RISE AND FALL OF THE COWBOY: TECHNOLOGY, LAW, AND CREATIVE DESTRUCTION IN THE INDUSTRIALIZATION OF THE FOOD INDUSTRY

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ABSTRACT

Long cattle drives from Texas to Kansas railheads marked the beginning of the Industrial Revolution in the American food industry. Lasting only a little more than ten years, they illustrate the forces of Creative Destruction at their beginning and at their end. They occurred because two technologies, railroads and refrigeration, made it feasible to transport a surplus of beef cattle on ranches in Texas to eastern cities, where the demand for beef was exploding. They ended because four other technologies, steel-bladed plows, windmills, barbed wire fences, and epidemiology, made other forms of cattle husbandry, slaughtering, and packing more efficient. Property and labor law shaped the cattle drives, and the absence of formal legal institutions on the range gave rise to self-help enforcement activities that became the stuff of hundreds of fanciful books, movies, and television series. The range "wars" that broke out in Wyoming and elsewhere were not only about property conflicts, but also about labor market grievances as well, as cowboys cast their lot with settlers against increasingly absentee large-scale cattle interests resisting Creative Destruction by cutting cowboy compensation.

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I. INTRODUCTION

> Accommodations for a large influx of people are being made by the hotels and restaurants, and with a view to the adage of "live and let live." The agents of the AT&SF road at this point are gentlemen of integrity. The stockyards are commodious and capable of accommodating a large number of cattle. A general effort is being made to make Dodge City an attractive point for the Texas cattle dealers, and our united citizens send forth their greeting to our Texas neighbors inviting their presence to our community. The adage of "live and let live" was a necessary business philosophy for trade with the Texans. Dodge City merchants knew that the newly arrived cowboys and cattlemen expected the company of women, plenty of whiskey, and a chance to lay a few bets of the faro and monte tables. "Shooting up the town just for fun" was also a Texas Cowboy's privilege if he was man enough to try.[1]

Cowtowns like Dodge City were built largely as "playgrounds" for cowboys.[2]

But they also sought a better class of folks:

INDUCEMENTS OFFERED TO ACTUAL SETTLERS!

Prospects of the town better than any other in the upper Arkansas Valley!

FREE BRIDGE ACROSS ARKANSAS RIVER!

The town a little over one year old, and

CONTAINS OVER SEVENTY BUILDINGS!

GOOD SCHOOL, HOTEL, ETC. AT&SF RR DEPOT IN THE TOWN.

Dodge City town company
Ford County Kansas.[3]

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1. FREDRIC R. YOUNG, DODGE CITY: UP THROUGH A CENTURY IN STORY AND PICTURES 53 (1972) (quoting and explaining an advertisement in the *Dodge City Times*).

2. CHRISTOPHER KNOWLTON, CATTLE KINGDOM: THE HIDDEN HISTORY OF THE COWBOY WEST 41 (2017).

3. YOUNG, *supra* note 1, at 26 (reproducing advertisement).

DODGE CITY TOWN COMPANY.
Town lots for sale!
Prices to suit all parties!
Apply to W. S. Tremaine
secretary and treasurer
at Dr. Teal McCarty's drugstore[4]

Both types of outreach—the one to cowboys, the other to permanent settlers—worked and set up a conflict between the two constituencies.

But 15 years later:

> I do not think I ever saw a business that was as prosperous as the cattle business up to 1884 and 1885 that went down as quick and fast, with no confidence left in it at all. Range husbandry is over, ruined, destroyed. . . . The big guns toppled over. The small ones had as much chance as a fly in molasses.[5]

> For these young men, the ignominy of failure was unforgettable. Many felt they had wasted the first five to ten years of their business careers. Worse, many of them . . . had borrowed heavily from their father . . . . To lose their investors' money was bad enough; to lose a father's was mortifying.[6]

The industrialization of the food industry in the United States began with cattle drives from Texas[7] to railheads in Kansas, from where the cattle moved by rail to consolidated slaughterhouses and packinghouses in Chicago, from where they were shipped by refrigerated railroad cars to eastern markets. The rise and demise of the cattle drive illustrate the phenomenon of Creative Destruction in the realization of a modern economy. Property law, technological innovation, and entrepreneurship displaced the old with new agricultural practices, and then, as completely, swept away the new practices and replaced them with something else.

An excess supply of cattle existed in Texas after the Civil War. Migration of families and young men to Texas from the Deep South, escaping the disruption of the war and Reconstruction, complemented the excess supply

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4. *Id.* at 27 (reproducing advertisement).

5. KNOWLTON, *supra* note 2, at 240–41 (quoting multiple sources on the collapse of the cattle industry in Wyoming).

6. *Id.* at 236 (describing situation in Wyoming after the "Big Die Up"); HELENA HUNTINGTON SMITH, THE WAR ON POWDER RIVER: THE HISTORY OF AN INSURRECTION 35–48 (1966) [hereinafter WAR] (describing the great die up of the winter of 1886–1887, resulting in loss of up to ninety percent of herds).

7. *See id.* at 154 (describing Round Rock, Williamson County, Texas, near Austin, as "cradle of the cowboys").

of cattle with surplus labor. The building of railroads westward past the Mississippi River after the war offered a way to get the cattle to markets in eastern cities where the demand for beef was growing rapidly. Refrigeration technology made it possible to slaughter the beef and pack it closer to the supply, thereby reducing transportation costs. Texas ranchers, encouraged by promoters, jumped at the chance to supply the appetite of eastern urban masses for beef.

But the success of the cattle drives ensured their doom. High rates of return on investment drew more capital and suppliers into the market. They cultivated herds further north, closer to railheads, and farther away from the small, fenced farms being established by homesteader farmers. Bringing cattle north from Texas was growing much more difficult because of fragmenting property interests arising from homesteading and the establishment of legal regimes and legal infrastructure of courts and lawyers to enforce trespass claims by farmers against the cattlemen. Struggles over labor costs and compensation structures factored into the demise of the drives in the form of conflicts over property as the cowboys became homesteaders.

This Article focuses on a particular phase in the industrialization of the American food industry – the development of systems to transport beef from ranges in Texas to eastern and international markets and then, within ten or twenty years, the demise of the phenomenon of cattle drives, replaced by other methods of production.

Other aspects of food industrialization are interesting, but this one commands particular attention because of the role of two technologies—railroading and refrigeration—which gave rise to the cattle drives, and the role of four other technologies—the steel plow, windmills, barbed wire, and epidemiology—which killed off the cattle drives. As well, the popular image of the western cowboy herding thousands of heads of cattle and then letting off steam in railheads like Dodge City, Kansas, invites attention to the labor markets that fueled the phenomenon of cattle drives, which lasted only about ten years.

The Article explains why the drives started and why they ended, both phenomena representing the Creative Destruction of changes in factors of production and the production functions that combined them. It explores where the cowboys came from and where they went later in their lives. The working-level cowboys were not very literate, and so their first-person stories are not very numerous.[8] Others, however, participated in essentially the same

8. E.C. "Teddy Blue" Abbot's autobiography is an exception. It provides rich detail of the life and career of a boy who began herding cattle at age fourteen and ended up as a small rancher in Wyoming. *See generally* E.C. "TEDDY BLUE" ABBOTT & HELENA HUNTINGTON SMITH, WE POINTED THEM NORTH: RECOLLECTIONS OF A COWPUNCHER (1976).

labor market but had skills that enabled them to hold other jobs: shooting skills, which enabled them to be buffalo hunters and lawmen, gambling skills which enabled them to make a living running gambling tables, and entrepreneurial skills and relaxed morals which permitted them to run houses of prostitution. Wyatt Earp and his brothers were examples of young men with few skills who became buffalo hunters, gamblers, and lawmen. Bat Masterson was a buffalo hunter and a lawman. Doc Holliday was a gambler. Because of the romanticism of the old West and of these particular occupations, biographical information about these individuals and others like them abounds.[9] The Article extrapolates from their experiences to characterize the low-skilled labor force in general.

The Article begins by placing the cattle drives in the context of the U.S. Industrial Revolution, explaining how it compared with the Industrial Revolution in the other two basic human needs: clothing and housing. Then it shows how Creative Destruction worked on the factors of production in the beef industry, first leading to the rise of the cattle drives, and then dragging them down to oblivion. This part focuses on particular technologies and economic phenomena that reshaped production functions in the industry. Then, Part IV considers the law's role in the transformative processes, arguing that property law and conflicts expressed as conflicts over property largely obscured underlying conflicts between cattlemen and cowboys.

II. INDUSTRIAL REVOLUTION IN THE FOOD INDUSTRY

The Industrial Revolution occurred in the United States in the nineteenth century, beginning with the production of clothing, one of the three necessities of life, alongside food and shelter. Spinning and weaving had been mechanized in New England by the 1820s, and the textile industry was the largest American industry by 1890.[10] A second necessity of life, shelter is not industrialized, even now. Most houses are built by hand, although some structural elements are prefabricated, as are basic building materials like fiberboard and sheet rock. The tools, however, have advanced, pneumatic nail drivers replacing hammers, and power saws replacing handsaws. The food industry now is highly industrialized, with as many interdependent pieces as the

9. A search of the amazon.com books section on January 22, 2019, for "Wyatt Earp" produced 101 pages of book titles. A search for "Bat Masterson" produced fifteen pages. A search of the movies and TV section produced a couple of dozen hits for Bat Masterson and more than sixty hits for Wyatt Earp.

10. *See generally* Henry H. Perritt, Jr., Stitching Up Labor Markets: 200 Years of Worker Adjustment to Innovation (Apr. 13, 2019) (unpublished manuscript) (on file with author) (analysis of worker adjustments to serial revolutions in textile industry technology).

clothing industry. Industrialization of the food industry, however, started a half-century later than industrialization of clothing production.

A modern consumer takes for granted a wide variety of well-known brands of canned food in large supermarkets, along with many different cuts of refrigerated meat and seafood, fresh produce, and fruit. The age of being able to shop online for food is dawning, as well. None of this existed or was possible 150 years ago. Meat, fresh fruit and vegetables, and canned and dried food were sold in separate shops. Selections of canned food were quite limited and accompanied by lingering concerns about safety of the canning process.[11] Meat on the table required daily trips to the butcher shop and prompt preparation before the meat could spoil. Almost everything was locally sourced.

The transformation of food production and distribution involves a complex interplay of technological, legal, economic, and sociological forces leading to industrialization of all parts of the food industry. Canning had emerged as a possibility for preservation by the early part of the nineteenth century,[12] and pickling (salting) had been practiced to preserve meat products for a century or more.[13] More recently, techniques for freezing food and the diffusion of refrigerator technology into virtually every home made long-term storage possible.

Meanwhile, mass communications technologies and consolidation of capital markets led to grocery-store chains and nationwide brands like Quaker Oats and Kellogg. Grocery stores emerged around the turn of the twentieth century, with chain stores like A&P providing dry grocery products such as canned goods and dry staples (butchers and green grocers were separate), and the self-service store resulting from Clarence Saunders' Piggly Wiggly stores in Memphis in 1916.[14]

Rising standards of living depend upon increases in productivity of the factors of production: land, labor, and capital. These productivity increases are enabled by innovation, resulting from new technologies and

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11. *See* Tom Geoghegan, *The Story of How the Tin Can Nearly Wasn't*, BBC NEWS (Apr. 21 2013), https://www.bbc.com/news/magazine-21689069 (describing history of canned meat and 1853 scandal of spoiled canned beef, which led to lingering mistrust of safety of canned meat).

12. *See* Ruth Levitt, *Tin Cans & Patents*, PROLOGUE, Fall/Winter 2013, at 61, 61.

13. *See* Sam Hilliard, *Hog Meat and Cornpone: Food Habits in the Ante-Bellum South*, 113 PROC. AM. PHIL. SOC'Y 1, 4 (1969) (explaining that virtually all meat was salted or pickled to preserve it); Margaret Walsh, *Pork Packing as a Leading Edge of Midwestern Industry, 1835–1875*, 51 AGRIC. HIST. 702, 714 (1977).

14. Ashley Ross, *The Surprising Way a Supermarket Changed the World*, TIME (Sept. 9, 2016), http://time.com/4480303/supermarkets-history/ (tracing origins of the supermarket to Clarence Saunders' Piggly Wiggly in Memphis).

entrepreneurship.[15] The ongoing process of innovation represents *Creative Destruction*, a term coined by Austrian economist Joseph Schumpeter.[16] Creative Destruction represents the displacement of an old way of doing business – steamboats – with a newer way of performing the same function – railroads. Thus, word processing software for general-purpose computers displaced typewriters, and Xerox machines displaced carbon paper.

Sometimes, as in these examples, Creative Destruction displaces entire industries. In other cases, the basic organization of activity remains, but the tools change. This is the case with construction of houses, where the work is organized by relatively small enterprises, as it was 100 years ago, but the pneumatic nail driver has replaced the hammer and the power saw has replaced the handsaw. The Industrial Revolution in the clothing industries introduced new types of machinery such as the power loom and the spinning mule and spinning jenny. Deployment of these machines gave rise to new forms of organization—the textile mill.

The food industry has experienced as much Creative Destruction as any other industry, and innovation has taken place in the food industry mainly through the combination and mutual reinforcement of discrete technologies that changed the productivity of the basic factors of production. This Article looks at the beginnings of the Industrial Revolution in food, concentrating on a ten-to-fifteen year period after the Civil War when cattle drives were the norm for getting beef from the pasture to the dinner table.

Two rounds of Creative Destruction bracketed the cattle-drive period.[17] The revolution was put in motion by two new technologies, railroads and refrigeration, that enabled entrepreneurs to take advantage of specific market conditions, a growing demand for beef in eastern cities, and a surplus of Longhorn cattle on Texas ranges. Later, other specific technologies, the steel plow, windmills, and barbed wire fences, enabled the entrepreneurial instincts of millions of homesteaders to close off the open ranges on which the cattle drives depended.

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15. For a discussion on the different characterizations of factors of production, see *infra* notes 18–28.

16. *See infra* notes 22–28 and accompanying text (explaining Schumpeter's theory).

17. These were not the only two rounds of Creative Destruction affecting the beef industry and the food industry more generally. One of the later rounds, the displacement of the Beef Trust's centralized slaughtering and packing operations in Chicago linked to a rail-based distribution system by refrigerated trucks and cinderblock packinghouses, is discussed briefly below. *See* SHANE HAMILTON, TRUCKING COUNTRY: THE ROAD TO AMERICA'S WAL-MART ECONOMY 135–62 (2008) (describing how refrigerated truck trailer and independent drivers undermined the Beef Trust and led to the decentralization of cattle feeding, slaughter, and packing in the second half of the twentieth century). But those other rounds are beyond the scope of this Article, which focuses on the two rounds that defined the cattle drive.

A good analytical framework for understanding early industrialization of the beef industry is based on an examination of the industry's traditional factors of production: land, labor, capital, technology, and entrepreneurship.[18] The early stages in the Industrial Revolution of the food industry involved changes in all these factors of production and in transportation. But land law and policy were at the heart of the changes. As the cattle drive phenomenon rose and then declined, property law enabled the entrepreneurial impulses that drove change.

Millions of acres of publicly owned land were free for exploitation, even as they were available for private appropriation. Originally, almost all the land in the plains states was in the public domain, technically owned by the United States government, but free for use by anyone without fear of trespass liability. Grass suitable for feeding longhorn cattle grew everywhere. Cattle ranchers essentially got their cattle feed for free and did not have to invest capital in acquiring land for breeding and fattening their cattle.

Not much capital was required. Nature "financed" the feeding on the open range. The cattle handled reproduction and calf production themselves without much attention. Working capital for the cattle drives was limited to chuck wagons, food, ammunition, and horses; the cowboys provided their own gear. More important was capital in the form of railroads pushing west and investment in transformation of the distribution of beef to eastern urban markets. Labor was readily available for cattle drives after the Civil War, as teenagers and twenty somethings flocked from the devastation of the war and Reconstruction in the Deep South to Texas, where the drives began.

