% of the mentions while goods and services dropped to 27% and general economic news grew slightly to 12%. These slight shifts in the 1898 data portended a major change in the distribution of business types that developed by 1909.

The 1909 Pattern. Two major changes in the newspaper data occurred by 1909. The first related to the changing pattern of linkages to the national urban system while the second involved the distribution of business types. A pattern of increasing focus on large national centers is evident throughout the four study periods climaxing by 1909 when

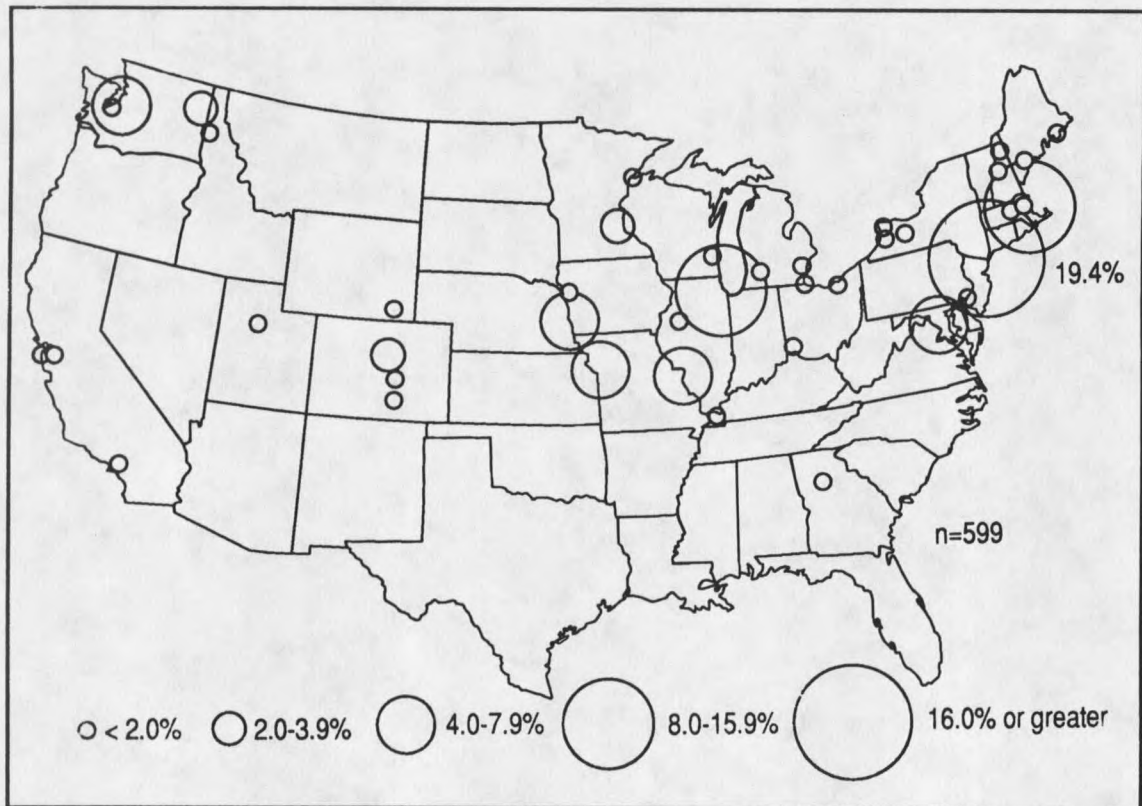


Figure 22. Montana newspaper place-name mentions, 1909.

almost 20% of all newspaper links were to New York City (Figure 22). Other important connections were established to Chicago, Boston, London, Washington, D.C., Seattle, Omaha, St. Louis, Kansas City, Denver, the Twin Cities, and Spokane. These eleven large cities accounted for 85% of all newspaper links from Montana during the 1909 period compared to 46%-61% for the same cities during the first three periods.

This emphasis on large cities can be accounted for by the increasing focus on general economic news rather than goods and services advertisements or transportation-related linkages. General economic news, which accounted for 70% of mentions for 1909, was usually generated and disseminated through the large cities, especially New York City, Chicago, and San Francisco with their world markets in metals and other commodities. A

drastic drop in the number of goods and services advertisements and transportation mentions occurred as transportation accounted for only 20% of the newspaper mentions while goods and services totalled 10%.

The total number of mentions for each time period steadily declined from 975 in 1877 to 599 by 1909 due, at least in part, to the lessened needs of Montanan's for goods and services from out-of-state and also the declining number of transportation mentions which detailed every stop along each train's route. The shift in business types and the decrease in the number of mentions throughout the study reflects Montana's increased integration into the national urban system, the maturing of its transportation linkages, and also shows its growing ability to satisfy its citizens needs for basic goods and services.

Montana Urban Centers: A Detailed Review

As Montana's urban centers evolved, the geography of place-name mentions shifted in a predictable fashion. Initially, each center displayed strikingly different connections to various out-of-state centers as transport links and ads for goods and services dominated. Later, the increasing overall importance of general economic news connections produced increasingly similar linkage patterns amongst the varied Montana centers.

By 1877, Montana's urban system was clearly taking shape. The territorial population was approximately 35,000. Helena and Butte were the largest centers, each totaling 3,000 to 3,500 persons. Missoula and Fort Benton had 1,600 each, while Miles City had approximately 600 residents (Since Great Falls and Billings were not yet established, Fort Benton and Miles City were examined only in the 1877 period because they were the dominant towns in their regions until the railroads arrived in the 1880's. Also, the data from Miles City for the first period was generated from 1880 newspapers,

representing the first stable and accurate news reporting from that eastern Montana center.) (Table 3).

Table 3. Population of selected Montana cities, 1870-1910.

City	Year				
	1870	1880	1890	1900	1910
Fort Benton	367	1,618	624	1,024	1,004
Great Falls	-0-	-0-	3,979	14,930	13,948
Miles City	-0-	629	956	1,938	4,697
Billings	-0-	-0-	836	3,221	10,031
Butte	241	3,363	10,723	30,470	39,165
Helena	3,106	3,624	13,834	10,770	12,515
Missoula	1,486	"2,400"	3,426	4,366	12,869

The major transportation links to the state were the Missouri River, the Corinne-Butte wagon road (connecting with the Union Pacific), and the Mullan Road which ran from Fort Benton to Walla Walla, Washington. There was a very strong eastward orientation of linkages in 1877, especially from Fort Benton, Helena, and Miles City (Figures 23, 25). The influence of the Missouri River is clear with the strong connections to Bismarck and St. Louis. Also dominant are the railroad connections from the Missouri River to Chicago, the Twin Cities, and small centers in the Midwest. These Missouri River linkages were critical in supplying Montana with goods and services while also shipping out minerals from the state. The types of mentions from these three centers were dominated by transportation (53.4%) and goods and services (43.5%), reflecting the early need for basic transport links and for services that could not yet be handled locally. Helena also had a small number of links to the Union Pacific Railroad in northern Utah which was also a major connection between Missoula and Butte to out-of-state centers. Butte and Missoula links were focused on New York City, San Francisco, and centers along the

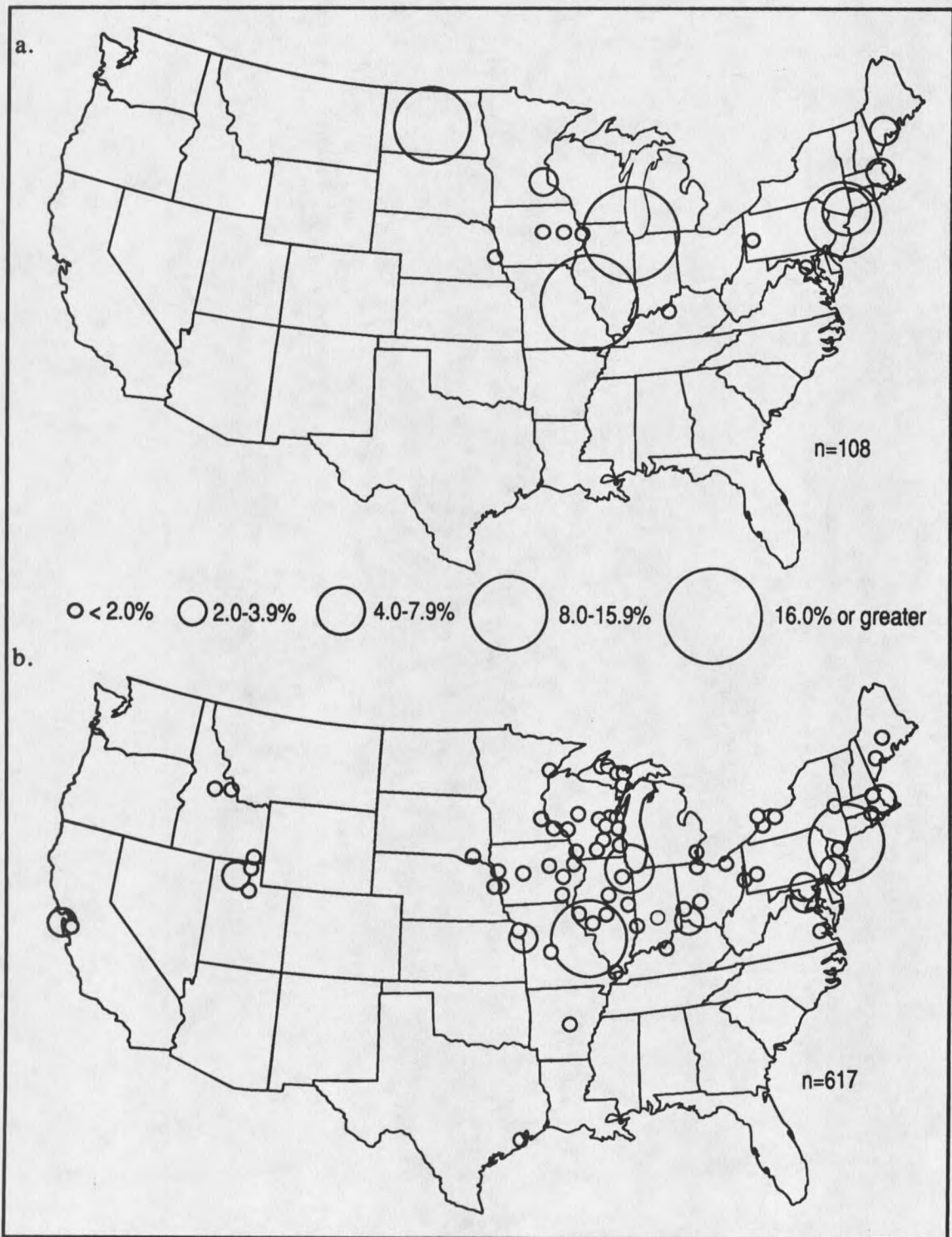


Figure 23. Fort Benton (a) and Helena (b) newspaper place-name mentions, 1877.