The wide open, flat, spaces provided straightforward transportation routes and the ability of the longhorn cattle to walk long distances meant zero tariffs for much of the transportation. There were obstacles which imposed costs, of course: rivers to cross, strays never found, stampedes threatening injury to cattle and cowboy, deadly thunderstorms, but all of these could be handled by a small band of young cowboys, each paid thirty dollars per month, led by a skilled foreman paid fifty dollars per month.[19]

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18. Most economists define factors of production as land, labor, capital, and entrepreneurship. *See The Economic Lowdown Podcast: Factors of Production*, FED. RES. BANK ST. LOUIS, https://www.stlouisfed.org/education/economic-lowdown-podcast-series/episode-2-factors-of-production (last visited Mar. 27, 2019). Many add technology as a factor. *See Factors of Production*, SHMOOP, https://www.shmoop.com/economic-principles/factors-production html (last visited Mar. 27, 2019); *see also* Terry L. Anderson & P. J. Hill, *The Evolution of Property Rights: A Study of the American West*, 18 J.L. & ECON. 163, 172–73 (1975) [hereinafter *Evolution of Property Rights*] (noting that the production function for open-range ranching differed from earlier forms).

19. *See* LaWanda F. Cox, *The American Agricultural Wage Earner, 1865–1900: The Emergence of a Modern Labor Problem*, 22 AGRIC. HIST. 95, 103 (1948) (noting that cattle raising was a high-wage portion of the food industry; usual cowboy wage was twenty-five to thirty dollars per month); WAR, *supra* note 6, at 103 (noting importance and shortage of good foremen).

Eventual settlement of the prairie by farmers would change all this. It blocked ready transportation because now more and more of the land was in private ownership rather than in the public domain. A herd crossing private land committed repeated acts of trespass. The boom in cattle drives meant that more and more of the land was overgrazed, making it difficult to find suitable food and water for the moving herds. By the end of the period, the advent of barbed wire meant that settlers could fence their land, physically excluding the cattle in addition to relying on the law of trespass to keep them out. The result was greatly increasing costs for the transportation of cattle from the Texas ranches where they bred to the railheads.

The decline of the cattle drives was animated by conflict between farmers and cowboys.[20] The intensity of the conflict was exacerbated by sectional differences originating in the Civil War. Most of the cowboys were from Texas, to which they had moved from core states of the Confederacy. The homesteaders, by statute, were northerners; anyone who had fought for the Confederacy was barred from making a homesteading claim. This set the stage for bitterness between Yankee and Rebel as they asserted competing claims to the land.

The legal regimes that mattered in the rise of the cattle drives and their demise moved from a position of informal norms enforced extralegally to institutional enforcement of common-law doctrine to statutory crystallization of rules channeling the use of real property. During the early part of the era, no institutions existed to enforce formal law.[21] At the end of the era, small farmers could harass open-range ranchers with dozens of trespass actions and rely on courts and sheriffs to enforce their judgments.

III. CREATIVE DESTRUCTION AT WORK

Joseph M. Schumpeter explained how the process of Creative Destruction is a byproduct of business cycles.[22] Subsequent economists have refined it,[23] but the qualitative explanation Schumpeter offers intuitively dovetails

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20. *See* Karen R. Merrill, *Whose Home on the Range?*, 27 W. HIST. Q. 433, 433–34 (1996) (describing tension between homesteaders and ranchers as ranchers sought federal protection of grazing rights).

21. "During the first year of Dodge City's existence, even though the town company was organized, the still unincorporated city had no elected or appointed officials; the county government was not yet organized, and consequently there were no courts, jails, or official law enforcement nearby." YOUNG, *supra* note 1, at 45. "Dodge City was not incorporated until November 2, 1875, and for three years was without elected city officials. Ford County was not organized until 1873, at which time County officials were elected." *Id.* at 20.

22. *See* JOSEPH A. SCHUMPETER, THE THEORY OF ECONOMIC DEVELOPMENT 212–55 (1983).

23. Paul Samuelson and other pure Keynesians disdain business-cycle theory, although Samuelson's theory accommodates the phenomenon of recurring business cycles. Different business-

nicely with the common understanding of Silicon-Valley-fueled innovation and bursting bubbles. Within Schumpeter's model, the excess labor, capital, and other generally slack resources in business-cycle troughs (recessions or depressions) eventually attract the attention of a handful of entrepreneurial leaders who have ideas for new combinations of factors of production.[24] They begin innovating, and their success pulls other, slightly less talented, entrepreneurs into the field. Eventually, a "swarm" of entrepreneurs have entered the market who find growing demand for their innovative products. This puts in motion a general "secondary wave" of economic growth.[25] The surge of entrepreneurial innovation almost always occurs through new firms – alongside and at the expense of established firms.[26]

Schumpeter's account closely matches what happened in the beef industry. Technologies enabling the rise of the cattle drives were technologies of transportation and manufacturing. Technologies ending the drives were technologies of land use. Creative Destruction during the ascent of the drives replaced the dispersed, fragmented ranches with much larger scale enterprises and replaced small, local slaughtering and packing facilities with large national and regional ones. New technologies and entrepreneurship in rail transportation and refrigeration mobilized surplus resources and led to a boom. Creative Destruction during the decline of the drives replaced large, open-range ranching operations with much smaller fenced ranches and feedlots located closer to railheads, slaughterhouses, and packing plants. Overinvestment[27] and diminishing returns[28] led to a bust, even as other technologies, such as barbed wire fences, steel plows, and windmills changed production functions.

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cycle theorists emphasize exogenous shocks that trigger business cycles, or conversely endogenous dynamics. Exogeneity signifies an event outside the economic system; endogeneity signifies an event or dynamic interaction within the system. Schumpeter acknowledges that exogenous shocks such as wars can play a role in business-cycle behavior, but his model shows why business cycles occur even without exogenous shocks from internal dynamic interactions. In qualitative terms, Solow's theory holds that new technology increases returns to capital while decreasing net depreciation, thus stimulating growth in the Solow-Harrod-Domar model.

24. SCHUMPETER, *supra* note 22, at 225–26 (explaining how the "swarm" forms).

25. *Id.* at 226 (explaining dynamics of boom).

26. Southern textile mills employing newer technologies than New England mills were an example. Tesla is an example, vis-à-vis the established automobile companies, as is Spotify vis-à-vis the traditional music labels. Netflix and Amazon movie and TV production vis-à-vis the traditional movie studios and drone operators vis-à-vis traditional helicopter operators are other examples. In every case, the sponsor of the innovation is a new enterprise just entering the market, not a legacy enterprise.

27. An enormous inflow of capital from Britain enlarged the scale of open-range ranching and helped bring about its demise.

28. The most important diminishing return was the decline in productivity of public land.

One should not misunderstand the effect of the second round of Creative Destruction. It put an end to the cattle drives, but it certainly did not put an end to the flow of beef from western feeding grounds to eastern markets. Rather, it channeled production and transportation into smaller herds, managed on fenced ranches, flowing eventually to smaller packinghouses nearby.

A. MAJOR STEPS ENCOURAGING THE CATTLE DRIVES

The characteristics of both supply and demand after the Civil War reinforced each other to cause a reinvention of how beef got from the pasture to the dinner table.

1. *Consumer Tastes*

After the Civil War, the demand for beef in the eastern cities was strong. Consumers had shifted their tastes from pork to beef;[29] the Civil War had blocked the supply of beef, where it had not diverted it to feed troops; and the population itself had been boosted by immigration and industrialization. During the nineteenth century, American tastes for meat had shifted from pork to beef.[30] Part of the reason was that, until the Industrial Revolution in food, beef was harder for ordinary families to acquire than pork.[31] Methods for preserving beef were limited and unsatisfactory;[32] salting pork to preserve it had been perfected for a long time.[33] Diseconomies of scale also favored meats other than beef. An 800-pound steer, once slaughtered, was far too large for even a large household to consume before most of the meat spoiled.

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29. KNOWLTON, *supra* note 2, at 16 (describing shift in consumer taste from pork to beef and runup in retail prices for beef to forty to fifty dollars for a steer worth four dollars in Texas); Hilliard, *supra* note 13, at 3 (asserting that the primary meat in the South, as in the rest of the country, was pork).

30. *See* ROGER HOROWITZ, PUTTING MEAT ON THE AMERICAN TABLE: TASTE, TECHNOLOGY, TRANSFORMATION 22–24, 32–34 (2006) (describing consumer preferences for beef); Robert E. Gallman, *Pork Production and Nutrition during the Late Nineteenth Century: A Weighty Issue Visited Yet Again*, 69 AGRIC. HIST. 592, 600 (1995) (inferring from data that pork was an "inferior product," the demand for which fell as incomes rose, during the second half of the nineteenth century); Hilliard, *supra* note 13, at 7 (explaining some chicken was consumed, but it was regarded as a something of a delicacy).

31. HOROWITZ, *supra* note 30, at 5–6 (explaining that early cooking methods favored salted meats, which favored pork).

32. *Id.* at 20, 24 (explaining that beef did not salt well because of its fibrous nature; pickled beef, however, could last for up to a year, like pickled pork; pickled beef was kept in a brine solution until ready to eat); Hilliard, *supra* note 13, at 5 (observing that most beef was eaten fresh, because it was hard to preserve in a manner that met tastes).

33. After slaughtering, all meats were salted, salted and smoked, or pickled to preserve them. Walsh, *supra* note 13, at 714; *see also* Hilliard, *supra* note 13, at 4 (describing methods for salting and pickling pork on family farms and in pork packing houses of the Ohio River Valley).

Large cuts of beef were awkward to transport and could not be packed tightly enough for the transport to be efficient.

Local farmers saw the potential for beef and offered it through local butchers.[34] It was popular but had to be prepared quickly before it spoiled.[35] It also was expensive. Lower priced beef would find a ready market.

2. *Excess Supply of Cattle*

Large-scale cattle ranching developed in Texas, as Americans migrating from the lower South imitated Mexican ranchers in the use of horses to manage large herds of cattle.[36] The arid climate favored stock that was tough, and thus the "Texas Longhorn" that had evolved from wild cattle originating with the Spanish Consquistadores became the favorites.[37] The Texas prairie was ideal for raising these cattle because they could graze on the open spaces ten months out of the year, had ample access to water from natural watercourses, and had enough salt from natural sources.[38]

The defining characteristics of Texas cattle ranching included:

- large numbers of cattle per farm;
- open ranges, accompanied by branding and periodic round-ups;[39]
- overland drives to market;[40]
- frequent use of labor beyond the family unit;[41] and
- management of cattle on horseback.[42]

Before the Civil War, American cowboys had been migrating into Texas, where they imitated Mexican cattle production methods, including the use of wide-open and highly fertile grassland and the use of men on horseback to manage large herds of cattle. During the war, union blockades and eventual

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34. *See* HOROWITZ, *supra* note 30, at 19–20 (explaining pre-refrigeration organization of beef raising and butchering as extremely localized and involving small enterprises); *see also id.* at 33 (reporting that most consumers bought beef from a butcher located within 1000 feet, or two blocks, from that consumer's dwelling).

35. *See* Walsh, *supra* note 13, at 704 n.2 (reporting that beef was driven short distances to markets; salted pork satisfied consumer tastes, not salted beef).

36. Terry G. Jordan, *The Origin of Anglo-American Cattle Ranching in Texas: A Documentation of Diffusion from the Lower South*, 45 ECON. GEOGRAPHY 63, 63–64 (1969).

37. *Id.* at 70; *see also* LOUIS PELZER, THE CATTLEMEN'S FRONTIER 37 (1936) (reporting that origins of Texas cattle herds were cattle left by Spanish conquerors).

38. Jordan, *supra* note 36, at 70.

39. *Id.* at 74.

40. *Id.* at 75–76 (briefly detailing origins of cattle drives occasioned by limited local markets).

41. *Id.* at 78 (explaining the need for labor beyond "husky sons").

42. *Id.* at 71.

control of the Mississippi River basin blocked delivery of these Texas Longhorn herds to markets both in the South and in the urban East.[43] After the war, Confederate veterans and others displaced by the war or by Reconstruction headed west and added to the numbers engaged in raising cattle. The result was a growing supply of beef looking for new pathways to markets.

3. *Railroads*

After the Civil War, as supply and demand forces encouraged movement of cattle grown in Texas to eastern markets, the cattle drive developed. Extension of the railroads was the first step. The prewar possibilities for getting meat from Texas range to Boston butcher shop were not particularly attractive. The cattle could be driven, they could be hauled by wagon, or they could be shipped by river and ocean.[44] All of these methods were prohibitively expensive and resulted in substantial shrinkage of the beef by the time it reached the market, either because cattle died or because they lost weight.

The westward extension of the railroads greatly expanded the alternatives.[45] Before and during the war, few railroads existed west of the Mississippi River; indeed, only a handful provided through routes from eastern cities as far as the Mississippi. The few that existed were fiercely fought over as a part of war strategy.[46]

During the war, President Lincoln placed great emphasis on the strategic importance of building one or more transcontinental railroads.[47] After the war, Lincoln, and then after Lincoln's death, President Grant,[48] similarly placed a high priority on completion of the transcontinental rail route. The Congress provided generous subsidies and English capital flooded the corporate treasuries of a variety of rail enterprises.[49]

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43. *See* KNOWLTON, *supra* note 2, at 16 (asserting that population of longhorns had exploded in Texas "because they had been left largely on their own during the war").

44. *See id.* at 17 (describing early cattle drives to markets in Missouri, California, and Washington, D.C.).

45. PELZER, *supra* note 37, at 40–41 (reporting that extension of railroads into Kansas and subsidence of Indian threat put the cattle drive phenomenon into motion; 35,000 cattle moved to Abilene in 1867).

46. *See* J.R. PERKINS, TRAILS, RAILS, AND WAR: THE LIFE OF GENERAL G.M. DODGE 87–93 (1929) (describing importance of railroads to military strategy of both North and South and Confederate strategy of destroying railroads in region).

47. *Id.* at 5 (noting Lincoln's support for railroads even before he was President).

48. President Andrew Johnson was so preoccupied with controversies over Reconstruction, including his impeachment, that he did not have a coherent western railroad policy.

49. STEPHEN E. AMBROSE, NOTHING LIKE IT IN THE WORLD: THE MEN WHO BUILT THE TRANSCONTINENTAL RAILROAD 1863–1869 83–100 (2000) (the "Birth of the Union Pacific"; describing federal initiatives during the Civil War to get transcontinental railroad construction started).

Because of the disruption of the war and the Reconstruction period that followed it, rail development was slower in the South than in the North. There was much talk of the Texas and Pacific Railroad project that would run from New Orleans through Louisiana and Texas to the West Coast, but it was having difficulty getting off the ground.[50] Furthermore, it did not run directly to northern cities or to major junction points like Chicago and St. Louis, meaning that rates from Texas to the markets would be higher.[51]

Further north, however, first in Missouri, Iowa, and Minnesota, and then in Kansas, Nebraska, the Dakotas, and Wyoming, surveyors, graders, and rail gangs were hard at work pushing west.[52] By the late 1860s, railheads had reached the eastern boundaries of Kansas, Nebraska, and the Dakotas and had begun to traverse westward across those states. While the congressional subsidies represented a mostly coherent grand plan to encourage transcontinental railroad construction, the actual planning of routes, allocation of capital, and construction was chaotic.[53] All these activities were fragmented among many separate corporate entities, many of them local in origin and identity. Corruption was rampant, which drained capital into unproductive activities and undermined investor confidence. Overoptimistic promotion both to investors and to potential shippers and passengers led to inflated expectations. Many roads, once built, were unsustainable.

Of particular importance to the evolution of the beef and pork industries were the Union Pacific and the Atcheson, Topeka and Santa Fe. The Union Pacific ran westward from Omaha through Nebraska and Utah.[54] The Santa Fe ran westward from Kansas City through Kansas and into Colorado. The Union Pacific extended its influence further south by acquiring the Kansas and Pacific Railroad, which had begun earlier, but struggled before it completed its route through Kansas, about 100 miles north of the Santa Fe route.[55]

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50. PERKINS, *supra* note 46, at 247–56 (describing travails of Texas Pacific project); *see also* Southworth v. United States, 30 Ct. Cl. 78, 82 (Ct. Cl. 1895) (describing demise of Texas Pacific Railroad and reversion of its lands to the United States Government).

51. *See* David Galenson, *The Profitability of the Long Drive*, 51 AGRI. HIST. 737 (1977) [hereinafter *Profitability*] (reporting that it was cheaper to drive cattle from Texas to northern ranges than to ship them by rail from Texas).

52. *See* AMBROSE, *supra* note 49, at 167–92 ("The Union Pacific Across Nebraska").

53. PERKINS, *supra* note 46, at 196–242 (describing construction of Union Pacific and the associated controversies over politics and finance). The television series Hell on Wheels accurately depicts some of the machinations.

54. *See* AMBROSE, *supra* note 49, at 267 (noting first herd of Texas cattle reaching Union Pacific line in North Platte, in western Nebraska, in 1868).

55. *See* GEORGE KENNAN, RAILROAD TYCOON: E.H. HARRIMAN, A BIOGRAPHY 66–67 (1922) (describing Kansas-Pacific and successful campaign by Jay Gould to get the Union Pacific to acquire it to block ruinous competition). The Santa Fe strategically planned its route through Kansas to lie south of the Kansas and Pacific, through Dodge City, so that cattle drives would

4. *The Cattle Drives*

The idea of driving Texas cattle to railheads in Kansas originated with an entrepreneur: Joseph G. McCoy. McCoy convinced the railroads to erect pens and to build sidings to receive the cattle and then launched a publicity campaign to persuade the cattle owners and drive foremen to drive their cattle to the railheads.[56] The first railroad to respond was the Hannibal and St. Joseph, which cooperated with McCoy in establishing an Abilene to Chicago route.[57] The result was a facility which could load twenty railroad cars in an hour. Before long the Abilene was shipping 1000 cars annually. A typical cattle car accommodated eighteen steers.[58]

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encounter the Santa Fe first and elect to ship on it rather than the Kansas and Pacific. KEITH L. BRYANT, JR., HISTORY OF THE ATCHISON, TOPEKA, AND SANTA FE RAILWAY 32–34 (1974).

56. KNOWLTON, *supra* note 2, at 34–37 (describing efforts of and difficulties encountered by McCoy).

57. *Id.* at 36 (describing construction of pen for 3000 cattle and a scale that could weigh up to twenty cattle at a time).

58. *Id.* at 37; LOUIS FRANKLIN SWIFT & ARTHUR VAN VLISSINGEN, THE YANKEE OF THE YARDS: THE BIOGRAPHY OF GUSTAVUS FRANKLIN SWIFT 6 (1927) (reporting that original rail transportation from head of train drive to eastern markets involved "slatted rail cars"). In a book he wrote some years later, McCoy summarized the promotional efforts to bring cattle drives to Abilene:

> [A] systematic effort [began] to secure a large drive of Cattle from Texas in 1868. To this end a systematic scheme of advertising in Texas was prosecuted with energy and without regard to expense. To every Texas man whose address had been obtained previous and to all whose address was subsequently obtained by reference to commercial agencies, directories of cities and county officials, including every newspaper in the State, to all these were addressed a circular setting forth the contemplated purpose of the Abilene enterprise and inviting the drovers and stockmen of Texas to bring their herds of marketable cattle to that point. Assuring all who would do so, of a cordial reception, fair dealing, protection from mob violence, perfect equality upon the market and in the use of shipping facilities; a concerted joint effort to get buyers for their stock; in short to give to the stockman of Texas what he did not before have, to-wit: A market in which he could sell any and all the live stock which he might bring thereto, and if failing to find a purchaser on the prairie for his stock, he could ship them unmolested to any point or market he might choose. The papers throughout the state of Texas copied into their columns the circular letter, and many of them gave the subject favorable editorial notices. . . .
>
> [I]t was necessary to do an equal amount of advertising throughout the Northern States and Territories proclaiming to the Northern cattle world the expected concentration of Texas cattle at Abilene. In order to accomplish this result access was had to the advertising columns of every newspaper widely read by Northern cattle men. . . .
>
> Thirty days before the cattle began to arrive at Abilene, in the spring of 1868, quite a delegation of buyers were at the Drovers' Cottage, a hotel erected for the special accommodation of cattle men, awaiting the advent of the cattle, when trade would open. To while away the tedious hours till the cattle came, resort was had to divers expedients, such as reading newspapers, talking over business projects and prospects, telling stories, perpetrating jokes, etc. . . .
>
> [R]ival towns both east and west of Abilene . . . sent to the crossing of the Arkansas river from two to ten drummers, or runners, for their respective points, to induce the drovers to turn to the right or left and go to other towns instead of Abilene. To counteract this choir of solicitors Abilene sent one young man to represent and to protect her

In the end, a number of viable railroads emerged that linked plains states to the East, even before any of them reached California. This new western railroad presence was just what the cattlemen in Texas needed: a cheaper and quicker mode for getting their cattle to the eastern markets. First, of course, they had to figure out how to get the cattle from their Texas ranches to the Kansas and Nebraska railheads. Assuming they could do that, they chose a particular railhead according to its proximity – further south was better than further north because it cut the length of the necessary cattle drive. And a railroad closer to an established trail like the Chisholm Trail or the Santa Fe Trail reduced the difficulty of getting the cattle to the railroad. Except for the trails and the railroads, the prairie was desolate—plenty of room for cattle drives.[59] The few settlements that existed catered to the needs of buffalo hunters. Dodge City, Kansas, originally called "Buffalo City," was an example.

The initial choices based on those factors were Wichita, Abilene, and Ellsworth, Kansas. As increasing settlement, farming, and elaboration of property law in those places intensified, a subject considered in Section IV.A, transaction costs in these original cattle drive towns pushed the herds further westward into less settled territory as the railroads penetrated that territory.

New candidates recognized that the buffalo were disappearing and that buffalo-hunter towns needed a new raison d'être, or they would die. The business leadership of Dodge City actively advertised the town's wide-open character, its open range, and its lax enforcement of laws regulating gambling, prostitution, and public drunkenness. It already had a robust gambling, drinking, and prostitution infrastructure to serve the buffalo hunters, and it was just a matter of finding new customers. The cowboys associated with the cattle drives provided them.

Dodge city, however, was about the limit of westward shifts of the cattle drives. Dodge was in the middle of the prairie, which provided thousands of acres of grassland for cattle to fatten on while they waited for their trains to the East and recovered from the exertion of the cattle drive to Dodge. Not

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> interests . . . . [T]he young man sent out by Abilene was the same one who was sent alone in July '67, to proclaim the good tidings of Abilene to the wandering and mob-fearing drovers. . . .
>
> Thus Abilene as a cattle market was at last established beyond cavil or doubt. The demand for cars for eastern shipment reached over one thousand during the month of June, and the hitherto incredulous Kansas Pacific Railroad Co. was taxed to its utmost capacity to furnish needed cars. It was compelled to transform many of its flat cars into cattle cars, by putting a frame work on them.

JOSEPH G. MCCOY, HISTORIC SKETCHES OF THE CATTLE TRADE OF THE WEST AND SOUTHWEST 114–16, 122–24 (1874).

59. *See* KENNAN, *supra* note 55, at 66–68 (describing Union Pacific as running through desolate land from Omaha to the Rocky Mountains).

much further west, the prairie ends, and is replaced by the foothills of the Rocky Mountains, offering much less in the way of satisfactory pasturage.

The new technologies of transportation and refrigeration not only enabled economical delivery of beef from Texas and other western ranges to eastern markets in the United States; they also enabled delivery from the same sources to markets in Britain.

The western cattle drive was a major phenomenon in the movement of meat for ten years.[60] Once a cattlemen-entrepreneur had picked the place where he would transship his cattle, whether it be Wichita, Ellsworth, or Dodge City, he organized his cattle drive. The distance to the railhead was about 1500 miles, and experience taught that cattle could move twelve to fifteen miles a day without suffering too much weight loss or the thinning of herds because of deaths.[61] Thus each drive could be expected to take two to three months.[62] The cattlemen had considerable experience with annual roundups of cattle from the range.[63] A roundup was a microcosm of a cattle drive.

One of the purposes of grazing cattle on the open range was to feed them and to fatten them as they grew. Another purpose, just as important, was to allow them to breed. Cows would calve each year, the timing depending on when they were exposed to bulls. If a rancher wanted to start a three-month cattle drive in June, he would want the calves to be weaned, which would mean that they should have been born by the previous December.[64] That

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60. PELZER, *supra* note 37, at 45 (reporting that five million cattle moved up trails from Texas from 1868 to 1884).

61. *See* ANDY ADAMS, THE LOG OF A COWBOY: A NARRATIVE OF THE OLD TRAIL DAYS 10 (Penguin Books 2006) (1903) (reporting plans for herd to travel fifteen miles per day); KNOWLTON, *supra* note 2, at 20 (reporting that drives typically covered fourteen to fifteen miles per day with a break for lunch).

62. *See* ADAMS, *supra* note 61, at 5 (reporting that cattle drive was expected to take five months). The shorter distance from Texas ranges to Dodge City, compared with Montana, makes the estimate in the text about right. *See* KNOWLTON, *supra* note 2, at 17 (drive could take three to six months).

63. The genesis for these roundups has been described this way:

> Roundups were conducted in the spring for the branding of that year's calf crop and again in the fall to select cattle that were to be sent to market. These roundups could be conducted by individual cattle companies, but collective action captured economies of scale. In the words of one early cowhand, "When a stock owner wished to work his cattle, he would send word to his neighbors and all would round up, get their stock, brand calves, turn loose and drive home."

Terry L. Anderson & Peter J. Hill, *Cowboys and Contracts*, 31 J. LEGAL STUD. 489, 502 (2002) [hereinafter *Cowboys and Contracts*].

64. Calves can be weaned at six to seven months. *See How Long Should You Wean a Calf for Before Placing It Back on the Same Pasture With Its Pregnant Mother? The Weaning Will be Done the End of November or the First of December.*, EXTENSION (Mar. 6, 2008),

means that the cows should have been bred 283 days before that, in March.[65] So a spring roundup would have been ideal for branding the new calves born during the winter before they were weaned and for exposing the cows to the bulls to start the next cycle.[66]

So the factors of production for the drive were pretty clear even as the first ones were organized.[67] Each drive needed a foreman, a cook,[68] and about fifteen cowboys.[69] The trail boss navigated the route and supervised the operation.[70] Each cowboy needed three to ten[71] horses.[72] The cowboys typically provided their own riding and camping equipment.[73] Everyone needed to be appropriately armed against wild animals, rustlers,[74] and Indians.

With this labor force and capital for the horses, the chuckwagon,[75] and the food, the drive could accommodate about 1500 cattle, and potentially up to twice that number,[76] which would fetch total revenue of $50,000 or more once they reached Dodge City and had been fattened up.[77] The tasks of the

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https://articles.extension.org/pages/39469/how-long-should-you-wean-a-calf-for-before-placing-it-back-on-the-same-pasture-with-its-pregnant-mot.

65. Gestation (the length of time between breeding and birth of a calf) in cattle averages 283 days. *How Long Does a Cow's Pregnancy Last?*, EXTENSION (Feb. 19, 2008), https://articles.extension.org/pages/39353/how-long-does-a-cows-pregnancy-last.

66. *See* Heather Smith Thomas, *Reproduction 101: Basics of Breeding Cows and Heifers*, HEREFORD WORLD, Mar. 2008, at 36, 38 (cow should be allowed at least forty-five days after calving before being bred again).

67. David Galenson, when he was an economics graduate student at Harvard, developed a quantitative production function for long cattle drives, concluding that they produced very high rates of return, which then declined by 1885. *See Profitability*, *supra* note 51.

68. Each drive had its own cook wagon and enough food for the first part of the journey. Additional food was bought en route. *See* ADAMS, *supra* note 61, at 12–14 (describing plans to buy additional supplies and horses along the way on credit as necessary).

69. KNOWLTON, *supra* note 2, at 19 (driving 1000 head of cattle required at least eight men; a trail boss, a cook, and a wrangler for the remuda); PELZER, *supra* note 37, at 38 (reporting early drive with twenty cowboys and three herds).

70. KNOWLTON, *supra* note 2, at 19 (reporting that trail boss rode a few miles ahead to find water holes and good places for grazing).

71. ADAMS, *supra* note 61, at 9 (reporting remuda of ten horses per cowboy, with two extra for the foreman, a cook, a horse wrangler, and thirteen cowboys).

72. KNOWLTON, *supra* note 2, at 17 (drovers needed four or five horses each).

73. ADAMS, *supra* note 61, at 14–15 (asserting that cowboys provided their own gear, comprising a saddle, a bridle, reins, a bit, a slicker, spurs).

74. *See id.* at 37–39 (describing confrontation between groups over ownership of cattle).

75. KNOWLTON, *supra* note 2, at 19 (mess wagon was converted Conestoga wagon drawn by horses and loaded with canned and powdered food, a Dutch oven, cooking utensils, and a barrel of drinking water).

76. PELZER, *supra* note 37, at 46–47 (reporting different sizes of herd, ranging from 1700 to 7000; costs approximating thirty to forty cents per head for the drive).

77. ADAMS, *supra* note 61, at 12 (describing cattle-drive contract as calling for 1000 female, 2000 male cattle, with fifty extra of each class to cover losses; enough to cover one-million-pound contract); PELZER, *supra* note 37, at 45 (reporting price of eight to ten dollars per head in Texas, driving expense of four dollars per steer, and price of twenty-eight dollars in Abilene after being

labor force associated with each herd were to keep the cattle together instead of wandering off, to protect the herds and the personnel from various kinds of attacks, and to protect the property interests of the cattlemen in the cattle[78]—a subject discussed below.[79]

After the cattle were sold,[80] the foreman paid off the cowboys[81] and returned to Texas with the rest of the money, in cash.[82] This section oversimplifies things, of course. Some of the herds stopped at the first railhead they reached and were sold. Others stopped and grazed locally to gain weight before being sold and shipped. Others of the herds went right on through Dodge or stopped there only momentarily before moving further north to railheads on the Kansas Pacific or the Union Pacific mainline in Nebraska, or to the Northern Pacific in Wyoming. Other herds remained in Dodge, intended to be the starting point for herds that would not be tied to Texas. For the most part, however, the cattle that reached Dodge City waited there for the train to go east.[83]

5. *Labor Markets*

Nearly 50,000 cowboys worked the cattle herds in the 1870–1880 time period.[84] The labor markets were quite fluid. That enabled the level of production and its location to shift with changes in technology and other determinants of the economics of cattle production, such as rail rates.

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grazed until fall); *see also* PELZER, *supra* note 37, at 58 (in 1875–1876, a quarter of a million cattle were transshipped from Dodge City, the quintessential cattle town).

78. *See* ADAMS, *supra* note 61, at 16–17 (describing duties and activities of cowboys on a five-month cattle drive from Texas to Montana).

79. *See id.* at 15–16, 19. Adams' diary describes not a cattle drive from Texas to Dodge City, but one further west to Montana. It is, nevertheless, an unusually useful and concrete day-by-day account of a cowboy's life on the cattle drive, of the economic logistics of the drive, with no reason to think a drive over the western route differed materially from a somewhat shorter drive to Dodge City and to other places in Kansas.

80. The organization of sales of the cattle was varied. In many cases, the cattlemen, represented by their foremen, sold the herd to commission merchants at the railhead. LOUISE CARROLL WADE, CHICAGO'S PRIDE: THE STOCKYARDS, PACKINGTOWN, AND ENVIRONS IN THE NINETEENTH CENTURY 28 (2003) [hereinafter PRIDE] (describing growth of commission merchant broker business, which paid growers for stock, paid for rail transport to Chicago, and sold to highest bidder).

81. KNOWLTON, *supra* note 2, at 40 (reporting that cowboy was paid in gold after herd was corralled in stockyard or pastured on outskirts of town).

82. *Id.* at 24 (describing return trip by trail boss with $12,000 in gold).

83. *See* TOM CLAVIN, DODGE CITY: WYATT EARP, BAT MASTERSON, AND THE WICKEDEST TOWN IN THE AMERICAN WEST 28–37, 52–58, 73–84, 92–101 (2017) (reporting 25,000 cattle loaded at Dodge in 1876 and 50,000 in 1877).

84. KNOWLTON, *supra* note 2, at 28 (claiming that total of 40,000 cowboys worked on the range, tending the cattle during the drives and while they grazed).

Teenagers and young men in their twenties owned the labor market for the cattle drives – or at least they owned the supply side of it.[85] Many of them could not read or write and lacked other skills that would open up broader opportunities in the labor market. Their alternatives were two in number: continue to work on the family farm, a fate they found boring and backbreaking, or become cowboys, where they could find excitement fighting Indians, riding horses, and subjugating herds of hundreds or thousands of cattle, all in cooperation with other athletic young men their own age.[86] It wasn't much of a choice, and they flocked to Texas by the thousands.[87] The duration of a career as a cattle drover was limited, however, and career advancement nonexistent. What was an exciting physical challenge at age eighteen became an increasingly difficult chore after age thirty.[88]

The labor market was bifurcated. Civil War veterans, now approaching thirty years of age, were the foremen.[89] Younger boys, in their late teens and early twenties, were the cowboys.[90] Smaller and more compact men were

85. *See* WAR, *supra* note 6, at 24 (cowboys were young, hardly older than schoolboys).