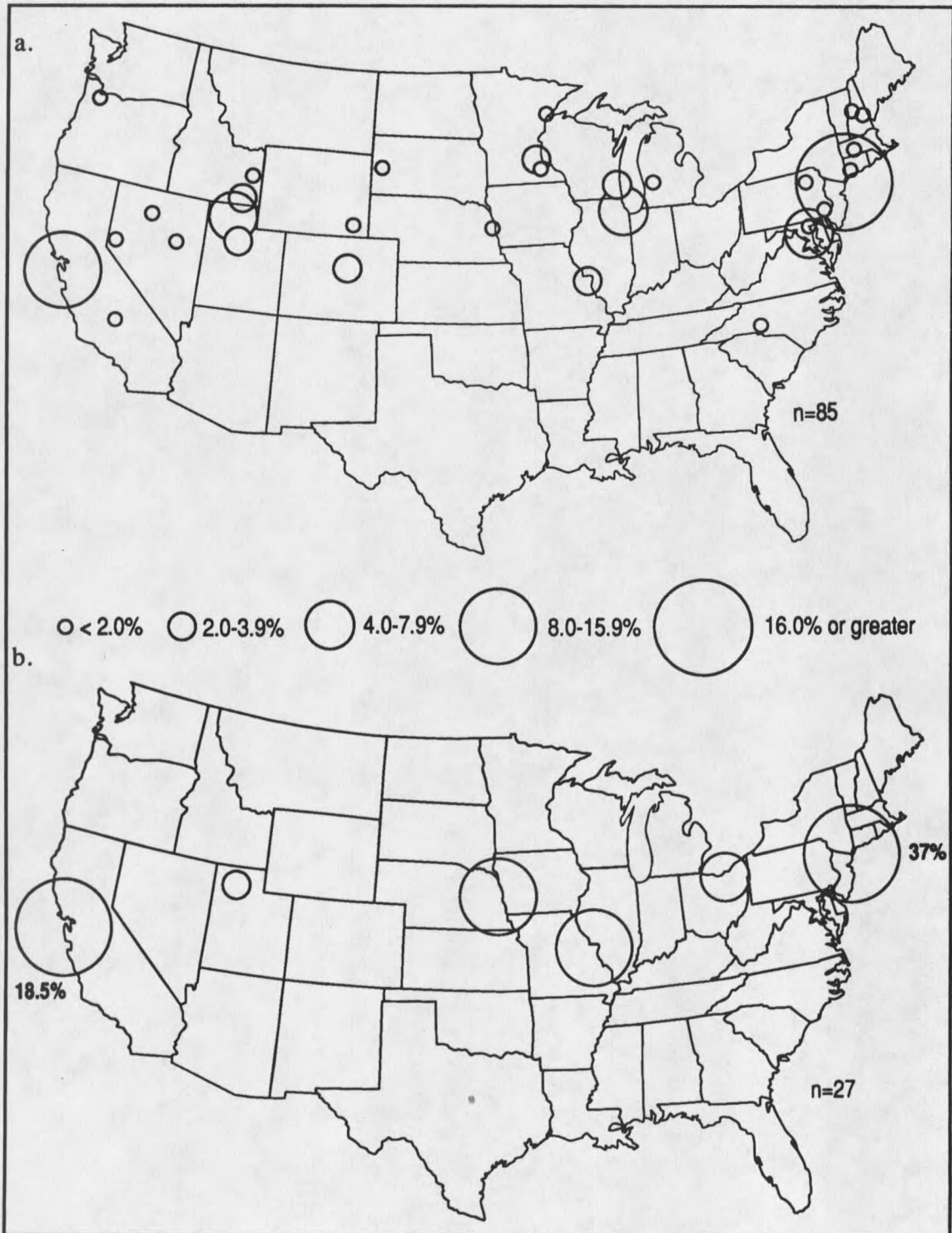


Figure 24. Butte (a) and Missoula (b) newspaper place-name mentions, 1877.

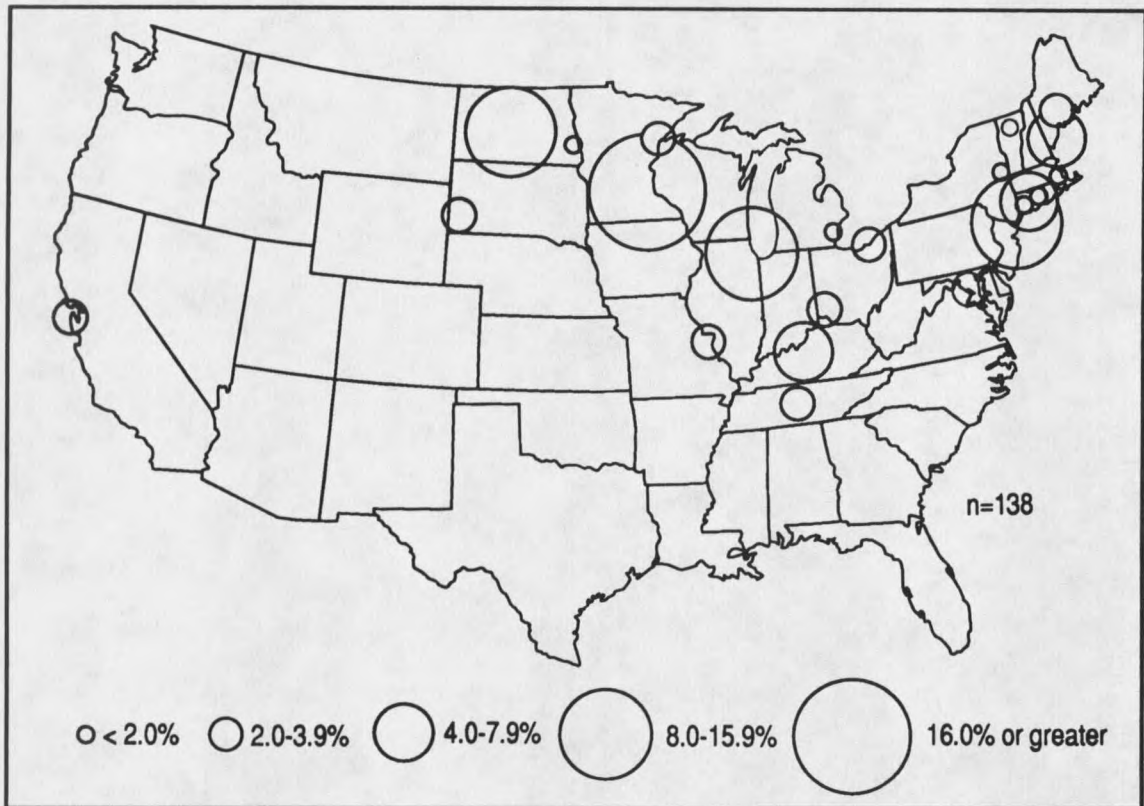


Figure 25. Miles City place-name mentions, 1880.

Union Pacific Railroad especially in northern Utah (Figure 24). Butte depended on this route to ship its minerals.

By 1887, Montana's detailed urban links changed in several basic ways. The growth of the railroads had a profound effect on the decline of Fort Benton as a major shipping point. The Great Northern railroad built across northern Montana and established its headquarters in Great Falls in 1887. The change was so dramatic that in 1888, the Great Falls Tribune referred to Fort Benton as an "historic town" with a population of less than 650 (Great Falls Tribune, Oct. 10, 1888). The effect on linkages from north central Montana to out-of-state centers was dramatic. In 1877, Fort Benton links were strong to Bismarck and St. Louis but by 1887, Great Falls' links had shifted north to the Twin Cities

(nearly 30% of Great Falls links for 1887) while mentions to St. Louis and Bismarck had dropped to almost zero (Figure 26a).

Miles City was also affected by railroad building but did not decline in population like Fort Benton. As water transportation along the Yellowstone and Missouri Rivers declined, Miles City was replaced by Billings as the dominant center and transportation hub in the eastern part of the state. Both towns experienced growth based on the development of agricultural and livestock industries in eastern Montana, which was encouraged by railroad growth. A shift in linkage patterns did occur, however, which was similar to that of the Fort Benton and Great Falls. The Twin Cities, Bismarck, and St. Louis were important linkages for Miles City in 1880. By 1887, there were no recorded links between Billings and Bismarck while the Twin Cities increased its connections dramatically (Figure 26b).

A third major change in Montana's economic structure between 1877 and 1887 was the phenomenal growth of the mining industry in Butte and the development of Helena as a stable urban center. The growth of Butte was spurred by the copper industry and resulted in an 1887 population of nearly 10,000. Helena's population also grew rapidly during this period and reached 13,000 by 1887. This growth was due to continued mining successes, the town's role as territorial capital, and its growth as a transportation hub within Montana.

There are some significant similarities in the 1887 linkage pattern between all Montana centers (Figures 26-28). An increase in the connections to large centers in the national urban system was notable with significant goods and services linkages to cities such as Chicago and New York City with a slight increase in the general economic news links from the markets in these cities. The Twin Cities also played a very important role as the main railroad hub east of the state. Nearly 92% of all ties for the period to the Twin Cities were of the transportation type. Over 25% of all linkages from Montana centers