86. MARK LAUSE, THE GREAT COWBOY STRIKE: BULLETS, BALLOTS & CLASS CONFLICTS IN THE AMERICAN WEST 54–64 (describing life and duties of cowboy). Before the cattle drives, mining, driving and guiding wagon trains, and buffalo hunting were the dominant attractions for those fleeing the family farm. Then, the railroads pushed west under the patriotic mandate intensified by the Civil War to unify the country and tie California to the rest.

87. Some were drawn or remained there because of the possibility of gay relationships. *See* Michael Lyons, *Same-sex Love in the Saddle: The Homosexual World of the American Frontier*, XTRA (Apr. 4, 2017), https://www.dailyxtra.com/same-sex-love-in-the-saddle-the-homosexual-world-of-the-american-frontier-73296 ("[T]he 19th-century American frontier was one of the gayest periods in the country's history, sexually speaking . . . ."). Some historical speculation exists that Jesse James, Wyatt Earp, and Doc Holliday were gay. *See* Andrew C. Isenberg, *The Code of the West: Sexuality, Homosociality, and Wyatt Earp*, 40 W. HIST. Q. 139, 146–147, 151–153 (2009) (discussing ambiguous sexuality of nineteenth century; reviewing evidence that Jimmy Cairns and Wyatt Earp had a sexual relationship; considering evidence that Wyatt Earp and Doc Holliday had a sexual relationship); Bob Boze Bell, *Warren Earp's Lover?*, TRUE W. BLOG (Oct. 23, 2015), https://truewestmagazine.com/was-warren-earp-gay/ (quoting Doc Holiday's "wife" that Warren Earp's death was "the result of an altercation between two individuals involved in an unnatural male relationship"); Andrew Isenberg, *Author Responds to 'Wyatt Earp' Review*, CHI. TRIB. (July 19, 2013), https://www.chicagotribune.com/entertainment/books/ct-xpm-2013-07-19-ct-prj-0721-letter-to-editor-wyatt-earp-response-20130719-story.html (referring to controversy over whether Isenberg's book says that Doc Holliday and Wyatt Earp were in gay relationships and that Earp had an earlier gay relationship with Jimmy Cairns, a fellow Wichita policeman); Casey Tefertiller, *B.S. at the O.K. Coral*, TRUE W. (Sept. 15, 2015), https://truewestmagazine.com/b-s-at-the-o-k-corral/ (referring negatively to claim that Cochise County (Tombstone, AZ) deputy sheriff Billy Breckenridge and outlaw leader "Curly Bill" Brocius were gay).

88. LAUSE, *supra* note 86, at 65 (noting difficulties for cowboys in their thirties).

89. James C. Simmons, *Confessions of a Cowboy: An English Intellectual on a Texas Cattle Drive*, AUSTIN CHRON. (May 26, 2000), https://www.austinchronicle.com/books/2000-05-26/77310/ (summarizing experience of young man on a cattle drive). *See* ADAMS, *supra* note 61, at 5 (describing "vagabond nature" that drew sixteen-year-old to the cattle range after his family moved to Texas from Georgia after Civil War).

90. One author summed up media depictions of cowboys like this:

preferred, because heavier men were hard on the horses. The youngsters were vulnerable to the temptations of all teenagers: wanting to appear tough, wanting to raise hell to impress their peers, and thinking themselves as immortal.[91] The job was dangerous, of course,[92] but the danger was part of the allure.

The job was attractive to young men who had nothing; the entry barriers were extremely low.[93] The money that could be earned from one occupation or another fluctuated seasonally[94] and with exhaustion of natural resources.[95]

> Cowboys were undesirable, unskilled vagabonds that often couldn't write much more than their brands of canned food (which they memorized for entertainment), much less their name or any kind of record of happenings. This left much of the Cowboy culture to be recorded by outsiders like Owen Wister, who immortalized their antics as the pinnacle of masculinity that anxious urban men from the East idolized.

Jacob Dagit, *The Queer Frontier: American Cowboys and LGBT Subtext*, SHREDDED, http://shredded-mag.com/the-queer-frontier-american-cowboys-and-lgbt-subtext/ (last visited Apr. 2, 2019) (explaining how proximity, absence of females, and custom made it easy for gay relationships to develop and not arouse opprobrium).

91. Although the domain name for the website indicates the extreme point of view of the author, mitigating credibility, one commentator posits the following:

> Most cowboys were boys, literally, who were deemed expendable because they were orphans, immigrants, Indians, half-breeds, or former slaves, with little education, no job skills, and no one to miss them if they happened to be killed on the job.
>
> There is a myth that cowboys were drawn heavily from among the ranks of dispossessed and displaced former Confederate soldiers, as well as former U.S. cavalrymen. Actually, these sources supplied range bosses, and many of them were literally former slavedrivers. . . .
>
> Cowboys were heavily exploited and usually brutally treated until such time as they became able to beg, borrow, buy or steal a gun. They were used not only as cheap and disposable labor, but also for sexual release by older and stronger men. Such adult men used the pretext of a scarcity of women to establish enforced homosexual relationships in remote camps and ranches comparable to the relationships for which today's prisons are notorious.

Merritt Clifton, *The True History of Cowboys as Sex Slaves*, SHARK, http://www.sharkonline.org/index.php/rodeo-family-values/751-the-true-history-of-cowboys-as-sex-slaves (last visited Apr. 2, 2019). Somewhat more credible is CHARLES A. SIRINGO, A TEXAS COWBOY OR, FIFTEEN YEARS ON THE HURRICANE DECK OF A SPANISH PONY 10–34 (1886) (describing series of odd jobs to be able to eat before Texas-born author became a cowboy at age fifteen).

92. KNOWLTON, *supra* note 2, at 30 (describing "astonishing number" of ways to get hurt or killed).

93. *Id.* at 28–29 (outdoor work with a physical challenge was appealing to young men; meals and a horse were provided; drover did not need education or a place to live; genuine male camaraderie was part of the job; all a cowboy needed was a saddle, a bedroll, and a poncho).

94. Cowboy work was seasonal, peaking when the cattle drives occurred and declining precipitously in the winter months, when only about one-third of the workforce was required to check up on the herds to make sure they had not been trapped by snowbanks or ice in waterways and to repair fencing as it became more common. Cox, *supra* note 19, at 103 (generally describing labor market for cowboys: usual wage was twenty-five to thirty dollars per month; employment for only eight months per year). The opportunities for gamblers in cattletowns like Dodge City were much greater during the cattle-drive season than off-season. Gambling returns depended on the number of cowboys eager to spend the money they earned on cattle drives. They were in town at the end of the drive but did not stay long.

95. Not only mining involved exhaustion of resources. An even more dramatic example is the near extermination of the buffalo, extinguishing opportunities for buffalo hunters.

As a result, the typical low-skilled worker bounced around from town to town and region to region, sometimes hunting buffalo, sometimes guarding freight shipments, sometimes driving cattle, sometimes gambling, and for some, sometimes serving as law-enforcement officers.[96]

The exits from the cowboy profession were few in number and poorly marked.[97] A handful of cowboys could use their skills with horses and firearms to become deputy sheriffs, deputy town marshals, deputy U.S. marshals, or hired guards for stage lines, railroads, or ranchers. But those opportunities were few and far between and likely to get one killed. Opening a saloon, a gambling parlor, or a house of prostitution did not require many skills, but it required capital and overcoming the contempt that the largely northern townies held for the largely southern cowboys, whom they perceived as barely civilized. Anyway, such opportunities in cowtowns depended on there *being* cowtowns, which, in turn, depended on a continuation of the cattle drives.

The pathway of choice was to accumulate a small herd of cattle and set up a small ranch.[98] That path was open to the lowliest cowboy – if he had the character qualities of reasonable thriftiness and an ability to withstand the temptations of instant gratification presented by the cowtowns.[99] It was improbable that he could save enough cash to buy his own ranch and herd, even at homesteader prices,[100] but an economic fringe benefit of working a cattle drive, known as "find," let him build a herd without any cash outlay. The concept of find was rooted in the related practices of roundups and branding. One rancher distinguished his cattle from those of other ranchers by the uniqueness of his brand.[101] Cattle of different brands freely intermingled on

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96. CLAVIN, *supra* note 83, at 28–37, 52–58, 73–84, 92–101 (describing early life of Wyatt Earp before he went to Dodge City); *id.* at 38–51, 59–72, 85–91 (describing early life of Bat Masterson before he went to Dodge City).

97. KNOWLTON, *supra* note 2, at 242–43 (describing lack of opportunities for cowboys as they grew older).

98. *Id.* at 206 (describing influx into Wyoming of former cowboys hoping to establish themselves as small-time ranchers and farmers); *see* WAR, *supra* note 6, at 27–28 (noting that sophisticated large operators, like Charles Goodknight, allowed cowboys to run small herds with the bigger herds as a way of building their own operations).

99. Cox, *supra* note 19, at 104 (asserting that the cowboy was "a notoriously easy spender"). "This pay check vanished quickly during his occasional splurges in tow and disappeared almost as soon on horses, spurs, saddles, and sombreros. His pride centered in his prowl in the saddle." *Id.*

100. One dollar and twenty-five cents per acre. Southworth v. United States, 30 Ct. Cl. 78, 85 (Ct. Cl. 1895) (noting that Land Act of 1820, § 3, ch. 51, 3 Stat. 566, fixed price of sale of public lands at $1.25 per acre).

101. *See Evolution of Property Rights*, *supra* note 18, at 173 (noting change in branding norms and laws).

> There was a time when brands were relatively few and a man could easily remember who owned the different ones, but as they grew more numerous it became necessary to record them in books that the ranchers could carry in their pockets. Among the first laws

the range and were separated into distinct herds belonging to different ranchers during periodic roundups, which initially occurred several times a year, but began to coalesce into one major roundup in the spring preceding cattle drives.[102]

During the winter months, the cows would calve. A roundup would include many calves still attached to their mother, not yet weaned. Under the customs of the range, those calves became the property of the owner of the cow and were branded the same as the mother. Some calves escaped branding before they were weaned. Running free, and unbranded, they were known as

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> enacted by territorial legislatures were those requiring the registration of brands, first in counties and later with state livestock boards.

Id. As cattle drives became common, the branding laws evolved to require brands on every cow driven through a territory, and to impose stiff penalties on those who killed an unbranded calf or failed to register the transfer of a brand. *Id.* at 174; *see also id.* at 175 (describing Wyoming law codifying date and manner of annual roundup).

102. The relationship between rodeos and mavericks has been described by several commentators and courts:

> About the watering places once or twice each year rodeos have been held. At these times the different cattle owners would be given notice of the holding of the rodeo and they attended for the purpose of separating their cattle from the common herd. . . . The calves were then branded and any unidentified or unclaimed animals, called "mavericks," were turned over to the cattle man who had the rodeo in charge, as his perquisites.

Robinson v. Bledsoe, 139 P. 245, 246 (Cal. Dist. Ct. App. 1914) (reversing finding of tenancy in common in formerly open range); *see also* State v. Dickerson, 71 So. 347, 349 (La. 1916) (mavericks are "[b]ullocks and heifers that have not been branded, and are unclaimed or wild"; reinstating conviction for theft for branding another's cattle). "Roundups were conducted in the spring for the branding of that year's calf crop and again in the fall to select cattle that were to be sent to market." *Cowboys and Contracts*, *supra* note 63, at 502. These roundups could be conducted by individual cattle companies, but collective action captured economies of scale. In the words of one early cowhand:

> When a stock owner wished to work his cattle, he would send word to his neighbors and all would round up, get their stock, brand calves, turn loose and drive home. But so many outfits had come in and rounded up the stock, and ginned them over so much, that they could never get fat. This continual working over and over of cattle was detrimental to the business, and those interested . . . wanted some plan or system laid down.

Id.

One of the first actions of the various cattle associations was to set roundup dates and to coordinate areas. Starting in 1874, Wyoming stock growers organized a voluntary roundup system that depended for its enforcement on a refusal to cooperate with those who were not a part of the group. Teddy Blue, one of the early cowboys, recalls:

> The whole thing was run according to a system. By '84, the entire range in southern Montana and Wyoming was all organized into roundup districts, bounded by certain mountain ranges and streams. There were no fences, and while each outfit would have a line that it would call the boundary of its own range, the cattle drifted, and they all ran together more or less. All the outfits belonging to any one roundup would get together in the spring with their wagons and work through the territory, creek by creek.

Id.

"Ownership of a calf was determined by the brand on the cow." *Id.*

"mavericks."[103] Cowboys entitled to find could obtain custody of these mavericks and claim them as their own.[104]

The practice was subject to obvious abuses, limited only by the cowboys' loyalty to the ranches that employed them.[105] Cowboy efforts to find, capture, and brand the mavericks diverted them from their duties to the herd at large. The temptation was strong to identify a calf as a maverick when it rightfully should be branded for the employing rancher; it all depended on whether the calf had been weaned—and that was in the subjective perception of largely unsupervised cowboys. Once the cowboy had assembled a small herd, he was free, most of the time, to intermingle his cattle with his employer's larger herd. Tending to his own cattle diverted him once again from tending his employer's cattle – although as long as all of the cattle comprised one undifferentiated herd, tending to the one automatically tended to the other.

As massive inflows of capital and increasing economies of scale widened the psychological distance between rancher and cowboy, thereby depersonalizing it, loyalty diminished on both sides. Ranchers came increasingly not only to view find as the legalization of theft (rustling),[106] but also as a mechanism that enabled the establishment of more small ranches and farms, further blocking their hopes to access what had previously been public land.[107] For the cowboys, eliminating find as a part of their compensation package removed the one available pathway to economic and personal independence as they got older.

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103. *See* WAR, *supra* note 6, at 51–53 (defining and describing mavericks).

104. *See* LAUSE, *supra* note 86, at 14 (noting cowboy rights to mavericks); Andrew P. Morriss, *Miners, Vigilantes & Cattlemen: Overcoming Free Rider Problems in the Private Provision of Law*, 33 LAND & WATER L. REV. 581, 657–58 (1998) [hereinafter *Miners, Vigilantes & Cattlemen*] (describing different ways of handling maverick cattle—the most confused and explosive problem of range regulation). "Branding a maverick, in the minds of the generality, was a crime without moral turpitude, if a crime at all—like violating the prohibition law or cheating on an expense account." *See* WAR, *supra* note 6, at 54.

105. KNOWLTON, *supra* note 2, at 126–27 (explaining how combination of mavericks and homesteading provided an exit for cowboys but also provided opportunities to cheat).

106. "[M]avericks were just a special case of the more general problem of rustling." *Miners, Vigilantes & Cattlemen*, *supra* note 104, at 658. The Wyoming cattlemen's association pushed the Maverick Law of 1884 through the territorial legislature which it controlled. *See* WAR, *supra* note 6, at 27; 1884 Wyo. Terr. Sess. Laws 148–52 ("An ACT to further encourage and protect the interests of stock growers."); *id.* at 150–51 (providing that mavericks shall be controlled by foreman of roundup and sold by him at auction).

107. *See Miners, Vigilantes & Cattlemen*, *supra* note 104, at 667–69 (describing controversial maverick law in Wyoming, which gave ownership of all mavericks to the cattlemen's association); WAR, *supra* note 6, at 59 (describing action by Colorado, Wyoming, and Montana to regulate mavericks; only Wyoming gave authority to private cattlemen's association); *id.* at 84 (describing 1888 reforms in Wyoming maverick law, shifting enforcement to state agency).

By the mid-1880s, the center of gravity of cattle ranching had moved northward. Wyoming was now as important as Texas. The flow of British capital and British managers into Wyoming greatly enlarged the scale of ranching and depersonalized it. It also led to an excess supply, which depressed prices and led to overgrazing, putting the squeeze on the profitability of open-range cattle production. One immediate result was to try to reduce costs of the wage bill for cowboys and to deal with the perception that cowboys were stealing cattle from the cattlemen.

Most of the cattlemen agreed to promulgate a collection of twenty-nine rules, among which were a prohibition on cowboys running their own herds while they worked for another, a prohibition on cowboys running their own horses with the herds' ramadas, a prohibition on cowboys laid off for the winter getting free meals and lodging from the ranchers,[108] and a strict prohibition on cowboys branding maverick calves to be added to their own herds rather than to those of the ranch.