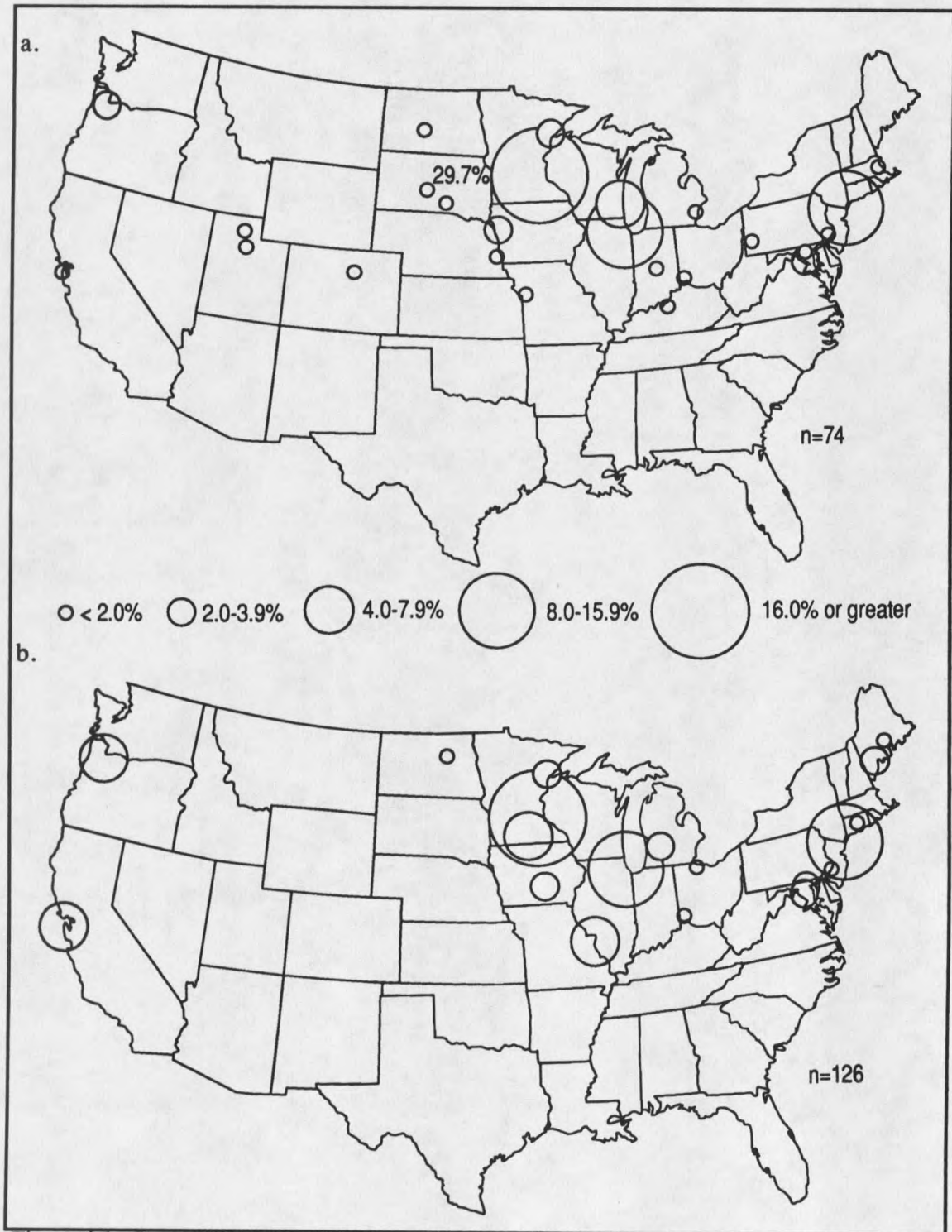


Figure 26. Great Falls (a) and Billings (b) newspaper place-name mentions, 1887.

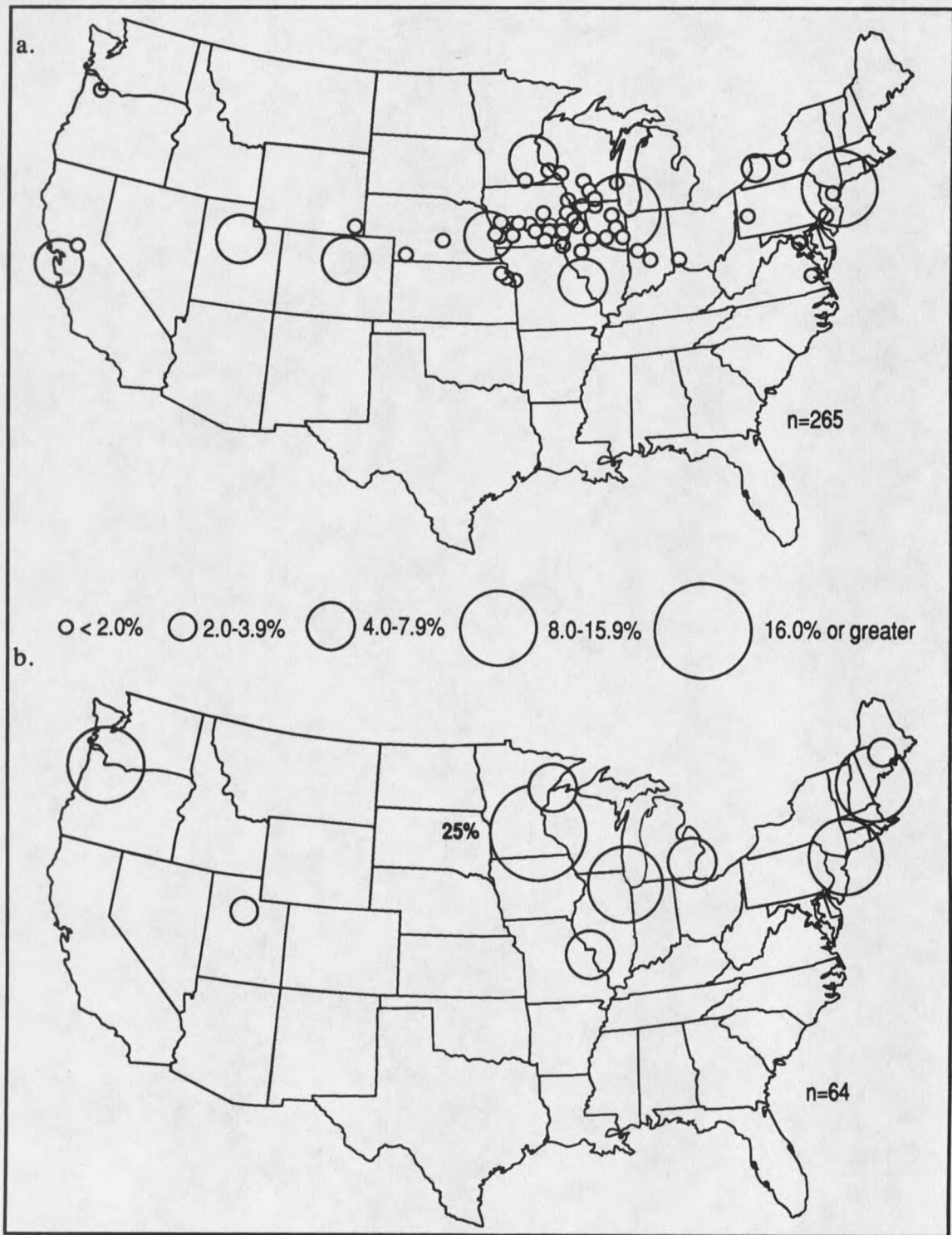


Figure 27. Butte (a) and Missoula (b) newspaper place-name mentions, 1887.

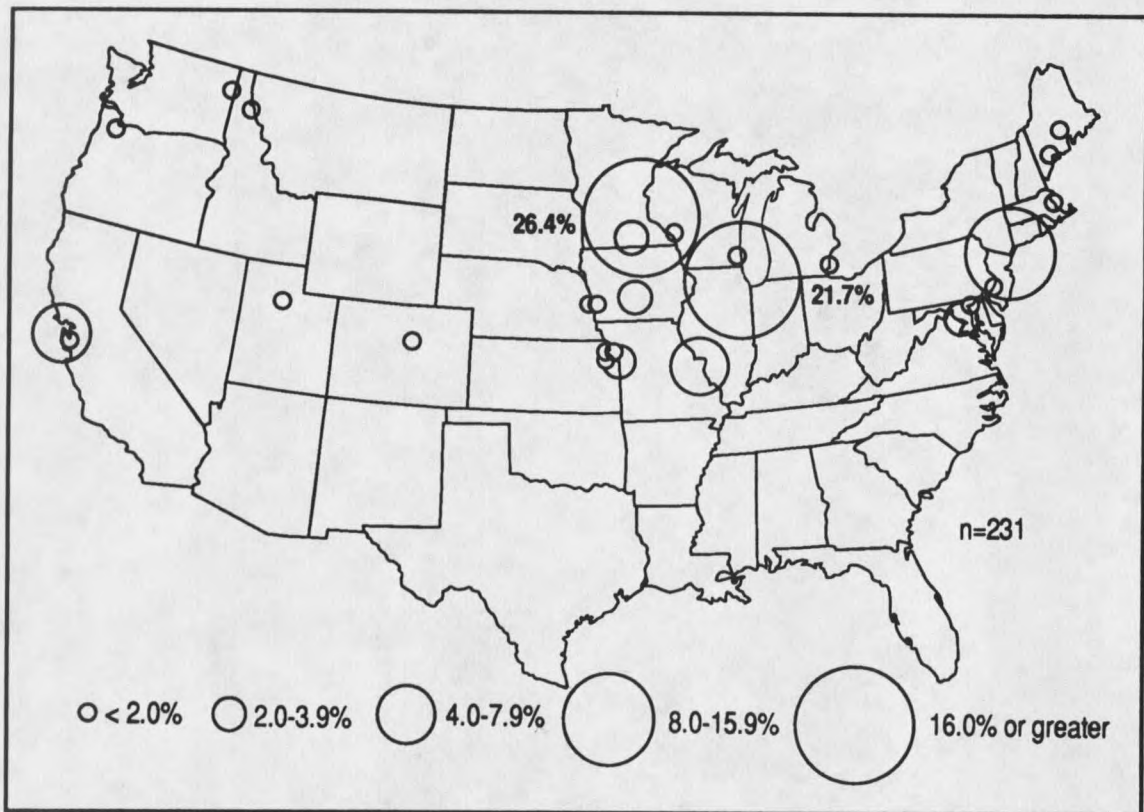


Figure 28. Helena newspaper place-name mentions, 1887.

were to the Twin Cities except from Butte which still maintained a solid connection to the Union Pacific via the Utah & Northern in Utah (Figure 27a). This connection was also emphasized in Butte's links to many small midwestern towns that had connections to the Union Pacific system between Omaha and Chicago.

As in the first period, goods and services (40%) and transportation (52%) were the most important newspaper linkage types with general economic news remaining at about 8.5%. Butte, after having 80% of its news being of the general economic type in 1877, dropped dramatically to 6.8% in 1887, which was more in-line with the other centers. This reflected large-scale railroad advertisements in the 1887 Butte newspapers. Missoula also increased its transportation-related links from zero in 1877 to over 40% by 1887 as a result

of the Northern Pacific's construction through town while Great Falls doubled its (Fort Benton) transportation links to over 70%.

By 1898, the future of Montana was well grounded in the powerful mining and expanding livestock and agriculture industries. Copper had come to dominate the mining industry which was centered almost exclusively on Butte. Butte grew into the state's largest urban center with a population exceeding 30,000. Helena remained a mining center (mainly gold) but much of its survival can be attributed to its role as the capital city of the state. Helena's population peaked at nearly 14,000 by this period, but leveled off at 12-13,000 for the remainder of the study. The transportation hub of Great Falls quickly became the state's second largest city with 15,000 people and was also becoming the supply center for the growing agricultural businesses in north central Montana. These industries were also expanding in the eastern parts of the state as lands became more available for settlement as the railroads improved accessibility and the Indians of the region were confined to reservations. With these changes, eastern Montana towns grew quickly with Miles City doubling its population while Billings quadrupled to over 3,000 residents. The building of a railroad from Missoula through the Bitterroot Valley in western Montana enabled agriculture to boom around Missoula, increasing its population to just over 4,000 (Koelbel, 1972).

When comparing the national urban system connections from each Montana center, it is clear that the striking differences so evident in the earlier periods are decreasing (Figures 29-31). One growing similarity amongst Montana centers was a common shift of linkages to larger centers with an eastward emphasis to the Twin Cities, Chicago, and New York City.

A second similarity in this period was the low number of linkages to small centers around the country. The only exception to this would be the links along the Chicago,

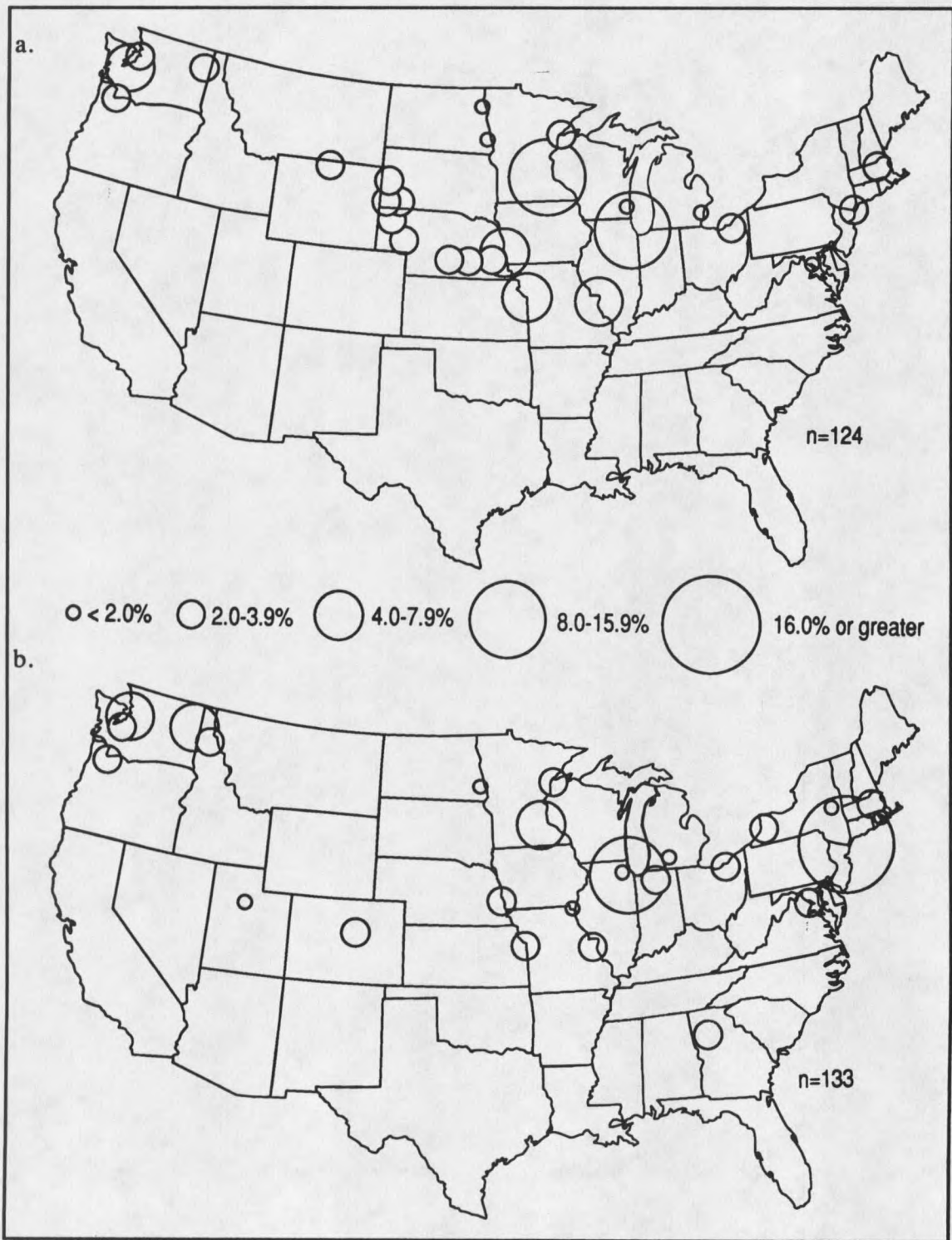


Figure 29. Billings (a) and Missoula (b) newspaper place-name mentions, 1898.

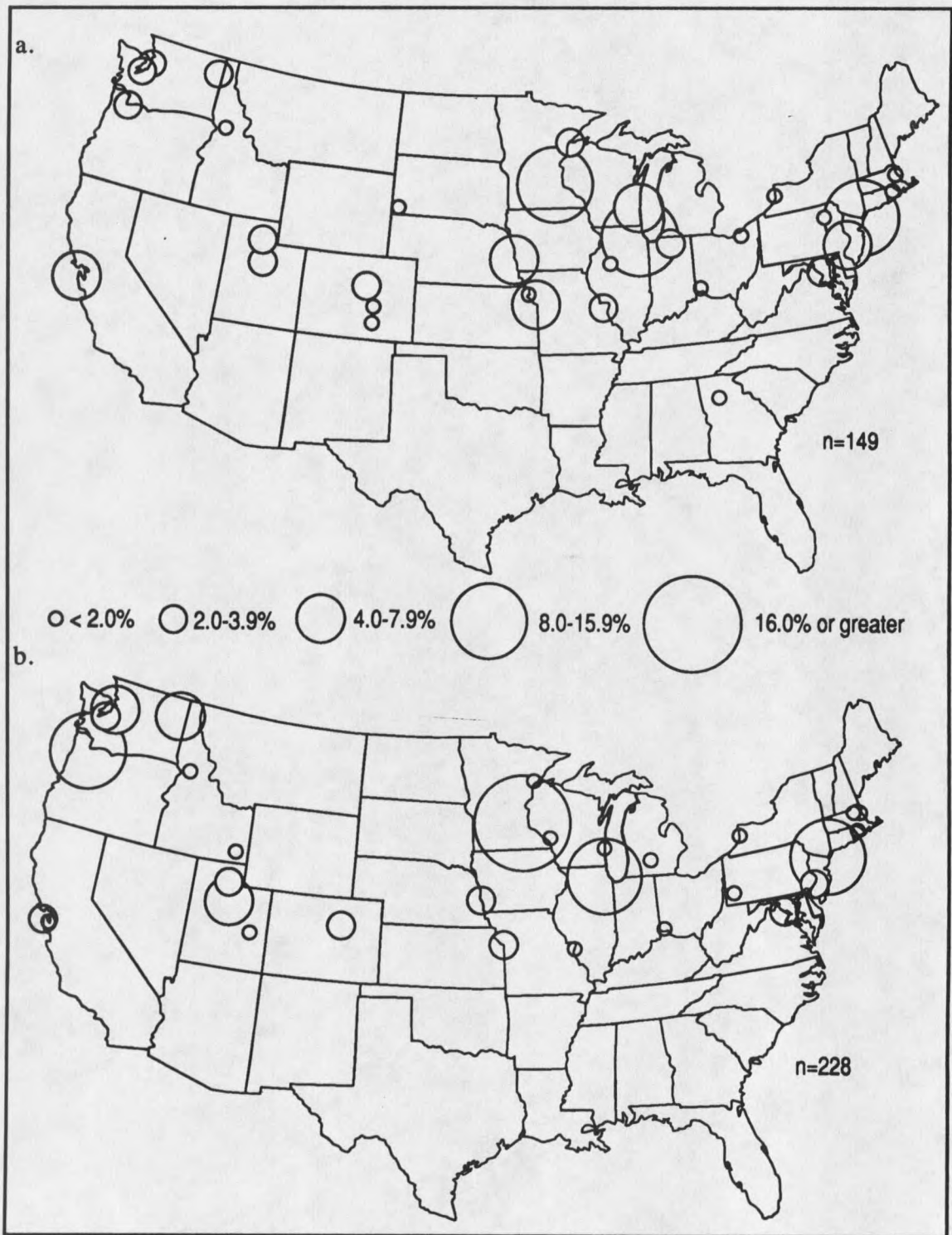


Figure 30. Helena (a) and Butte (b) newspaper place-name mentions, 1898.

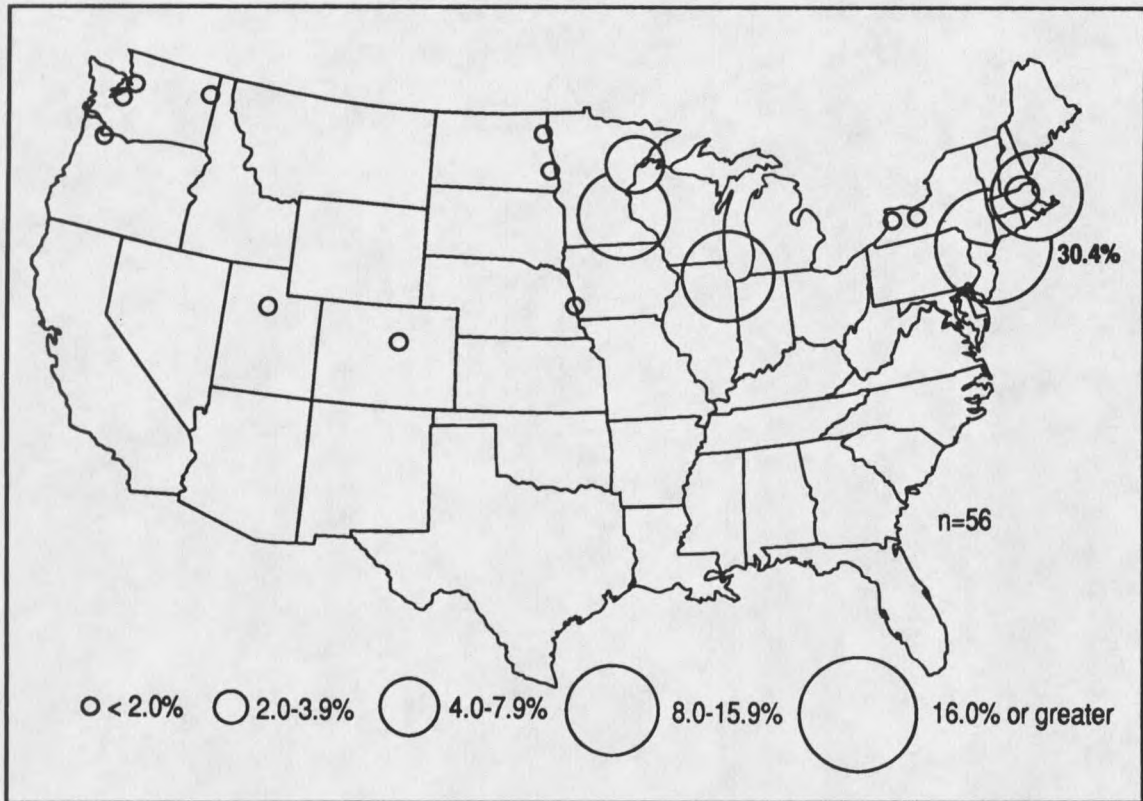


Figure 31. Great Falls newspaper place-name mentions, 1898.