Wage reductions were part of the package in many cases, but most cowboys cared a lot more about the other changes—changes which basically made it impossible for cowboys to realize their pervasive dream: graduating from being cowboys in service to another to becoming independent businessmen with their own ranches.[109] For their part, the cattlemen were concerned not only with what they perceived to be widespread rustling, but also the encroachment of small farms and ranches on the open range, a phenomenon that increased when cowboys became homesteaders.

The result was a series of strikes, both in Texas[110] and Wyoming, few of which had any effect. Labor market conditions were adverse to the strikers, strike leadership wasn't competent, and solidarity among the rank-and-file was lacking. By the time cowboy grievances mounted sufficiently to goad cowboys into striking, their numbers were declining. The slack labor market occasioned by a gradual pulling back from open-range ranching meant that striker replacements easily could be found. In the case of the Texas strike, its organizers were so incompetent that they announced the strike for the beginning of the winter, when two-thirds of the workforce was going to be laid off anyway.

The rank-and-file was poorly positioned to withstand a strike of any significant duration. They were immature, and their lifestyles emphasized

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108. *See* KNOWLTON, *supra* note 2, at 227–30 (describing how cowboys survived while being laid off during the winter).

109. Cox, *supra* note 19, at 104 (noting barriers to entry by cowboys wanting to own a ranch: capital costs, exclusion from roundups, absentee rancher opposition).

110. *See id.* at 103–04 (describing strike by 325 cowboys on seven Texas ranches in 1883; work stoppage began before spring roundup and lasted until cowboy savings were exhausted).

blowing off steam with any accumulated savings rather than hoarding it as a strike fund or a nest egg for starting a ranch. The typical pattern was to work for a while, earn some money, and then gamble, drink, and fornicate it away in the cowtowns, going back to work only when it was exhausted. Such behavior is inconsistent with running an effective strike. Cowboy unions did not exist, and so they were not an alternative source of strike funds.

6. *Refrigeration and Consolidation of Slaughterhouses and Packing Houses*

Even as the westward extension of the railroads and the cattle drives was revolutionizing the first part of the beef supply chain, the other end of the chain was in the midst of a revolution as well.[111] Before the Civil War, people who could afford it liked to put beef on the table. They bought it day-by-day from local butchers, who obtained it mostly from local farmers, who maintained small herds.[112] Time was of the essence in moving the beef from the point of slaughter to the table because lack of refrigeration meant that spoilage began as soon as the animal died and continued inexorably through dissection of the beef, through its time in the inventory of the retail butcher, and finally through its travel to the home and the stove. There certainly was no room in this distribution system for long-distance travel from remote ranges.

Four disruptive innovations occurred after the war. The first, of importance but modest impact, was the realization that cleaner butcher establishments would defer spoilage.[113] The second was the realization that much of the beef that was discarded could be sold, significantly changing butcher income statements and enabling lower retail prices.[114] Third was

111. *See* SWIFT & VLISSINGEN, *supra* note 58, at 7 (reporting that Swift's career in meat industry began at age fourteen when he went to work for his brother, a local butcher).

112. *See id.* ("[E]ach community had its little slaughterhouse; butchers hurried meat to customer before it had time to spoil; refrigeration was almost unheard of . . . ."); J. OGDEN ARMOUR, THE PACKERS THE PRIVATE CAR LINES AND THE PEOPLE 17–18 (1906) (inefficiencies and costs of transportation from western pasturage to eastern markets meant that traffic in local meats was confined to local markets); HOROWITZ, *supra* note 30, at 20–21 (explaining that before the Civil War, cattle were driven on the hoof from farms to butchers located near consumers, where they were slaughtered by the butchers using rental facilities in slaughterhouses).

113. Cleanliness deferred spoilage because cleanliness meant fewer bacteria to infect the beef. Bacterial invasion is the cause of food spoilage. *See* SWIFT & VLISSINGEN, *supra* note 58, at 51 (reporting that emphasis on cleanliness in plants deferred spoilage and also attracted consumers).

114. *Id.* at 10–11 (reporting on Swift's innovative use of byproducts of slaughtering).

refrigeration.[115] Fourth was realization of economies of scale greatly accelerated by refrigeration.[116]

Phillip Armour and Gustavus Swift already had pushed the first two innovations by the time their work on refrigeration began to bear fruit.[117] The economies of scale of larger plants resulted not so much from introduction of sophisticated new technologies as it did from careful standardization of good practice, constantly revised to produce greater efficiency, reduce waste, and improve sanitation. These standardized practices could be introduced and enforced more easily in a few large plants than in thousands of small ones scattered over the countryside and urban neighborhoods.

The economies of scale led first to the consolidation of local butcher enterprises,[118] gradually followed by regional consolidation and then movement of the whole activity further west, mainly to Chicago.[119] Chicago was the natural choice for consolidation of beef slaughtering and beef packing operations.[120] It had already emerged by the end of the war as the rail center of the United States.[121] It was a center for salt distribution—linked to preservation of meat—and thus tied to meat packers around the country. Thus, it was a natural place for the streams of cattle on the hoof arriving from the West to converge, and from which the butchered beef could travel to any eastern market.

Refrigeration enabled the economies of scale that Swift and Armour developed, although both had sought to realize scale benefits earlier. Without refrigeration, live cattle already could be moved from the West to the railheads in the Midwest and from there by rail to markets in the East, possibly

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115. ARMOUR, *supra* note 112, at 19 (deployment of a practical refrigerator car was the key step in revolutionizing the delivery of dressed beef).

116. *See* SWIFT & VLISSINGEN, *supra* note 58, at 51–52 (reporting evolution of business from three meat wagons in Cape Cod doing twenty-five dollars of daily business and one shop doing fifty dollars of business over the counter).

117. ARMOUR, *supra* note 112, at 54–55 (emphasizing cleanliness in Armour's branch facilities); HOROWITZ, *supra* note 30, at 27–29 (2006) (describing Swift's influence on meatpacking cleanliness and by-product use); SWIFT & VLISSINGEN, *supra* note 58, at 48–52 (describing Swift's emphasis on cleanliness as a pathway to profits).

118. *See id.* at 118–21 (reporting on early experience that a larger scale of operations pays).

119. *See* HOROWITZ, *supra* note 30, at 26–27 (noting that the initial stages of the nationalization of cattle operations involved shipping live cattle by rail through consolidation centers like Chicago to small-scale butcher operations near consumers).

120. It was obviously necessary to co-locate beef slaughtering and beef packing because, otherwise, refrigerated transport would be necessary between the two, even though after slaughter the product streams separated. *See id.* at 28–29 (describing how Gustavus Swift used his knowledge and experience as a butcher and cattle buyer to follow the supply chain upstream and realize how improvements could be made by concentrating it in Chicago).

121. SWIFT & VLISSINGEN, *supra* note 58, at 26 (reporting that productivity from centralized dressing in Chicago plants was so great that it enabled prices below competition with a substantial margin).

moving through stockyards at transshipment points like Chicago. But moving the cattle from Chicago to eastern markets in cattle cars fed small, decentralized, and fragmented slaughterhouses and packinghouses close to the markets, in addition to transporting waste.

Refrigerating the beef while it was in transit from the Midwest to the East permitted the slaughtering and packing operations to be consolidated and centralized in the Midwest. That, along with vertical integration of the slaughtering and packing functions,[122] delivered the efficiencies reflected in economies of scale.

Refrigeration was primitive and expensive until more than a decade after the Civil War, even though the fact that chilling food could defer spoilage had been well understood for decades.[123] But harvesting ice during the winter or from snowcapped mountains in the West and keeping it from melting until it was needed was a cumbersome and expensive process.[124] Ice houses existed, including those associated with facilities in which beef was stored, but ice houses and ice bunkers were disfavored in beef processing compared to movement of beef from nearby pasturage to retail butchers. A general view prevailed that bringing beef in contact with ice would ruin it.

The principles of mechanical refrigeration by exploiting the thermodynamics of certain types of refrigerant had been well understood since the turn of the nineteenth century.[125] Crystallizing the theory of refrigeration was not enough; practical deployment of the technology depended on development of manufacturing techniques to make the pumps, condensers, and evaporators. And, of course, there had to be a source of power, initially steam.

The technology could not be exploited widely, however, because of limitations on sources of power. The internal combustion engine was a half a century in the future, and the electric motor and electricity distribution grids

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122. *See* Walsh, *supra* note 13, at 713 (explaining economies of scale resulting from vertical integration of slaughtering and packing).

123. Cox, *supra* note 19, at 97–98 (describing shipment of refrigerated fruits and vegetables for distant markets by water and by rail before refrigerator car came into general use).

124. SWIFT & VLISSINGEN, *supra* note 58, at 191–92 (describing challenges in lining up ice supply for refrigerator cars).

125. *See* Improvement in Apparatus for Freezing Liquids, U.S. Patent No. 30,201 (filed Oct. 2, 1860) (describing mechanical apparatus for producing ice). The mechanism of refrigeration requires delivering a substance like ammonia or ether, which are gases at room temperature, in liquid form to an "evaporator" in the cooling unit. Reducing pressure in the evaporator allows the liquid to evaporate into gaseous form, absorbing heat in the process. Anything near the evaporator will be cooled as a result. Then, the gas is routed to a compressor with an interconnected heat exchanger, usually outside at ambient temperature. The compressor compresses the gas into liquid form, which generates heat, which then is dissipated by the heat exchanger before the fluid returns to the cooler to the cooling unit inside. Though the nature of refrigerants and the sources of power for compressors and pumps have changed over the decades, the principle remains the same.

only slightly ahead of it. Steam and water power were the only practical possibilities, and both were bulky, making them entirely unsuitable for employment in vehicles or in anything but the largest manufacturing or processing facilities. Early mechanical refrigeration systems were steam driven and produced ice, which was then used to cool food while it was in storage or being shipped.[126]

Armour, however, was working on refrigerator car technology for the railroads.[127] His designs were feasible enough to be deployed at the cost of about $1000 a car, but the railroads were not interested in investing in them.[128] The use of this technology to revolutionize the food industry further necessitated someone else to take the risk of substantial investment. Both Armour[129] and Swift stepped up to the challenge.

Use of the refrigerator car was greatly delayed by the opposition of the railroads. It was undeniable that the innovation increased the efficiency of slaughtering and dressing the beef before it was transported. Only about sixty percent of the steer was edible; carrying the live steers in cattle cars involved the costs of carrying the forty percent that would not generate revenue and of paying cowboys to ride along and keep the cattle from trampling and smothering each other during the trip.[130] But revenue for the railroads from transporting live cattle was substantial, and the railroads had no interest in decreasing the weight of their cargo by nearly half. They also had no interest in investing in a fleet of refrigerator cars, which would be more complicated than open-flat cattle cars and more difficult to reconfigure for backhaul freight. When Augustus Swift approached them, the railroads rejected his refrigerator car proposition in a common front.[131] Swift did not give up easily, however. He identified the Grand Trunk Western, a much smaller road that

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126. *See* George C. Briley, *A History of Refrigeration*, INSULATION OUTLOOK (July 1, 2006), https://insulation.org/io/articles/a-history-of-refrigeration/.

127. The basic technology was already established. *See* U.S. Patent No. 71,423A (filed Nov. 26, 1867) (describing refrigerator car designed to circulate cool air from ice bunkers at either end of car containing some 800 pounds of ice). Armour made it practicable, initially with respect to transport of fruit and then, of beef. Swift, meanwhile, was adapting the same technologies to movement of dressed beef. *See* PRIDE, *supra* note 80, at 64 (describing early Chicago experiments with refrigeration including with refrigerator cars).

128. *See* ARMOUR, *supra* note 112, at 26 (describing Armour's building of refrigerator cars himself, after railroads refused to do so).

129. *Id.* (presenting arguments justifying activities of Phillip D. Armour, father of the author).

130. *See* HOROWITZ, *supra* note 30, at 29 (noting inefficiencies of shipping live cattle by rail: they had to be fed; most lost weight; many died; and only sixty percent could be used for meat); WAR, *supra* note 6, at 101 (describing duties of cowboys who rode trains with cattle); ABBOTT & SMITH, *supra* note 8, at 5 (same).

131. *See* SWIFT & VLISSINGEN, *supra* note 58, at 183–90 (describing railroad opposition to refrigerator car and Swift's building them himself).

operated largely in Canada, which was interested in penetrating Chicago-based markets.[132] The Grand Trunk jumped at Swift's idea, and before long, blocks of refrigerator cars, which Swift himself built and paid for, were moving dressed, refrigerated beef from Chicago to eastern cities, mostly through Canada. Eventually, the U.S. railroads wanted to share the market and began to participate in hauling refrigerator cars as well.

But finding a railroad to carry the cars was not enough. Wholesale butchers near consumer markets in the East were happy with the status quo.[133] Butchers had a difficult time accepting refrigerated beef that would disrupt their customary ways of doing business and would deprive them of the revenue associated with the initial stages of dressing the slaughtered animals (they retained the business of separating a side of beef into the particular cuts wanted by consumers).[134] Swift and Armour were not discouraged by this opposition, either. Their enterprises were, by then, large enough that they could – and did – construct parallel wholesale butcher networks, bypassing the resistance and taking their increasingly familiar brands of beef directly to consumers in supermarket chains that were beginning to open up.[135]

Swift's contribution centered on deployment of the refrigerator car, elimination of waste in slaughterhouses and packinghouses, and increased attention to sanitation.[136] Armour's contribution centered on developing and then mechanizing the assembly line for slaughtering and dressing beef. Indeed, his assembly line (more accurately described as a "disassembly line") was the model for Henry Ford's automobile assembly line.

Deployment of the refrigerator car made it feasible for the beef to be slaughtered in Chicago and then packed and shipped east without spoiling. For several decades before the turn of the twentieth century, refrigerator car

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132. *Id.* at 184–85 (describing Swift's successful approach to Grand Trunk); HOROWITZ, *supra* note 30, at 29 (noting Swift's achievements in designing refrigerator cars, finding a railroad to haul them, and developing an infrastructure to ice them; complete only by 1878).

133. They were already under some pressure from locals who did not like slaughterhouses in their neighborhoods. *Id.* at 24–25 (explaining how growing population densities pushed beef butchering operations farther and farther away from consumers).

134. *See* ARMOUR, *supra* note 112, at 24–25 (refrigerator car enabled Chicago packers to sell superior cuts of beef at lower prices than those charged by local eastern butchers for inferior cuts of meat).

135. *Id.* at 52–56 (describing Armour system for distributing refrigerated meat through "branch houses" directly to retailers, representing local distribution nodes avoiding butchers); HOROWITZ, *supra* note 30, at 30 (describing Swift's success in developing his own distribution network to bypass recalcitrant butchers and the railroads that supported the butchers); SWIFT & VLISSINGEN, *supra* note 58, at 70–71 (describing Swift's aggressive actions to compete with local butchers who refused to work with him).

136. *See* HOROWITZ, *supra* note 30, at 27–28 (noting Swift's influence in cleaning up the "vile operations" that were slaughterhouses).

technology depended on an infrastructure of ice delivery to various points along the railroad, where the ice and bunkers at the ends of the cars could be replenished. Specialized personnel and specialized private car line companies run by Swift and Armour[137] made sure the proper temperatures were maintained. During this period, ice came to be manufactured in large ice plants operated by steam power. With the advent of small and internal combustion engines after the turn of the century, it became possible to replace the ice bunkers with mechanical refrigeration units in the cars, but the replacement process extended well in the twentieth century; iced refrigerator cars were still being hauled on freight trains in 1976.[138]

B. DEMISE OF THE CATTLE DRIVES

Three technologies—the steel plow, the windmill, and barbed wire—reinforced property law in bringing the cattle drives to an end. The first two made homesteading more productive and thus more attractive to settlers. The third made it feasible for the settlers to exclude the open-range ranchers and their cattle drives.

By the 1880s, substantial amounts of English capital and entrepreneurial energy was flowing into cattle ranges in Montana, Wyoming, and the Dakotas,[139] generally shifting the locus of ranching northward. Railroad links already existed to these parts of America as they were settled. Thus, there was no need to drive cattle for long distances to railheads. They were grown close to the railhead. Even as overgrazing, physical impediments in the form of fences, and fragmented property claims by a multiplicity of farmers were making open-range ranching uneconomical,[140] changes in grain cultivation and production came to the rescue of the beef industry.

137. These companies were involved in the Fruit Growers Express. *Id.*

138. The author was an executive with Conrail during this period and recalls various controversies involving the cars owned and serviced by Fruit Growers Express, the dominant private refrigerator line at the time. *Id.*

139. *See* WAR, *supra* note 6, at 9 ("free grass," few costs, and no capital investment—describing 1878 hype over open-range ranching, which drew huge amounts of English capital).

140. *See* Merrill, *supra* note 20, at 440 (explaining eventual victory of homesteading forces over ranching interests).

1. *Steel-Bladed Plow*

John Deere's steel-bladed plow, along with Cyrus McCormick's reaper[141] and Hiram Moore's combine harvester,[142] increased the yield of wheat and corn production[143] as an infrastructure of railroad grain cars, extending railroad tracks, grain elevators, and futures markets made it possible to transport increased supplies of grain to eastern and international markets with reasonable economic predictability. These technologies encouraged homesteading and farming on the plains, which interfered with open-range ranching. They also resulted in periodic grain surpluses, which could feed cattle in confined spaces as an alternative to grazing plains grasses.

The steel plow eliminated an important impediment to cultivation of the prairie. Prairie sod was much more difficult to break up than the soil of eastern and southern states, which was relatively sandy. The soil of the prairie constituted a thick intertwined set of grass roots. It resisted penetration by the plow, breaking wooden plows, and tended to clump up into sticky masses that would adhere to iron plow blades. The operator had to stop frequently to clean off the blade. Steel plow blades were the answer. Steel was both smoother and less brittle than iron. John Deere's 1837 invention of the steel plow[144] prevailed over earlier attempts to use steel, not only because of his superior metallurgy, but also because he embraced techniques of mass production to deliver it more cheaply than his competitors. His invention permitted casting steel plow blades that were smooth and free from holes or air cells, and thus more suitable for holding a sharp edge. They were considerably tougher than cast-iron blades, which tended to break when they encountered rocks or especially tough soil. With the steel plow, it was feasible and much more efficient for small farmers to reduce the prairie to cultivation of crops. No longer was it suitable only for grazing large herds of buffalo or cattle.

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141. *See* Improvement in Machines for Reaping Small Grain, U.S. Patent No. X8277 (filed June 21, 1834). McCormick's enterprise later became International Harvester.

142. U.S. Patent No. 9,793X (filed June 28, 1836).

143. *See Growing a Nation: The Story of American Agriculture, Historical Timeline—Farm Machinery & Technology*, AG CLASSROOM, https://www.agclassroom.org/gan/timeline/farm_tech htm (last visited Apr. 2, 2019) (providing data showing three- to six-fold increase in agricultural productivity from 1830 to 1890).

144. Improvement in Molds for Casting Steel, U.S. Patent No. 41,203 (filed Jan. 12, 1864).

2. *Windmills*

Aridity of the plains increases as one moves westward toward the 100th Meridian and beyond.[145] Cultivation of crops is infeasible, or at least uneconomical without irrigation. Irrigation was difficult because the aquifers were so far beneath the surface. Deep wells required some method to pump water from those wells. The self-governing windmill was the answer.[146] Without human intervention, one of these windmills could automatically adjust to the wind direction and velocity and pump 150 gallons of water per hour,[147] or 3600 gallons over each twenty-four-hour period. This was sufficient for the irrigation needs of a homestead-sized farm growing wheat or corn. As the windmills spread, word spread about this new aid to homesteading self-sufficiency, encouraging more homesteaders to stake their claims, resulting in the exclusion of more open range from the cattle herds.

3. *Fencing*

Ranchers and farmers had struggled for decades to develop a type of fencing that would keep cattle in or keep them out. Nothing worked.[148] Cattle were strong enough to break through almost any type of wire fence and most wooden fences, shrubbery, or hedges, as well. In 1874, Joseph Glidden invented a solution: barbed wire.[149] The barbed-wire fence was easy to string and its barbs deterred the cattle from breaking through it without inflicting serious injury.[150] By 1880, thousands of acres of the prairie had been fenced

145. *See* Harvey Leifert, *Dividing Line: The Past, Present and Future of the 100th Meridian*, EARTH (Jan. 22, 2018, 6:00 AM), https://www.earthmagazine.org/article/dividing-line-past-present-and-future-100th-meridian (the 100th meridian, generally accepted as the boundary between East and West, runs through the middle of Dodge City).

146. *See* Improved Governor for Windmills, U.S. Patent No. 11,629 (filed Aug. 29, 1854). The specific apparatus patented was a governor, which controlled the speed of a windmill attached to a water pump. It thus safely could pump water from a deep well, largely regardless of wind velocity. The invention also involved a vane, which turned the rotating blades to face the wind as its direction changed.

147. *Windmill Pumping Capacities*, AERMOTOR WINDMILL CO., https://aermotorwindmill.com/pages/windmill-pumping-capacities (last visited Apr. 2, 2019).

148. A substantial stone wall might be effective, but such enclosures were expensive and difficult to build—and required a supply of suitable stones.

149. U.S. Patent No. 157,124 (filed Oct. 27, 1873) (issued Nov. 24, 1874).

150. *See* Washburn & Moen Mfg. Co. v. Beat 'Em All Barb-Wire Co., 143 U.S. 275 (1892) (reversing the circuit court and validating the Glidden patent). The Supreme Court reviewed the history of patents for wire fences, the more recent ones including some form of barb. It observed that none of them proved practicable. *Id.* at 277–80. The Court characterized the merits of the Glidden patent:

> [V]aluable contribution to the art of wire fencing in the introduction of the coiled barb, in combination with the twisted wire by which it is clamped and held in position. By

with barbed wire.[151] Most states' open-range laws increased the incentive for farmers to fence because the statutes imposed liability on cattle owners for damage inflicted by trespass only when the cattle broke through fenced enclosures. A cattle owner was not strictly liable, as he had been at English common law, for all trespasses on the land of another.[152]

Ranchers depending on the open range to feed their cattle and move them were not pleased with the result, as more and more of the range was closed off to them. In addition, their enthusiasm for fencing often induced farmers to enclose more than they owned. Eventually, the federal government prohibited fencing public land.[153]

Ranchers responded to the fencing movement by sending out bands of cowboys in the nighttime to cut the fences. Much controversy and substantial violence resulted.[154] Many states enacted statutes prohibiting, and sometimes criminalizing, fence cutting.

> this device, the barb was prevented from turning or moving laterally, and was held rigidly in place. . . .
>
> The difference between the Kelly fence and the Glidden fence is not a radical one, but, slight as it may seem to be, it was apparently this which made the barbed wire fence a practical and commercial success. The inventions of Hunt and Smith appear to be scarcely more than tentative, and never to have gone into general use.

Id. at 281–82.

The lower court in Washburn & Moen Mfg. Co. v. Beat 'Em All Barb-Wire Co., 33 F. 261 (C.C.N.D. Iowa 1888), *rev'd,* 143 U.S. 275 (1892), had considered a suit in equity brought against Beat 'Em All for an injunction against infringement of Patent No. 157,124. The court denied an injunction, finding the patent invalid for want of novelty. *Id.* at 272.

151. Even the U.S. Supreme Court took notice of the proliferation of barbed-wire fencing:

> The sales of the Kelly patent never seem to have exceeded 3,000 tons per annum, while plaintiff's manufacture and sales of the Glidden device (substituting a sharp barb for a blunt one) rose rapidly from 50 tons in 1874 to 44,000 tons in 1886, while those of its licensees in 1887 reached the enormous amount of 173,000 tons. Indeed, one who has traveled upon the western plains of this continent cannot have failed to notice the very large amount of territory enclosed by these fences, which otherwise, owing to the great scarcity of wood, would have to be left unprotected. Under such circumstances, courts have not been reluctant to sustain a patent to the man who has taken the final step which has turned a failure into a success. In the law of patents, it is the last step that wins.

Washburn, 143 U.S. at 282–83. *See Evolution of Property Rights*, *supra* note 18, at 172 (noting impact of barbed wire in making enclosure of the range practicable); *id.* at 175 (noting major impact of barbed wire in changing range customs and law).

152. *See* Addington v. Canfield, 66 P. 355, 357–58 (Okla. 1901) (describing open-range statutes).

153. *See* Act of Feb. 25, 1885, ch. 149, § 1, 23 Stat. 321 (codified at 43 U.S.C. § 1061) (making fencing of the public land of the United States unlawful); *see also id.* § 3 (codified at 43 U.S.C. § 1063) (criminalizing fencing that obstructed transit of public lands).

154. *See* Wayne Gard, *Fence Cutting*, TEX. ST. HIST. ASS'N (June 12, 2010), https://tshaonline.org/handbook/online/articles/auf01 (describing 1883 "Fence War," which involved more than half of Texas counties).

4. *Quarantines*

Quarantine laws drove the last nail in the coffin of the cattle drives into Kansas, a place that had been especially active in soliciting them at the beginning. Quarantine laws resulted from an *absence* of technology to control Texas fever. Texas fever is a tickborne disease carried by Longhorn cattle that have grazed the open range. The Longhorns themselves are apparently immune from the disease, but the ticks they carry readily infect other breeds.[155]

Hundreds to thousands of Kansas cattle died from the disease. Their owners, mostly smaller local farmers, blamed the herds from Texas. They pressed the Kansas legislature to exclude Texas cattle from the state. They didn't want them there anyway because of their tendency to trespass and destroy crops; this was yet another grievance in the long-running struggle between rancher and farmer. The legislature responded cautiously at first. In 1869, it banned Texas cattle from the eastern part of the state, leaving the western part open to receive them. Indeed, that was one of the developments that gave Dodge City such a boost as the predominant railhead for cattle drives. Through the next ten years, however, the legislature gradually strengthened and increased the reach of the laws,[156] which functioned by requiring that Texas cattle be seized by the sheriff and quarantined.[157] This was not the same as condemning them outright or shifting permanent possessory rights away from the cattlemen, but it blocked them from realizing revenue in the cattle while the seizure and quarantine remained in effect.

No one understood the etiology of the disease until 1890, when young, government epidemiologist Theobald Smith proved through a series of experiments that the disease was caused by the Babesia bigemina parasite, which is carried by ticks that feed on cattle blood.[158] The 1885 statute basically closed Kansas to Texas cattle, requiring ranchers to drive them further

155. KNOWLTON, *supra* note 2, at 25–26 (noting apparent immunity of longhorns and devastating effect on other breeds).

156. 1869 legislation closed east-central Kansas to Texas cattle; 1885 legislation closed the entire state, except for December, January, and February. *See* Stager v. Harrington, 27 Kan. 414, 423–24 (Kan. 1882) (describing 1867, 1872, 1873, and 1881 legislation).

157. *See* Missouri, K. & T. Ry. Co. v. Haber, 44 P. 632, 634 (Kan. 1896), *aff'd*, 169 U.S. 613 (1898) (describing intended movement of cattle by drive from Texas to Chase County, Kansas, for the purpose of being pastured there before being shipped by rail to slaughterhouses); *see also* Missouri, K. & T. Ry. Co. v. Haber, 169 U.S. 613, 616–17, 638–39 (1898) (quoting 1885 statute and finding it not to be unconstitutional as an impediment to interstate commerce).

158. KNOWLTON, *supra* note 2, at 200–01 (describing Smith's education and recruitment to work for the federal government); *id.* at 245–46 (describing research and experiments that isolated the cause of the disease in 1890).

west into railheads or pasturage in Wyoming or Montana if they wanted to continue the practice of cattle drives.

5. *The Wyoming Bubble*

Gradually, the forces of civilization pushed the drives further west and north to Wyoming. British capital and second sons went mostly to Wyoming rather than to Texas or Kansas. The investment opportunities for this capital existed mainly in Wyoming's wide-open spaces because large-scale ranching had mostly been pushed out of Kansas and Nebraska by settlement, and it was more efficient for the herds to be near the railhead in Cheyenne rather than being driven 1500 miles from grasslands in Texas.[159] Cattle drives still existed, but they were much shorter.

By the time a tipping point had been reached in English upper-class opinion about the beef boom, it was reasonably clear that the days of the cattle drive were numbered. Investing in a Texas herd meant that the investor had to deal with 1500 miles of transportation to get the herd to the railhead. No such problem existed in Wyoming; the herd could be moved directly from a Wyoming ranch to a Wyoming railhead.

The farm, enclosed by barbed wire, and then the feedlot had emerged as alternatives to open pasturing. A surplus of British capital existed in the 1870s and 1880s,[160] and it poured into the cattle ranges drawn by the early success of the Texans.[161] British investors were particularly enthusiastic about railroads in the United States and cattle ranching in the West.[162]

The inrush of British capital[163] and its targeting of Wyoming rather than Texas shifted the center of gravity of cattle breeding and raising northward. Some specialization occurred. Texas began to concentrate on breeding and calving, Wyoming began to concentrate on feeding, and midwestern cities like Chicago and Kansas City concentrated on slaughtering and dressing.

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159. *See id.* at 114–24 (explaining why Cheyenne, Wyoming, became the epicenter of open-range ranching in the 1880s).

160. *See* Michael A. Clements & Jeffrey G. Williamson, *Where Did British Foreign Capital Go? Fundamentals, Failures, and the Lucas Paradox 1870–1913* 11–12 (Nat'l Bureau of Econ. Research, Working Paper No. 8028, 2000), https://core.ac.uk/download/pdf/6606273.pdf (reporting that Britain was, by far, the largest capital exporter from 1870 to 1913).

161. *See* KNOWLTON, *supra* note 2, at 116–17 (referring to a "cascade of wealth pouring in" from Britain).

162. The lion's share of the investment went to North America and Australasia. *See* Clements & Williamson, *supra* note 160, at 36 tbl.1 (showing that 44.8% of British foreign investments went to North America and Australasia, more than any other region).

163. *See id.* at 116–17 (describing replacement of local capital by British capital).

6. *Feedlots*

Local surpluses of grain and silage from the harvesting process were abundant throughout the Midwest, and the cattle liked them about as well or better than grass on the range, which was disappearing anyway due to overgrazing. The result was the growth of cattle feedlots, replacing open-range ranching.[164] Smaller herds on fenced plots could be managed by smaller farmers until the cows calved, with the calves then sold to feedlot operators who would confine them more tightly in feedlots and fatten them on grain and silage until they were ready to be transported to slaughterhouses. As this economic organization took root, there no longer was a need to move large herds of cattle across an open range from range to railhead, feeding and fattening as they traveled or waited for the train.

The feedlot phenomenon took nearly fifty years to take over, however. "Feedlots" in 1885 meant smaller farms where a few hundred cattle were confined in barbed-wire fields and fed human-harvested food as a supplement to whatever they could eat by grazing. In 2019, a feedlot means a factory with a thousand cattle, confined in quarters so close they are unable to do much more than eat.[165] Most beef cattle are fattened in feedlots now, but it took the refrigerated truck trailer and the interstate highway system to supplant the 1885 system of centralized slaughterhouses linked to cattle herds and markets by rail.[166] It also took anti-union meatpackers like Iowa Beef Processors[167]

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164. *See* KNOWLTON, *supra* note 2, at 117–18 (noting specialization in feedlots using surplus grain in Illinois, while Texas specialized in calving); Bill Ganzel, *Beef, Feedlots & IBP*, LIVING HIST. FARM, https://livinghistoryfarm.org/farminginthe50s/crops_08 html (last visited Apr. 2, 2019) (describing history of cattle feedlot, first developed in the 1930s and 1940s and spreading so that it put other methods of beef ranching out of business; asserting that packinghouses followed the feedlots geographically); *Feedlots: Marbled Meat for the Masses*, FOOD DISRUPTORS (Dec. 6, 2018), https://thefooddisruptors.com/feedlots-marbled-meat-for-the-masses-ep-022/ (attributing first large-scale feedlot operation to Californian Dwight Cochran).

165. HAMILTON, *supra* note 17, at 144 (identifying among other advantages of decentralized "cinderblock" meatpacking the advantage that the beeves "rarely had to walk under their own power" and thus could maintain weight).

166. *See id.* at 136–37 (describing how interstate highways, refrigerated truck trailers, and independent truck drivers "decimated" the centralized Chicago and Omaha system of meatpacking and allowed it to be reinvented in decentralized "cinderblock" packing houses near feedlots).