Burlington & Quincy Railroad in southwestern South Dakota and northwestern Nebraska. A third similarity is the further development of linkages to cities in Washington and Oregon. The completion of both northern trans-continental railroads spurred general urban growth in the Pacific Northwest. This occurred most strongly along the Northern Pacific route through southern Montana (Figures 29, 30) with a high number of transportation linkages. These linkages were further emphasized in the newspaper sample because of the Pacific Exposition being held in Seattle that year. Great Falls, along the Great Northern, maintained its strong linkages eastward towards the Twin Cities and had only minor ties to the West (Figure 31).

The increasing number of general economic news mentions was also evident in 1898. Over 12% of the total mentions for the period were of this type. In particular, over 46% of Great Falls' place-name mentions fell into this category. Similarly, Butte's linkages often emphasized general economic news and national and international economic activities. Both of these centers were thus strongly connected. Conversely, Missoula remained less concerned with general economic news with no mentions in that category. The number of goods and service mentions continued to decline from nearly 40% in 1887 to 27% by 1898. As in the first two periods, Missoula was the exception with 57% of its mentions falling in the goods and services sector, indicating a lack of a strong local supply infrastructure. With the completion of the transcontinental railroads to the West Coast, transportation remained the dominant type of mention in the newspapers of 1898 with 60% of all linkages. Adding the newly constructed Chicago, Burlington & Quincy Railroad south of town to the already established lines of the Northern Pacific, Billings had over 85% of its mentions in the transportation category.

The year 1909 represented a dramatic change for the Montana centers and their relationships with other cities in the country. Internally, the state's population grew to 370,000, an increase of 50% in just over a decade. Leading this dynamic expansion was Butte which reached almost 40,000 with the continued growth of the copper mining industry. Missoula's 1898 population tripled to 12,500 as its agricultural, lumbering, and railroad enterprises expanded. In the eastern part of the state, the first large homesteading period was occurring as agriculture and livestocking dominated the region. Billings tripled and Miles City more than doubled in size to 10,000 and 4,500, respectively. Great Falls and Helena experienced little or no population growth as most new settlers went to the eastern and southwestern regions of the state.

As Montana grew and matured, its economic needs changed. The state no longer required as much assistance for outside goods and services and its interest in national and worldwide economic news increased greatly. These changes resulted in a different set of news reports and advertisements in local newspapers. General economic news accounted for over 70% of mentions for the period while transportation dropped to 20% and goods and services declined to 10%. This shift can be accounted for by the establishment of businesses within the state that could produce most of the goods and services required. Missoula still had 21% of its advertisements in the goods and services category but, most of these ads were for specialized items from distant centers such as Toledo, Ohio and Paducah, Kentucky (Figure 32a). The drop in transportation mentions was a result of an overall decrease in the number of railroad ads placed in newspapers. In the few ads that were placed, there was no longer a listing of every single stop along a given route. However, Billings still had 43% of its mentions in the transportation category. This probably occurred because Billings had a wider variety of routes to out-of-state centers (heading east, west, and south) than did other Montana towns.

The increase in general economic news indicates the extent to which Montanans were becoming integrated into the national urban system. Most of the general economic news originated in cities that were major hubs of trade and exchange or decision making. In the United States, this included New York City, Chicago, Boston, Washington, D.C., and to some extent, San Francisco while internationally, London became increasingly important. As a result of these changing economic needs within the state, linkage patterns also changed. Links to the Pacific Northwest dropped considerably from 1898 while Montana centers developed several new connections to cities that had not been previously identified as important links to the state. For example, all Montana centers, except Great Falls, developed strong ties to Kansas City and St. Louis (Figures 32, 33). Three-fourths

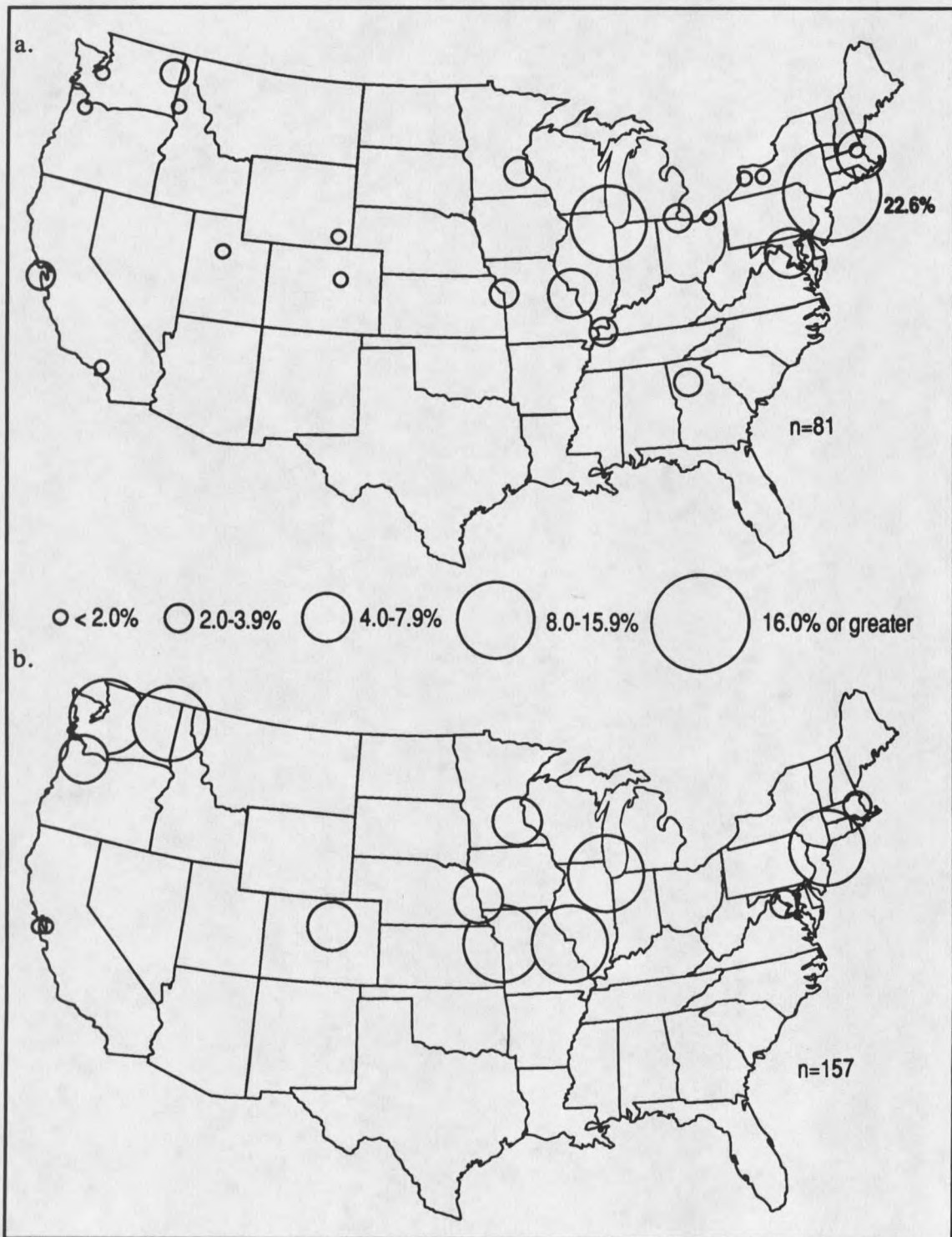


Figure 32. Missoula (a) and Billings (b) newspaper place-name mentions, 1909.



Figure 33. Butte (a) and Helena (b) newspaper place-name mentions, 1909.

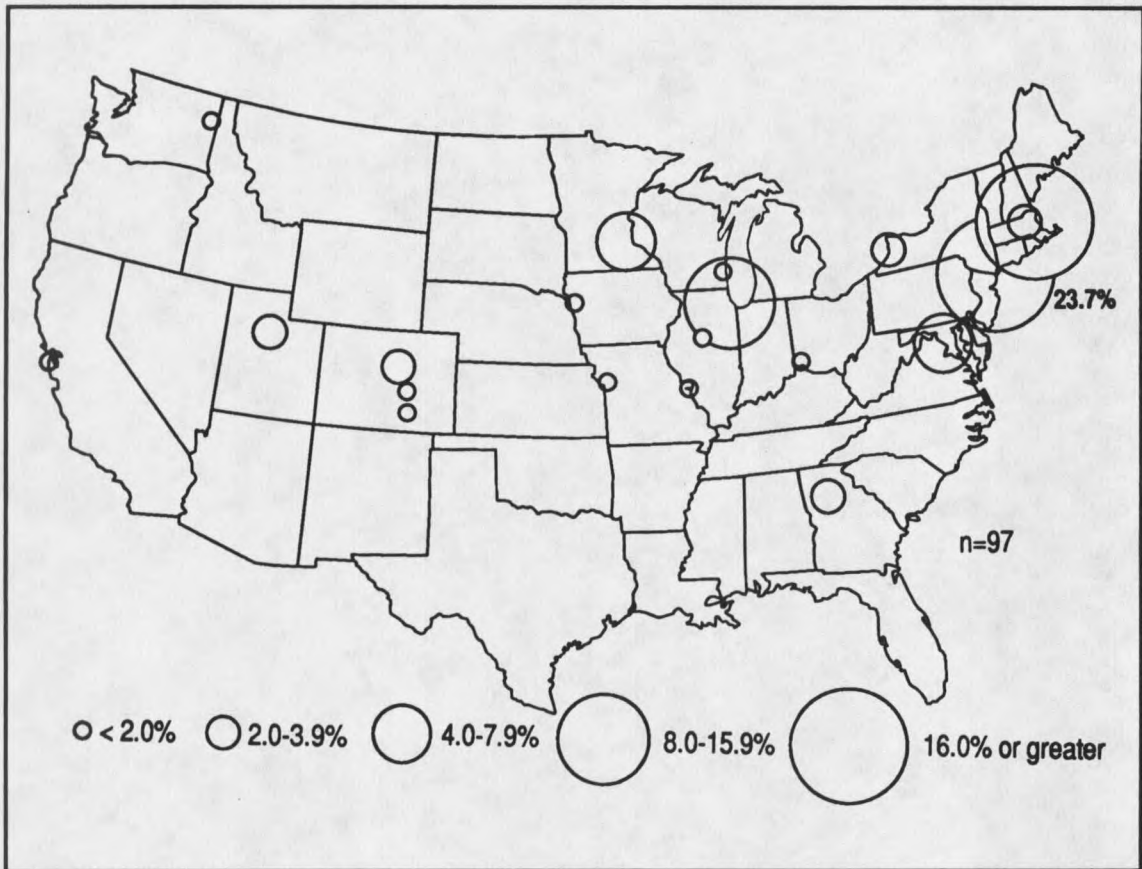


Figure 34. Great Falls newspaper place-name mentions, 1909.

of these linkages were general economic news (wool and livestock markets) while one-fourth were of the transportation type. These links corresponded with the expanding livestock industry in eastern Montana. A second set of connections were developed to London from all Montana centers except Billings. These linkages were all of the general economic news type and reported worldwide prices for various commodities on international markets.

As Montana was integrated further into the national urban system, each center developed similar patterns of linkages while still maintaining a certain degree of uniqueness. For example, even though the number of links dropped off overall, Great

Falls and Billings retained fairly strong transportation connections to the Twin Cities as it was still the most influential regional center for Montana with strong historic ties to both cities (Figure 32b, 34). Butte, however, had stronger links to Duluth because of the ores it delivered to be shipped east through the Great Lakes (Figure 30a) (Borchert, 1987).

CONCLUSIONS

This study of incorporation records and newspaper place-name mentions revealed varying patterns of economic linkages from Montana's developing frontier to the national urban system during the 1869-1914 period. These patterns shift due to urban maturation, economic growth, and improved transportation within Montana and also at the regional and national levels. By 1910, the national urban system saw increased influence by regional centers such as Chicago and Minneapolis/St. Paul, while the overall dominance of New York City declined (Conzen, 1977). Montana's internal economic picture also saw some changes. Through the period, the state's growth shifted from a focus on mining in western Montana to an economy that included the growth of agriculturally-based eastern Montana and the diversification of the economy in the west. There was also a decreasing dependence on out-of-state centers for basic goods and services as new Montana businesses met local demands and an improving internal transportation system facilitated the movement of goods between in-state centers.

Data from the incorporation records revealed Montana's growing integration with the national urban system and the development of well-defined linkages along railroad lines. Large mining companies based in New York City were prominent participants in Montana's early development. New York City continued its influence in Montana via the insurance and banking industries in the later periods of the study, reflecting its national importance in these industries. As the number of total incorporations grew, however, so did the number of links to large and small regional centers beyond New York. Chicago and the Twin Cities were especially important regional centers after 1880 with a diversity of business linkages to Montana.

In the last two periods (1893-1914), Spokane joined Chicago and the Twin Cities as another important large regional center as the railroads reached the Pacific Northwest. Spokane's links focused on the mining industry in western Montana while Seattle and Portland forged a greater variety of business links. Phoenix developed an unexpected connection to Montana which involved mostly copper mining companies based in Butte. The number of small center linkages along railroad lines boomed during the final period as many agricultural links were established from out-of-state farming communities, especially through the Dakotas and the Midwest.

Montana's frontier urban centers created linkages focused on their basic industries. The types of linkages changed as Montana's economic structure matured and diversified. Strong mining links from Butte, Helena, and Missoula to other national mining centers such as Denver, Spokane, and Phoenix were established. Helena later developed strong insurance and banking/finance connections as its economy became more diversified with its role as the state's capitol. Butte's linkages remained in the mining industry with little diversification occurring by the end of the study. Missoula showed a strong orientation towards Spokane with mostly mining business linkages. Missoula and Missoula County were very strongly linked with the Pacific Northwest representing a pattern unique to Montana's developing urban frontier. The importance of the railroad and agricultural/livestock industries to Billings and Great Falls created firm links from these centers to the Midwest, particularly Minneapolis and St. Paul.

The newspaper data showed a very different pattern of place-name linkages to Montana. Over time, this pattern changed from an influence of small and large regional centers, mostly along the Missouri River and the Union Pacific Railroad lines, to a focus on large regional and national centers by the turn of the century. These large regional centers remained important but by 1909, New York City and Boston had developed

important links to Montana with New York accounting for nearly 20% of all Montana's place-name mentions.

Initially, Montana was dependent on outside centers for supplies of basic goods and services. The towns that were connected to the territory by the most efficient transportation had the greatest impact. As transportation improved, more long-distant centers developed linkages to Montana, many of which were advertised by the newly-built Northern Pacific and Great Northern railroads. By 1909, Montana had established basic businesses within the state that met the needs of its citizens and were no longer dependent on outside suppliers. As the agricultural, mining, and other industries grew, Montanans became more concerned and involved with national and international economic news which increasingly affected them. Local newspapers reflected this shift as railroad timetables and advertisements for out-of-state goods and services were replaced with commodity prices for gold, copper, wool, and other pertinent economic news.

The newspaper data for each Montana center studied showed a variety of patterns dependent on the geographical location within the state and on the economic structure of the center. Butte and Helena established important links to northern Utah and the Union Pacific. Linkages were extended to San Francisco and eastward to various small midwestern centers and to larger cities such as Chicago and the Twin Cities. Great Falls and Billings also established midwestern connections but these were along the Great Northern, Northern Pacific, and Chicago, Burlington & Quincy railroads. Missoula remained unique as it developed linkages along all of the transcontinental railroads that connected with the state and also developed 21% of its total mentions to New York City. Billings, Butte, and Missoula (all along the Northern Pacific) established significant links to the Pacific Northwest while Great Falls and Helena had only minor connections to that region (Figures 35-37).

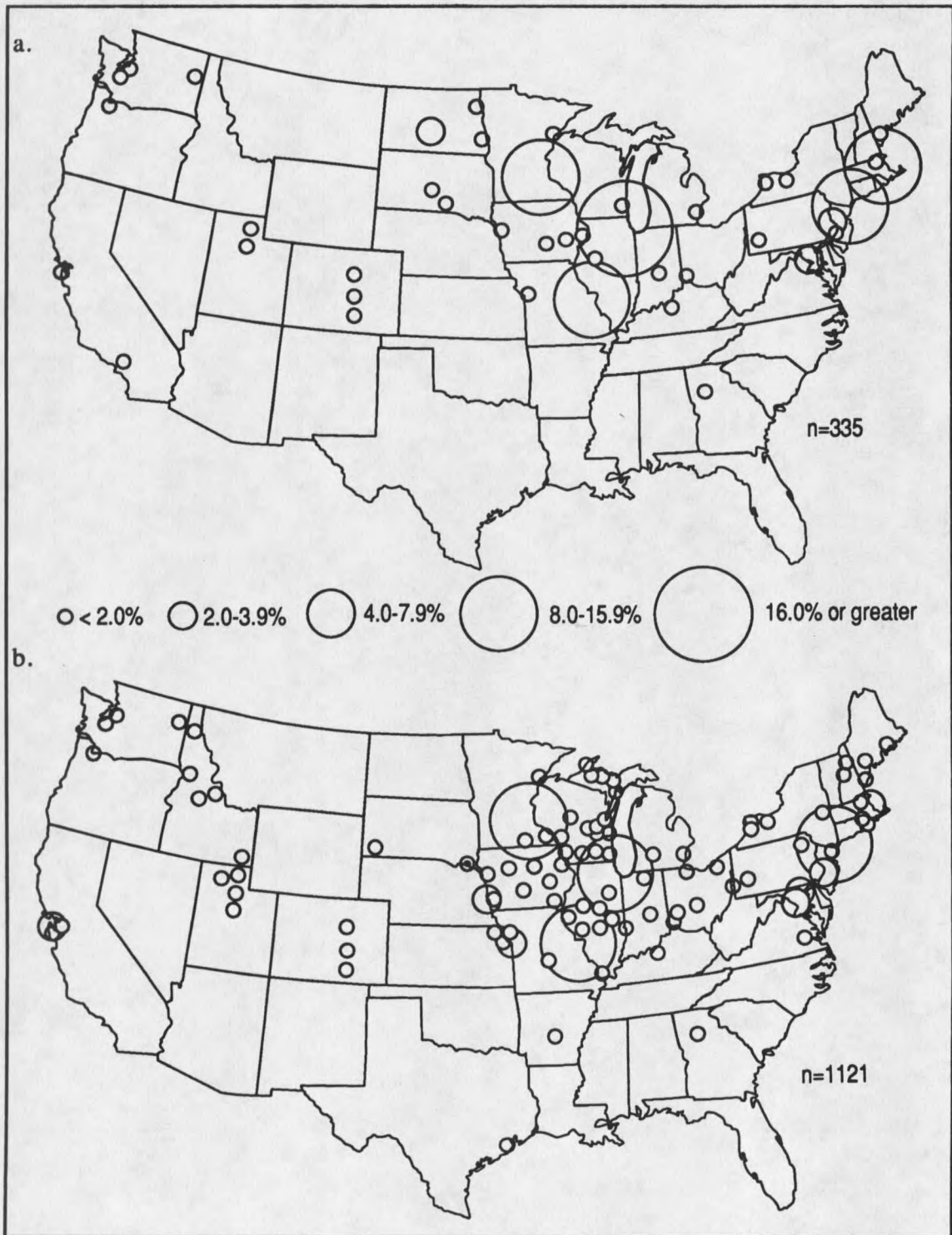


Figure 35. Newspaper place-name mentions, Great Falls, 1887-1909 (a) and Helena, 1877-1909 (b).