167. *See* Thomas L. Friedman, *Iowa Beef Revolutionized Meat-Packing Industry*, N.Y. TIMES (June 2, 1981), https://www.nytimes.com/1981/06/02/business/iowa-beef-revolutionized-meat-packing-industry.html ("Iowa Beef forced the competition either to copy its methods or quit the business. . . . Iowa beef . . . uses a private satellite communications system to maintain instantaneous contact with its 85 buyers around the country, thus trying to insure that it buys the amount of cattle necessary to meet the demand of retailers on any given day."). Iowa Beef was bought by Occidental Petroleum and then by Tyson Foods. After Iowa Beef, the dominant beef processors are JBS USA (Brazilian successor to Swift & Do.), Cargill Meat Solutions Corp. (successor to Kansas Beef Industries and Missouri Beef Packers), and Hormel Foods, Corp.

and independent-contractor truckers to become the "asphalt cowboys," willing to take a load of beef directly from the farm to the supermarket.[168]

The long-term evolution of the industry has reversed the centralization and concentration impulses generated by the first round of Creative Destruction, as exemplified by the cattle drives, and reversed it with a decentralized system of smaller, fenced farms and feedlots linked directly to regional slaughterhouses and supermarkets by independent truckers.[169] Gradually, the stockyards and slaughterhouses moved closer to the herds, making long drives unnecessary.[170]

7. *The "Beef Trust"*

Some students of the era conclude that the "Beef Trust," a cartel comprising the six largest slaughterhouse meatpacking firms,[171] contributed to the destruction of open range ranching without offering any economic analysis in support of their conclusion.[172] It is plausible that the Beef Trust held down retail prices for beef to keep competitors out and that this artificially low retail pricing put the squeeze on the prices at which cattlemen could sell their herds. But this influence was artificial only to the extent that the Beef Trust was pricing below cost, which remains to be proven. Otherwise depressed beef prices were simply a result of excess supply and low prices driven by constantly improving meatpacking and refrigerated transportation technologies.

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168. HAMILTON, *supra* note 17, at 145 (noting how "asphalt cowboys"—independent cattle-hauler truck drivers—needed skills for loading and caring for animals, much like the cattle drive cowboys of seventy-five years earlier). Deregulation of trucking—or evasion of regulation—was a critical ingredient. *Id.* at 147–48 (explaining how absence of ICC regulation of beef-hauling and evasion of state regulation in states like Kansas enabled "bull carriers" to drive a load of cattle directly from the farm or feedlot to wherever the cattleman wanted them shipped).

169. *Id.* at 157–58 (describing how Iowa Beef Packers' innovations like boxed beef, cryogenic packaging, and freezing enabled truckers to carry beef from close to the feedlot directly to the supermarket).

170. SWIFT & VLISSINGEN, *supra* note 58, at 26–28 (reporting plans in 1893 to move dressing of beef upward along the Missouri River because it was better to save hauling live cattle 1000 miles from Chicago east, and even better to dress it in Kansas City and save hauling them 1500 miles).

171. *See* HOROWITZ, *supra* note 30, at 31 (asserting that by the time of Swift's death in 1903, six top meat-processing firms controlled ninety percent of the market); *see also* HAMILTON, *supra* note 17, at 162 (describing dominant market share of Tyson Foods, successor to Iowa Beef, and other boxed beef processors in 2004). In 1903, the six companies were Swift, Armour, Morris, Cudahy, Wilson, and Schwartzchild.

172. *Compare* KNOWLTON, *supra* note 2, at 321 ("[The Beef Trust's] modern management techniques . . . allowed them to achieve a stranglehold on the industry, controlling supply, distribution, and pricing."), *with* ARMOUR, *supra* note 112, at 32–33 (arguing that opposition to private car enterprises originated in lost business to commission merchants).

The beef ranchers were happy to blame misfortunes resulting from the Great Die Up, overgrazing, and closure of public land on a conspiracy by the Beef Trust. President Theodore Roosevelt was not deaf to the growing wave of populism in the Midwest and West and sent his attorney general after the Beef Trust and other manifestations of mass marketing and big business. In *Swift & Co. v. United States*,[173] the Supreme Court affirmed, in material part, the injunction against the "Beef Trust" granted by the circuit court.[174]

The court quoted portions of the indictment and petition for an injunction, which revealed the facts claimed:

> 6th. That said defendants . . . [have directed their agents] to refrain from bidding against each other when making purchases of such livestock, and by these means inducing and compelling the owners of such livestock to sell the same at less prices than they would receive if such bidding were competitive . . . .
>
> 7th. That said defendants . . . have engaged in . . . [a] conspiracy . . . for bidding up . . . the prices of livestock for a few days at said stockyards, thereby inducing shippers from other states and territories to make large shipments of such livestock to such stockyards, and then refrain from bidding up such livestock, and thereby obtaining such livestock at prices much less than it would bring in the regular way of trade . . . .
>
> 9th. And the said defendants . . . [have directed their agents to impose] uniform charges for cartage for delivery . . . thereby increasing the charges for such meats to said dealers and consumers.
>
> 10th. [That the railroads have made unlawful rebates to the defendants].[175]

Although the Court accepted the government and the ranchers' theory that meatpacker conspiracies had depressed beef prices, far more likely was overgrazing,[176] overinvestment, and the obsolescence of open-range ranching brought about by steel plows, windmills, and barbed wire. The market structure in 2019 is just as monopsonistic as the Beef Trust was in 1900, but

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173. 196 U.S. 375 (1905).

174. *See Swift*, 196 U.S. at 402.

175. United States v. Swift & Co., 122 F. 529, 529–30 (C.C.N.D. Ill. 1903), *modified*, 196 U.S. 375 (1905) (material alleging effect on interstate commerce omitted).

176. Ultimately, the federal government limited grazing on public lands, motivated by a perception that overgrazing had contributed to the Dust Bowl phenomenon. *See* Morrow-Thomas Hardware Co., 22 T.C. 781 (T.C. 1954) (providing agricultural history of the plains, including the Dust Bowl). The Taylor Grazing Act of 1934 established federal administration of the public domain, preserving grazing rights but requiring leases and licenses. *See* Merrill, *supra* note 20, at 435.

consumers and cattlemen seem pleased with it and are not as inclined to try to break it up as they were to break up the monopsony in 1900.[177]

IV. LAW'S ROLE

The processes of Creative Destruction leading to the rise of cattle drives and their eventual demise were channeled by law—as economic processes in a developed economy always are. They were not, however, defined by formal legal institutions and explicit regulatory provisions so much as they were shaped by informal norms enforced by self-help which funneled new technologies and entrepreneurship in particular ways.

Chief among these legal and quasi-legal regimes were those pertaining to property concepts. Labor law was part of the equation, not in its modern sense of EEOC or NLRB regulation, but as particular applications of contract, property, and criminal law. Railroad-rate regulation and antitrust law entered the arena late in the period as a means of altering the shifting balance of power resulting from Creative Destruction.

A. PROPERTY LAW

Property law impacted the cattle drives in three major ways. Two property law developments enabled cattle drives. The Mexican government had sought to attract settlers, most in the form of cattle ranchers, by affording homesteading opportunities to plots of attractive range of more than a thousand acres each. This policy was continued by the Republic of Texas, once it became independent, and continued again when Texas became a state. This generous land appropriation policy combined with the wild herds of cattle and the migration from the South to establish large Texas herds and ranches as the nation was recovering from the Civil War. The second impact was the explicit policy of the federal government to allow free grazing and traversing of the public lands, which comprised most of the plains states. This policy meant that Texas cattlemen could expect and enjoy free feed and free transport from their Texas ranches to the railheads in Kansas and further north.[178] The third policy undermined the effect of the first two and eventually wiped out the cattle drives. This policy was the encouragement of smaller-scale settled farming under the Homestead Act of 1862.

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177. HAMILTON, *supra* note 17, at 139.

178. "In the late 1870s and up to the mid-1880s, the cattle industry boomed in the semi-arid West, on the remaining public domain. By using this so-called 'open range,' ranchers were able to graze their animals for free, and many were able to build up enormous operations." Merrill, *supra* note 20, at 435.

The central reality of property law in the nineteenth century was the huge stock of public land. A significant objective of U.S. government property law in the eighteenth and nineteenth centuries was to encourage private exploitation of the enormous government holdings of public lands.[179] Only through private entrepreneurship could prosperity be advanced and the public welfare increased.[180] This policy initially was expressed in the Land Ordinance of 1785[181] and then, beginning in midcentury, in a series of homesteading laws.

A prerequisite to implementing land sales was to survey the land in the territories recently acquired in the Louisiana Purchase, the Northwest Territory, and in the lands acquired as a result of the Mexican War and the annexation of Texas. Once the surveys were complete, it was possible to identify parcels of land unambiguously and therefore to permit private claims. From the beginning, the concept was that the government would transfer title in fee simple absolute to purchasers rather than holding back interests through leases or other more complicated layers of present and future interests, leases, and licenses.[182]

George Washington and Thomas Jefferson both were surveyors. They understood the essential role that surveying – essentially a scientific activity – plays in assuring property rights under law by making it possible for those claiming a property interest to claim them in specific pieces of

179. The federal government owned some 237 million acres of land ceded to it by the individual states. Smith Monson, Note, *Treating the Blue Rash: Win-Win Solutions and Improving the Land Exchange Process*, 2015 UTAH L. REV. 241, 242–43 (2015) (citing Land Ordinance of 1785 and describing the motivation and process for selling off public lands). Charters of seven of the thirteen U.S. colonies granted lands extending from the Atlantic Ocean to the Mississippi River. After the Revolutionary War, these states ceded the lands west of their western boundaries to the federal government with the expectation that revenue from selling the land could reduce the war debt. The Land Ordinance of 1785 was intended to facilitate land sales. This enormous stock of public lands was further increased by the Louisiana Purchase of 1803, the Treaty with Spain of 1818, the annexation of Texas in 1845, the Oregon Compromise of 1846, and land ceded by Mexico at the end of the Mexican War. The total was the addition of some 1.4 billion acres of land to the federal public domain. *See* Monica E. Eppinger, *The Challenge of the Commons: Beyond Trespass and Necessity*, 66 AM. J. COMP. L. 1, 12–14 (Supp. 2018) (summarizing history of land additions to public domain).

180. Sale of public lands also was an important source of federal government revenue in the era before income taxation.

181. 28 *Journals of the Continental Congress*, 1774–89, May 20, 1785, 375, http://memory.loc.gov/ammem/amlaw/lwjclink html. The Act required the Geographer of the United States to transmit plats of surveys as he made them to the treasury, which was required to keep them in bound books for sale. *Id.* at 377. The board of treasury was to transfer some plots of land to the states for public sale and to sell other plots directly. *Id.* The minimum price was to be one dollar per acre. *See* Richard P. McCormick, *Ambiguous Authority: The Ordinances of the Confederation Congress, 1781–1789*, 41 AM. J. LEGAL HIST. 411, 429–31 (1997) (explaining authority of Confederation Congress and summarizing legislative history of Land Ordinance of 1785).

182. The 1785 Act specified habendum language of fee simple absolute: "To have to the said ___, his heirs and assigns for ever . . . ." *Journals of the Continental Congress*, *supra* note 181, at 379. It did, however, reserve certain mineral rights.

unambiguously defined property. Both supported enactment of The Land Ordinance of 1785,[183] which focused on surveying all of the new nation's public lands in preparation for selling them to would-be farmers.[184] Section 8 of the 1796 Act provided for the Secretary of the Treasury to maintain an "account" of sales of public land, for certificates to be issued to purchasers, and for noting the tracts sold on the "general plot."[185]

The General Land Office eventually became part of the Bureau of Land Management within the U.S. Department of the Interior, and today the records of the General Land Office are available on the Internet, including land patents for Dodge City, Kansas.[186]

Despite the preference for transferring land to private hands, the inventory of public lands remained large. Both the range and the herd that grazed it were rivalrous, but neither was inherently excludable.[187] The range was not excludable because the cattle, the agents that consumed it, could wander wherever they wanted to and were not excludable from any part of it. The herds were not excludable because it was not consistent with their intended purpose to confine them, and the means for confining them in large numbers were not available before barbed wire.

> The range cattlemen had four main problems to solve. First, they had to allocate access to the range in order to prevent overgrazing, the "tragedy of the commons." Second, they sought to reduce operating costs through joint efforts. Roundups, for example, were cheaper to conduct cooperatively than individually. Third, they had to establish ownership of the cattle and allocate the mavericks, or unbranded young cattle. Fourth, they had to protect themselves against theft.[188]

So the law found a remedy for the cattle – branding – but was unable to find a workable remedy for the range, resulting in the tragedy of the commons in the form of overgrazing. In theory, the range could have been treated as a tenancy in common rather than as land in the public domain. Then, one tenant

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183. *See supra* note 179.

184. *See* James L. Huffman, *The Inevitability of Private Rights in Public Lands*, 65 U. COLO. L. REV. 241, 247–51 (1994) (explaining early U.S. land policy); Michael I. Jeffery, *Public Lands Reform: A Reluctant Leap into the Abyss*, 16 VA. ENVTL. L.J. 79, 82–84 (1996) (summarizing history of early U.S. land policy).

185. *See* Land Act of 1796, ch. 29, § 8, 1 Stat. 464, 468.

186. *See* BUREAU LAND MGMT., glorecords.blm.gov (last visited Apr. 3, 2019).

187. *See* David W. Barnes, *The Incentives/Access Tradeoff*, NW. J. TECH. & INTELL. PROP., Fall 2010, at 96, 98–99 ("'Non-rivalrous' means that it is costless to allow additional consumers simultaneously to enjoy the benefits of a public good once it has been produced, and 'non-excludability' means that producers have a hard time getting consumers to pay for the privilege.").

188. Andrew P. Morriss, *Hayek & Cowboys: Customary Law in the American West*, 1 N.Y.U. J. L. & LIBERTY 35, 43 (2005) [hereinafter *Hayek & Cowboys*].

in common would have had an action for waste against another tenant who overused the resource. But that would have required defining overuse, and it is not clear how that would have been done – at least not as long as there were no barriers to new entrants.

1. *Access to Real Property*

The most important input for cattle production is cattle feed; a cow cannot survive unless it eats. Property rights to land defined the possibilities for feeding large numbers of cattle. On the undeveloped plains, grazing over large expanses of land was the most efficient method of feeding. Only later did irrigation and cultivation open up other sources of feed.

The undeveloped prairie presented a number of barriers to conventional farming. The absence of natural forest led people to jump to the conclusion that prairie land was less fertile and therefore less suitable to agriculture than the heavily forested East. The thick soil led to the notion that it would be infeasible to cultivate it with available plow implements. The absence of trees presented difficulties in building dwellings and fences to keep livestock out of the crops. Aridity meant that nothing would grow. Eventually, each of these actual or perceived barriers fell to the technologies of the steel-bladed plow, the windmill, and the barbed-wire fence.[189] Until then, open-range ranching was the only way to exploit the land.

Not only did farmers not want the open prairie, no law existed to enforce an eastern concept of farming. Despite settled law in 1870, virtually no infrastructure existed to enforce it in the United States west of the Mississippi River. Most of the territory had not been carved up into plots of privately owned land. Even if it had, no judges, juries, lawyers, or sheriffs were available to enforce property rights. To be sure, communities existed that cared about property, but they generally defined property concepts on a pragmatic basis[190] and used self-help methods to enforce them.[191]

As settlement and civilization of each railhead imported property law and its enforcement institutions from more established parts of the country, a patchwork quilt of individually owned farms emerged. What formerly had been open rangeland available to the trail boss who wanted to allow his cattle

189. *See supra* Part III.B (explaining the technologies and their effect).

190. *See* Robert C. Ellickson, *Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County*, 38 STAN. L. REV. 623, 672–76 (1986) (reporting empirical data revealing that communities rely not on formal law of animal trespass, but on informal norms and social enforcement).

191. *Id.* at 677–79 (describing techniques of self-help for enforcement of animal trespass norms, ranging from negative gossip to seizure and removal of trespassing cattle to threats to kill trespassing cattle; concluding that formal claims for money damages were rare).

to feed there had become a web of private farms on which entry constituted trespass.[192] Negotiating licenses to graze their cattle with hundreds of different landowners was simply too onerous. Thus, organizing a system for recognizing real property interests pushed open-range ranching and cattle drives farther west and north to keep it outside the formal property regime.