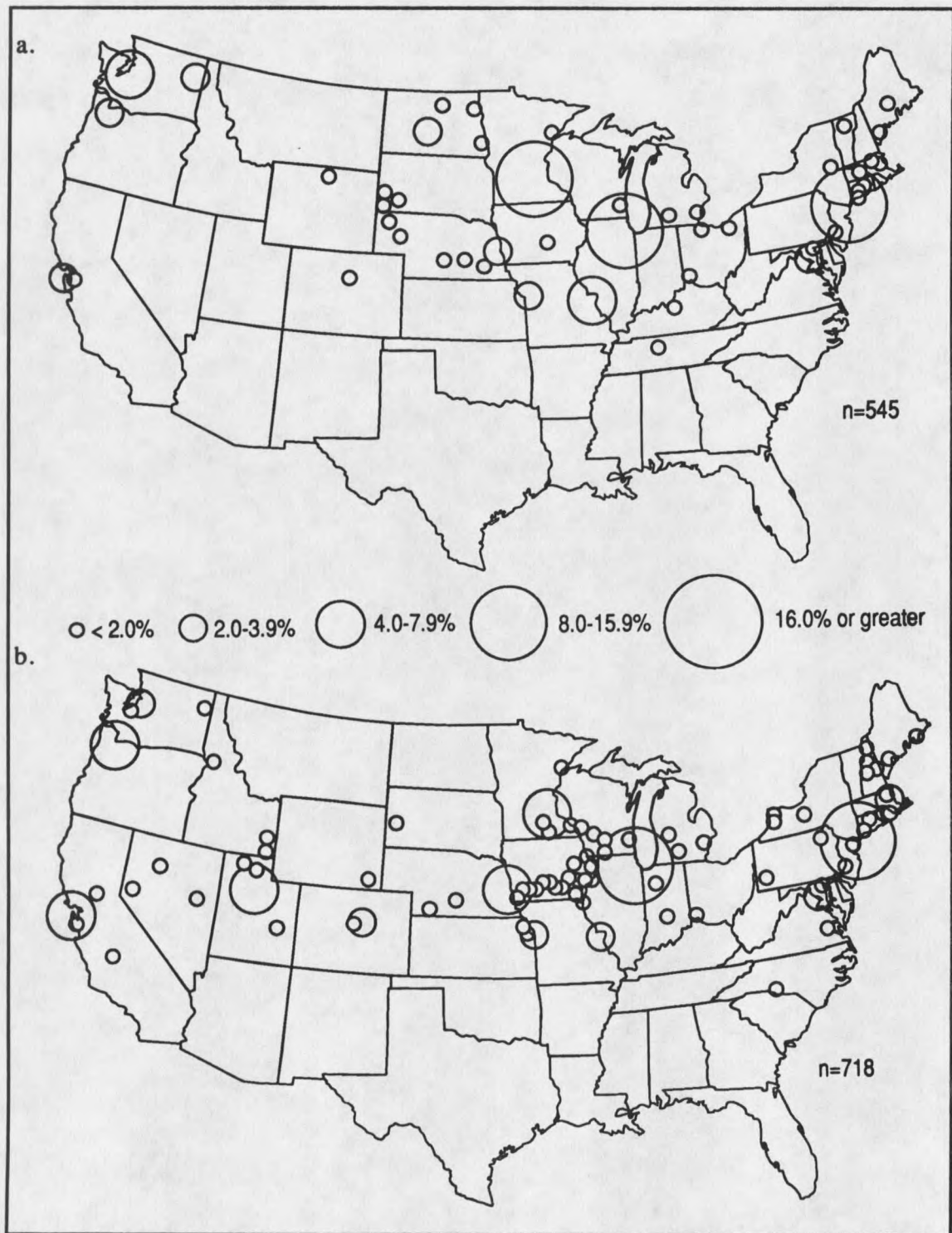


Figure 36. Newspaper place-name mentions, Billings, 1887-1909 (a) and Butte, 1877-1909 (b).

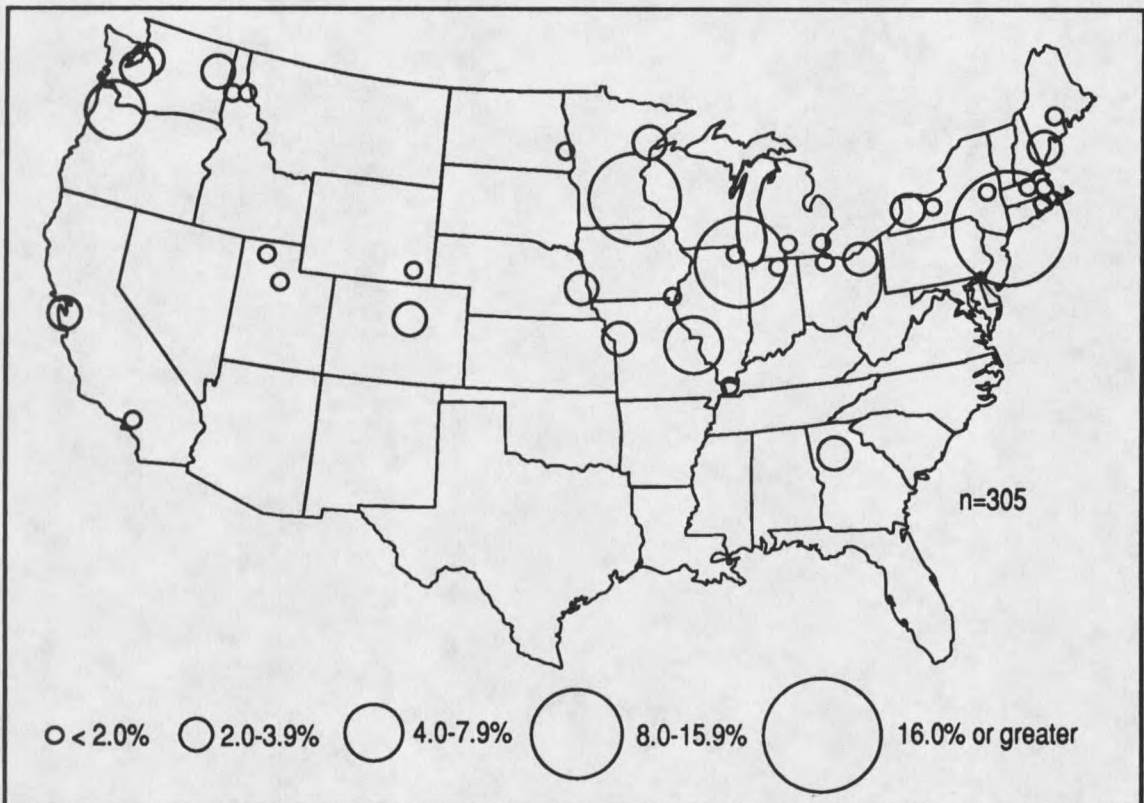


Figure 37. Newspaper place-name mentions, Missoula, 1877-1909.

Comparisons of Newspaper and Incorporation Data

The incorporation and newspaper records reflected different aspects of Montana's frontier urban economic development. As a result, the two data sources produced quite different linkage patterns. The incorporation data emphasized the creation of larger-scale business linkages to the state while the newspapers measured the day-to-day movements of goods, the strength of selected transportation connections, and sources of general economic news. A comparison of these two sources reveals both similarities and differences. For example, newspaper data connections to New York City increased throughout the study due to the maturing economic structure of the state and as Montana became better integrated

into the national urban system and thus increasingly tied to national markets. This shift produced an increased frequency of general economic news mentions in Montana newspapers which coincided with declines in the number of out-of-state advertisements for goods and services and transportation-related news. The percentage of corporate links to New York City, however, dropped significantly by 1914 as changes in the national urban system resulted in regional centers exerting greater influence on frontier development.

Strong linkage patterns developed along important lines of transportation for both data sets. An early important connection to Montana was along the Missouri River. Towns such as Bismarck, Kansas City, and St. Louis established strong links to the territory. When the railroads arrived the strength of river connections decreased in favor of links along the railroad lines. A reinforcement of these rail connections occurred as people moved to Montana and often encouraged others from their home towns to move to the state. A large migration occurred after the turn of the century with the state's population increasing from 243,000 in 1900 to about 450,000 by 1915. A majority of this population influx originated in the midwestern states and settled in eastern and northern Montana as these agricultural regions developed (Groth, 1970). By 1910, nearly one-third of Montana's population had been born in the Midwest (Iowa, Minnesota, Wisconsin, Illinois, Indiana, and Missouri) and contributed more new settlers to the state than all other regions of the nation combined (Census Reports, 1910).

There was not always a decrease in the number of linkages to pre-railroad out-of-state centers when the railroads arrived. For example, Butte developed strong pre-railroad links to northern Utah along the Corinne-Butte wagon road. This link was only strengthened when the Union Pacific built a spur to Butte in 1881. A second exception was the re-establishment of newspaper links to St. Louis and Kansas City in the last years

of the study as these centers increased their regional dominance in the national urban system.

Both data sets demonstrated that three other regional centers which greatly impacted Montana's economic growth were the Twin Cities, Chicago, and Spokane. The Twin Cities and Chicago were railroad hubs and developed as supply centers and departure points for people entering Montana from the east. Chicago also played an important role later in the study with links from Montana to its commodity markets. Spokane's influence was felt after the transcontinental railroads were completed around 1890 and was an important transportation and supply center with many investors in mining businesses in Montana's western centers. All three regional centers were situated on rail lines and maintained important links for both data sets.

Spokane was not the only center in the Pacific Northwest to influence Montana's development. Incorporation data show the boom period for Seattle, Tacoma, and Portland occurred after 1890 and continued through the end of the study. The newspaper data display a number of connections to the state in 1887 and 1898 (mostly to Missoula) with a drop off in the 1909 period reflecting Montana's increased self-reliance for goods and services and a lack of national economic markets in the Northwest. Most of the links from Billings, Butte, and Missoula to the West during 1909 were advertisements to the "Northwest Exposition" held in Seattle that year.

As Montana further integrated into the national economic picture, it also became increasingly involved in international economies. As a result, the number of newspaper links to London increased from less than 1% in periods 1-3 to over 8% by 1909. The majority of these links were to Butte and Helena dealing in world markets for precious metals and general economic news. London maintained a considerable number of corporate mining and agricultural links with 2-5% of the total state linkages for the first

three periods. By the last period, the percentage of corporate links from Montana to London dropped to less than 1% as regional business influence grew.

Significance of The Montana Case Study

A reconstruction of incorporation and newspaper linkages between Montana's developing urban centers and the national urban system provides valuable historical information along with insight into the growth processes of frontier regions. The historical resources used in this study have been utilized in only one other western state. Wyckoff's Colorado studies (1987, 1988) focused on the primate city of Denver. There are some similarities between Montana and Colorado, especially in the shared importance of the mining industry. However, Montana is distinctive because of its decentralized urban system, varied economic emphasis, and its west to east pattern of original Anglo settlement. These variables helped create a diverse set of linkages with out-of-state locations. Then, as Montana's early relative isolation decreased, the region became better integrated into the national urban system.

An examination of existing models of urban systems offers a perspective for interpreting the Montana data. The shift from a primate urban banking system to a more complex modified hierarchy, as proposed by Conzen (1977), parallels the Montana incorporation data as regional centers became increasingly important to Montana's urban growth. Conzen discussed a shift to important regional centers from New York City and cited a specific banking connection between the Twin Cities and Butte. This study supports a strong newspaper and incorporation linkage pattern to the Twin Cities from Montana. This Midwest link is also developed by Andrew Burghardt (1971). Burghardt and others state that St. Louis was the early dominant gateway to the entire western United

States, but as the railroads were built across the northern Great Plains the Twin Cities became the primary gateway to the northern plains and Rocky Mountains.

Many researchers have suggested the importance of transportation systems to the growth of cities. James Vance's mercantile model (1970) relates the linearity of certain urban systems to transport networks and also focuses on the change from general to more specialized goods carried through these systems. Wyckoff (1988), Johnston (1982), and Meyer (1980) support the importance of transportation especially in the frontier's early development. Meyer and Wyckoff (1988) also focus on the growing complexity of linkages that are associated with transportation improvements. Linearity was observed in the newspaper data set particularly for the 1887 and 1898 periods. Incorporation data also reflected linear patterns that increased in intensity throughout the study as small regional centers developed more links to the state.

The economic diversity of Montana resulted in quite distinctive linkage patterns for each center. Wyckoff (1987, 1988) suggests that a center's economic base will result in distinctive linkage geographies. Further, as a center evolves over time, its linkage patterns change. For example, as Helena grew from a mining town into a diverse state capitol city, its incorporation links shifted from a focus on regional centers towards larger national and international cities. Overall, the maturation of Montana's cities created more newspaper links up the urban hierarchy as more specialized goods and services were demanded and interest in national and global economic news increased (Wyckoff, 1988, Meyer, 1980). This also produced decreased differences between linkage patterns over time as Montana cities shared an increasing number of characteristic relationships with the national urban system. Businesses often established linkages from centers in the national urban system with similar specializations as transportation improved and industries within Montana further developed. Wyckoff (1987) notes differences in the geography of connections

between mining and insurance to Colorado. In Montana, Helena insurance links were to Hartford, Boston, and London while Butte's mining connections were to the industrial centers of the Ohio Valley and large financial centers on the East Coast. A very specialized link was also established from Butte's copper industry to Phoenix, the statewide corporate center for Arizona's copper companies.

The role of long-distance small centers has also been examined by previous researchers. Pred (1980) developed a model of interdependencies between large and small centers in the eastern United States. Wyckoff (1987) notes similar results in the incorporation connections from Denver. This study found an increase in the total number of incorporation links to small centers over time along with a steady number of connections to small centers in the Midwest and eastern states. However, the newspaper data in both Montana and Colorado studies stresses the importance of small centers in supplying goods and services in the early periods of frontier growth.

Suggestions for Future Study

An analysis of other types of Montana's economic linkages would provide a clearer picture of the state's development. Banking records may offer more insight into the financial links to the national urban system while also further testing Conzen's model of the evolving banking hierarchy. A study of links using records of the Wells Fargo Company and other early stagecoach mail carriers, along with an examination of railroad and telegraph records would also help recreate important communication connections. A thorough examination of migration patterns into Montana during the study period may deepen the understanding of the links developed between a person's past and present home.

A detailed examination of the specialized connections would also add to our understanding of urban linkages. For example, the link between Butte and Phoenix warrants more investigation into the possible copper mining connection during the late 1800's. Does this link result from control of the industry in both regions by the same companies or people? A second example is Spokane's strong linkages with Missoula. Butte and Helena, even though they are within 150 miles of Missoula, have only minimal connections with Spokane. Further study in this area should address the importance of how initial connections influence later patterns. Are some linkages maintained just because they were established early in a center's development? A third specialized link needing further study is the mining connection between Butte and Duluth. Is the strong influence of the Northern Pacific hauling ores east from Butte the only factor involved in establishing this link?

An intrastate approach might also increase the understanding of Montana's urban development. A study of this type would lend itself very well to Montana given the state's decentralized nature and the regional variation found in this study. A variety of sources could be used including domestic incorporation records, newspaper advertising, and banking records. The economic factors within each Montana center could be assessed to understand the influence of each economic specialization on frontier development. An analysis through time would provide further insight into changes experienced by a maturing urban center.

A regional approach may also prove valuable to understanding the frontier urban development of the Great Plains/Rocky Mountain region. Many factors indicate the possible benefits of this approach, especially in the western states. The interior West contains larger states than the eastern United States, with fewer and more widely-spaced urban centers possibly resulting in the development of distinctive linkage patterns. Another

consideration for using a regional approach is to remove the limitations of today's state boundaries to define the study area. These lines sometimes correspond to the limit of an urban center's major influence but often times they do not, especially during frontier periods. For example, in this study, Missoula was more connected with Washington and Oregon than were the other centers in Montana, while the influence of Fort Benton and Great Falls extended into southern Canada. Billings and Miles City also were economic centers for areas of western North Dakota and northern Wyoming. Gathering data from these regions outside the state may offer more insight into the types of influences and linkages that affected the growth of an urban center.

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APPENDICES

APPENDIX A
NEWSPAPERS EXAMINED

Table 4. Newspapers used for place-name data collection.

City	Newspaper	Date	Day
Miles City	<u>The Yellowstone Journal</u>	1-8-80	Th
		4-10-80	Sa
		7-10-80	Sa
		10-9-80	Sa
Billings	<u>The Daily Gazette</u>	1-11-87	Tu
		4-12-87	Tu
		7-11-87	M
		10-11-87	Tu
	<u>The Billings Gazette</u>	1-7-98	F
		4-8-98	F
		7-8-98	F
		10-7-98	F
	<u>Billings Daily Gazette</u>	1-8-09	F
		4-8-09	Th
		7-7-09	W
		10-6-09	W
Butte	<u>Butte Miner</u>	1-9-77	Tu
		4-10-77	Tu
		7-10-77	Tu
		10-9-77	Tu
		1-11-87	Tu
		4-13-87	W
		7-12-87	Tu
		10-14-87	F
		1-6-98	Th
		4-12-98	Tu
		7-7-98	Th
		10-11-98	Tu
		1-6-09	W
		4-7-09	W
Fort Benton	<u>The Benton Record</u>	6-30-09	W
		10-8-09	F
		1-12-77	F
		4-13-77	F
		7-6-77	F
		10-5-77	F

Table 4. (continued).

City	Newspaper	Date	Day
Great Falls	<u>Great Falls Tribune</u>	1-8-87	Sa
		4-9-87	Sa
		7-12-87	Tu
		10-9-87	Th
		1-12-98	W
		4-6-98	W
		7-10-98	Su
	<u>Great Falls Daily Tribune</u>	10-9-98	Su
		1-7-09	Th
		4-7-09	W
		7-9-09	F
		10-7-09	Th
Helena	<u>Helena Independent Record</u>	1-9-77	Tu
		4-12-77	F
		7-11-77	W
	<u>Helena Independent</u>	10-9-77	Tu
		1-9-87	Su
		4-5-87	Tu
		7-6-87	W
		10-6-87	Th
		1-6-98	Th
		4-8-98	F
		7-12-98	Tu
		10-6-98	Th
	<u>Helena Independent Record</u>	1-6-09	W
		4-8-09	Th
		7-7-09	W
		10-7-09	Th
Missoula	<u>Weekly Missoulian</u>	1-9-77	W
		4-13-77	F
		7-13-77	F
		10-12-77	F
		1-21-87	F
		4-15-87	F
		7-15-87	F
		10-14-87	F

Table 4. (continued).

City	Newspaper	Date	Day
Missoula (continued)			
	<u>Daily Missoulian</u>	1-12-98	W
		4-7-98	Th
		7-8-98	F
		10-10-98	M
		1-7-09	Th
		4-8-09	Th
		7-8-09	Th
	<u>Weekly Missoulian</u>	10-8-09	F

APPENDIX B
EXAMPLE OF NEWSPAPER DATA RECORDS

Helena Independent			
10-6-98			
Vol. LXIV #96			
N 17 cab 10			
	Transport	Goods & Services	Gen. Econ.
Elkhart, Ind.		/	
NYC		////	/
Philadelphia		//	
Chicago	///	/	
Rosale, NY		/	
Agb/St. Paul	HTT ///	/	
SF		/	
Ogden	///		
Granger	/		
SLC	/		
Denver	/		
Omaha	//		
KC	///		
Portland	//		
Duluth	/		
Spokane	/		
Seattle	/		
Tacoma	/		
Milwaukee	//		

Figure 38. Tally sheet used to identify type of newspaper place-name mention.

APPENDIX C

EXAMPLES OF COMPUTER STORED INCORPORATION DATA

Thesis Data		This is Card 743
Company Montana Gold Placer Mining Company	Date 7-9-06	
Outstate BOO Spokane, WA Chicago, IL	MT BOO Missoula	
Capitalization \$1,000,000	Business Type Mining	
   go to card #		

Figure 39. Example of incorporation data storage computer card.

cards

	total #	%	
Missoula	39	10.3	City
Spokane	106	03.8	Outstate
Mining	487	00.8	Type
1904 to 1914	650	00.6	Date Period

[show list](#)[print card](#)[print list](#)[new search](#)

Figure 40. Example of incorporation analysis computer card.

<u>Field 8</u>	<u>Field 7</u>	<u>Field 6</u>	<u>Field 4</u>	<u>company</u>	<u>thesis number</u>
Shoe Manufacturer	Butte	6-16-98	Minneapolis	North Star Shoe Company	thesis card 422
Mining	Butte	9-22-98	New York City	Johnston Mining Company	thesis card 429
Brewing	Butte	10-1-98	St. Louis	Anheuser-Busch Brewing Association	thesis card 430
Lumber	Butte	3-22-99	Spokane	Western Lumber Company	thesis card 444
Banking	Butte	3-30-99	Baltimore	Fidelity and Deposit Company of Maryland	thesis card 445
Fruit Wholesaling	Butte	4-17-99	Los Angeles	The Southern California Fruit Exchange	thesis card 446
Meat Packing, Livestock	Butte	5-8-99	Chicago	Hammond Packing Company	thesis card 447
Finance	Butte	5-10-99	New York City	American Surety Company of New York	thesis card 448
Mining	Butte	7-26-99	Jersey City, NJ	Butte-New York Copper Company	thesis card 455
Slaughter House, Livestock	Butte	9-8-99	Chicago	Swift and Company	thesis card 458
Utilities	Butte	12-2-99	Jersey City, NJ	Butte Lighting and Power Company	thesis card 465
Mining	Butte	12-14-99	Spokane	Smoke House Copper Mining Company	thesis card 466
Utilities	Butte	12-22-99	Jersey City, NJ	Montana Power Transmission Company	thesis card 467
Explosives	Butte	1-20-00	San Francisco	The Giant Powder Company, Consolidated	thesis card 468
	Butte	4-17-00	Jersey City, Nj	Armour and Company	thesis card 473

Figure 41. Example of computer printout for incorporation data.

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