At first, the cattle drives met the railroad at more southerly and easterly railheads, in places like Wichita or Abilene, Kansas. As construction proceeded further westward, the cattle drives moved with it to the new railhead, seeking to escape civilization. Superficially, it would have made more sense to stay where the cattle herders, the railroaders, and their intermediaries had established themselves in Abilene or Wichita, but the herds moved westward with the railroad to a new railhead, like Dodge City, where property law, surveys, and individual land ownership had not reached.

a. Range Law

If someone's steer ran through someone else's farm and trampled the crops, that constituted a common-law trespass in the twelfth and thirteenth centuries in England and certainly in nineteenth-century Massachusetts. Trespass to land has been a no-fault concept since feudal times in the sense that an injured party, in order to recover, need not show an intent to cause damage, only an intent to cross the boundary line of the property of the claimant. "One of the most venerable English common law rules of strict liability in tort is the rule that an owner of domestic livestock is liable, even in the absence of negligence, for property damage that his animals cause while trespassing."[193]

This doctrine was undesirable for a geography where extensive grazing of mostly public-domain land was the practice. It was replaced in much of the American West by open-range laws that held cattlemen liable for trespass only for farmland from which cattle are "fenced out."[194] And not much would be fenced out until barbed wire came.

The Supreme Court of the Territory of Oklahoma, in *Addington v. Canfield*,[195] explained range law under an Oklahoma statute, typical of statutes in other open range states:

> The law is ample to protect both [homesteaders and cattle raisers]. . . . The purpose of the free range provisions is to enable

192. *See id*. at 643–50, 657–58 (describing instances of cattle trespass and forces that lead to cattle trespass).

193. *Id.* at 659.

194. *Id.* at 660.

195. 66 P. 355 (Okla. 1901).

> persons engaged in the stock business to get the benefit of the open range in the unsettled portions of the country, without rendering them liable for damages caused by their stock straying, drifting, or grazing upon the uninclosed lands of another. But there are no special privileges conferred beyond this. The owners of stock must not permit their stock to be purposely or willfully driven or herded upon the cultivated lands of others. If they do, this law affords them no protection. The landowner or occupant has at all times the right to guard and protect his possessions. The law takes from him no right, except the right to recover damages where the animals trespass upon him without the connivance of those in charge. He may lawfully drive them from his premises at any time. He may use such force as is necessary to protect his crops, orchards, gardens, and improvements, so long as he does not do any wanton or willful acts of injury. . . . Owners of stock in a free range country are not liable for damages done by their stock if they are turned upon the open range and wander or drift onto the cultivated lands of others. . . . We know, as a matter of common observation, that there is much open land that is unfitted for any other purpose but grazing stock, and stock raising should be encouraged in all legitimate and proper ways. At the same time, the farmer and agriculturist constitute the very foundation which supports every commercial and business interest, and their interests should be fostered, their rights protected, and their industries encouraged.[196]

The practical effect of range law was to leave the range free for open-range ranching until settlers had both a way of fencing it in and a means for enforcing claims for trespass. The business model for cattle drives depended on open range and communal exploitation of it, what Professors Anderson and Hill call a "specific" property regime.[197] Farming and permanent settlements, in contrast, required exclusive possession of much smaller lots and a general property regime. Even apart from fencing, itself the subject of many political battles, when the prairie was carved up into individual family farms, the transaction costs for a cattle herd to get permission to cross the land became prohibitive. The cattlemen could, of course, buy enough land to form a range for his cattle herd, but that approach was uneconomic if the herd was only going to be there for a month or so out of the year after it came up from Texas.

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196. *Addington*, 66 P. at 658.

197. *See Cowboys and Contracts*, *supra* note 63, at 494 (explaining concept of "specific property rights").

b. Homesteading

The Homestead Act of 1862[198] took effect on January 1, 1863, and effected profound change in the business of cattle drives.[199] Application of the Act was limited to the thirty public-domain states that had been surveyed. It granted 160 acres of unappropriated public land to any American citizen or immigrant who declared intention of becoming a citizen. The grantee had to agree to live on the land and cultivate it, and improve it, and build a residence. Claimants had to be heads of household, military veterans, or more than twenty-one years old.[200] No one could claim more than a quarter section of land under the Act. Persons who had "borne arms against the United States" were ineligible,[201] meaning that homesteaders and their advocates were mostly northerners rather than southerners.

Persons seeking the benefits had to file a preemption claim to empty land, and then work it and cultivate it for five years, at the end of which time they were entitled to a land patent from the federal government.[202] Leaving the land for more than six months during the period of preemption occupancy terminated the claim.[203]

The Act required registration of each preemption claim with the "register of the land office."[204] It required the register of the land office to note applications on "tract books and plats" and make a return of his register to the General Land Office.[205] The Commissioner of the General Land Office was authorized to make rules and regulations to implement the Act.[206] The Kansas-Nebraska Act of 1854[207] defined the boundaries of Kansas and Nebraska, extended the U.S. Public Land Survey System established by the Land Ordinance of 1785 to the territories, and directed the Commissioner of the General Land Office to appoint a Surveyor General for the two territories. All of Kansas had been surveyed by 1875.[208] More than one million people settled in

198. Homestead Act, ch. 75, 12 Stat. 392 (1862).

199. Merrill, *supra* note 20, at 436 (describing homesteading movement and arguments for expanding it).

200. Homestead Act § 1.

201. *Id.* §§ 1, 2.

202. *Id.* § 2.

203. *Id.* § 5.

204. *Id.* § 2.

205. *Id.* § 3.

206. Homestead Act § 6.

207. Kansas-Nebraska Act of 1854, ch. 59, 10 Stat. 277.

208. DANIEL R. SUCHY, KAN. GEOLOGICAL SURVEY, PIC 20, THE PUBLIC LAND SURVEY SYSTEM IN KANSAS (2002), http://www kgs ku.edu/Publications/pic20/pic20_1 html.

Kansas between the end of the Civil War and 1890,[209] inexorably pushing the cattle drives west[210] and north.

The rise and fall of the cattle drives illustrate both the tragedy of the commons—the overgrazing of the public range—and the tragedy of the anti-commons, a result of homesteading.[211] Professor Heller explains:

> [O]ne can understand anticommons property as the mirror image of commons property. In a commons, by definition, multiple owners are each endowed with the privilege to use a given resource, and no one has the right to exclude another. When too many owners have such privileges of use, the resource is prone to overuse—a tragedy of the commons. Canonical examples include depleted fisheries, overgrazed fields, and polluted air.
>
> In an anticommons, by my definition, multiple owners are each endowed with the right to exclude others from a scarce resource, and no one has an effective privilege of use. When there are too many owners holding rights of exclusion, the resource is prone to underuse–a tragedy of the anticommons. Legal and economic scholars have mostly overlooked this tragedy, but it can appear whenever governments create new property rights.[212]

c. Cattle Drives Focused the Conflict

The gradual migration of Anglo-American property law into the West and increasing density of settlement put an end to the cattle drives. Conflicts between homesteaders and cowboys richly contribute to the literature – both factual and fanciful – about the western frontier. One of the most famous

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209. *Settlement in Kansas*, KAN. HIST. SOC'Y (Nov. 2001), https://www kshs.org/kansapedia/settlement-in-kansas/14546.

210. The push west developed only gradually. On Thursday, December 20, 2018, the author visited the Ford County recorder of deeds office and inspected the grantor and grantee indices for the period 1874 to 1880. Only a page and a half of transactions comprising about twenty property transfers were recorded for that six-year period, indicating the low density of property transactions during the cattle-drive period.

211. Mushrooming transactions costs resulting from fragmented property claims is known as the "tragedy of the anti-commons." *See* PPL Mont., LLC v. Montana, 565 U.S. 576, 596 (2012) (citing Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 682–84 (1998)) (briefly explaining tragedy of the anti-commons and reversing the Montana Supreme Court and holding that state did not own non-navigable portions of river).

212. Heller, *supra* note 211, at 623; *see also Evolution of Property Rights*, *supra* note 18, at 499 ("[T]heir attempts . . . were undone by land laws dictated from Washington that created artificially high transaction costs. . . ."); *id*. 506–07 (noting how homestead laws increased transactions costs on the range by mandating farms too small for the geography).

hypotheticals used to support the Coase Theorem in Law and Economics is the Parable of the Rancher and the Farmer.[213]

As soon as settlers began to appear in Kansas, Nebraska, and North Texas, conflict with cattle drives emerged. Farmers claimed that stampeding herds – and many herds stampeded, even while they were mostly under control – trampled their crops, ruining entire farming seasons. Cattlemen, for their part, believed that many settlers settled not to farm, but simply to extract exorbitant fees for passage of cattle herds or to make questionable claims for damage done by the herds.

The property conflicts and their role in the demise of the cattle drive arose not because of changes to the substantive content of property law, but because of a spread of the infrastructure necessary to enforce it. The homesteaders naturally wanted security for their property claims. As their numbers increased, municipal and county governments established courts, where lawyers, judges, sheriffs, and town marshals adjudicated conflicting claims to property, awarded judgments for damage to property, and executed the judgments against personal property such as cash and herds, as well as real property. While actual conflicts frequently took a physical form and were resolved by self-help, the legal machinery protected someone who used force, including deadly force, in self-defense or in defense of his property.

Increases in the numbers of homesteaders also affected political change. The livelihood of farmers depended not at all on the success of the cowboy playgrounds like Dodge City. They were instinctively antagonistic to young Rebel teenagers and twenty somethings who got drunk, shot up the town, and supported prostitution houses. The mostly southern cowboys, for their part, resented being pushed around—again—by Yankees. Even in Dodge City, two factions emerged by the mid-1870s: the faction catering to the cattle herds and cowboys, and an opposing faction, dominated by law and order advocates.[214] It was pretty clear to almost any astute observer that the law-and-order faction eventually would win because the number of cowboys was declining while the number of farmers increasing.

Two alternative business models were available for a town like Dodge City. It could seek to attract permanent settlers, advertising the attractiveness and availability of farmland under the homesteading laws. Its business community then would have concentrated on developing commercial establishments such as feed stores and farm implement shops and veterinary medical services to support largely subsistence farming in the surrounding area.

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213. *See generally* Ellickson, *supra* note 190 (reviewing actual conduct by ranchers and farmers and questioning conclusions of the Parable).

214. YOUNG, *supra* note 1, at 92–94, 115–16 (describing conflict between "The Gang" and reformers in Dodge City politics).

Alternatively, the town's leadership could have sought to attract large transient populations with lots of money to spend. They chose the second alternative, first for buffalo hunting, and then for cattle drives, defining Dodge City as a "cowboy playground." That led to the erection of a completely different kind of infrastructure and, if anything, antagonism toward permanent settlement. The reality was a hybrid, giving rise to ongoing political tension between the two groups.[215]

2. *Protecting Personal Property Rights in the Cattle by Branding—Early Trademark Law*

No one owned the real property represented by the open range, but someone did own the cattle grazing on it or traveling over it.[216] The concept of the open range meant that the cattle, regardless of who owned them, were free to intermingle and roam wherever they wanted. A large cattle drive usually involved intermingled herds from different ranches. A property regime involving these chattels required some means to claim ownership. Branding and roundups were the answer.

The feasibility of open-range ranching and the cattle drives associated with it depended on a property-law regime that permitted ranchers unambiguously to assert their ownership in cattle that had wandered afar and intermingled with cattle belonging to other ranchers. Ordinarily, the law of personal property determines ownership by possession.[217] When large quantities of essentially fungible property, like grain, are involved, possession by the owner or a bailee such as a common carrier, a warehouse operator, or a commission merchant avoids most identification problems.

Cattle on the open range, however, are not "possessed" in this sense while they are running free and grazing. To allow mere capture and

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215. *Id.*

216. This phenomenon resulted in attempts at a quasi-property regime to reduce disputes:

> [T]he growing demand for land by cattlemen, sheepherders, and grangers eventually caused the value of land to increase and hence increased the benefits from definition and enforcement activity. To remedy the situation, attempts were made to establish some extra legal claims to property. "As yet, no ranchman owned land or grass; he merely owned cattle and the camps. He did possess what was recognized by his neighbors (but not by law) as range rights."

Evolution of Property Rights, *supra* note 18, at 170.

217. *See* Carol Rose, *Possession as the Origin of Property*, 52 U. CHI. L. REV. 73, 74 (1985) (concluding that "[f]or the common law, *possession* or 'occupancy' is the origin of property"; exploring how the law determines "possession" and why it should be the basis of property rights).

subsequent possession to resolve claims of ownership would have legitimized a constant struggle to raid and sequestrate portions of large herds.[218]

The solution was branding: affixing an indelible mark to each animal and identifying the mark with its owner. An animal could be branded by notching its years in a particular way or burning its hide with a branding iron so as to remove the hair over a scar reflecting the shape of the branding iron. This early form of trademark[219] ensured tangible property rights in the personal property represented by the cattle. Brands permitted cattle owned by different people to be distinguished one from another on the range, much as "Coke" and "Pepsi" permit soft drinks to be distinguished.[220]

> The idea of branding livestock is very similar to the idea underlying modern trademark laws. In fact, a brand could be understood as a type of a trademark. Each ranch has a distinguishing symbol by which it is known to others in the industry and even to the general public. As the ranch becomes a success—or failure—its reputation becomes associated with the brand it uses. A widely known and respected brand becomes valuable to the rancher, in much the same way a well-known car manufacturer will sell more vehicles at a higher price than a company new to the business, even if the actual vehicles made by the two companies are much more similar to than different from each other.
>
> As with trademarks, each brand must be unique to properly identify the owner. Thus, a registration system is needed to permit recognition and regulation of the brands that are being used. State registration systems support a number of functions.
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> For example, states employ brand inspectors who check cattle on the open range and assist in recordation at cattle sales and shipping points based on the brands registered in the state's system. And

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218. *See Cowboys and Contracts*, *supra* note 63, at 499 (asserting that cattle entrepreneurs avoided anarchy and tragedy of the commons by turning "to local initiatives outside of the usual legal framework and without formal national or state governments").

219. Other forms of intellectual property did not operate, even in this analogous sense. For the most part, ranchers did not patent their cattle breeds and there was little that could be kept secret about methods or biology that would warrant trade secret protection for something that made a particular type of animal more desirable and more profitable. Copyright played little role. This was not the era of extensive inside stories or of consultant reports about methods. Downstream, however, patents played a much greater role, and, conceptually, trade secrets could have as well. In fact, patents issued for important innovations in refrigeration, and many producers worked hard to keep their business methods secret from their competitors.

220. *See* Bertram H. Mann, *The New Texas Trademark Bill*, 39 TEX. L. REV. 568, 571 (1961) (describing new state trademark law, which lists cattle brands as eligible for trademark protection and explaining why the new law does not conflict with preceding branding law).

> legal actions over livestock ownership, whether civil or criminal, usually depend on brand registrations.[221]

Branding developed as a custom,[222] and then was incorporated into the common law and eventually codified by statute. If the only evidence of ownership of a brand were the oral testimony of competing claimants, disputes over ownership would be difficult to resolve in a principled manner.[223] Thus, jurisdictions where open-range ranching was common adopted recordation systems modeled on systems for recording real property ownership. Typically, the statutes provided for registering a livestock brand with a state official and providing that ownership of livestock could be established only by pointing to a registered mark.[224] Transfers had to be memorialized by filing documents of transfer with the same official.

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221. Kim Townsend, *Registration of Cattle Brands*, 12 J. CONTEMP. LEGAL ISSUES 91, 91–92 (2001).

222. *See Cowboys and Contracts*, *supra* note 63, at 500–01 (describing group efforts to enforce first-possession claims and to protect individual's ownership in his herd and its increase; noting rise of cattlemen's associations beginning in 1871). Branding was one of the customs enforced informally.

223. *See generally* Hagan v. Cosper, 292 P. 1020 (Ariz. 1930) (detailing conflict over ownership of cattle based on brands).

224. One court pointedly explained the formalities required for ownership transfer:

> We are of the opinion that under the statutes of this state which regulate marks and brands, and their record, a parol sale of a recorded mark and brand must be held to be just as ineffectual to pass the title thereto as would be a verbal transfer of real estate, which is likewise governed exclusively by statutory provisions . . . .

Rankin v. Bell, 19 S.W. 874, 877 (Tex. 1892).

In *State v. Wolfley*, the Kansas Supreme Court explained the legal effect of branding, quoting the popular Wigmore treatise on evidence law:

> When an animal is found in B.'s possession, and the animal bears a brand or other mark, and one of the issues is whether A. is the owner of the animal, it is a natural and immediate inference that the animal belongs to the person whose brand it bears, and, if that brand is A.'s, then to A. This inference, however, while sufficiently probable in the light of practical experience, is in truth a composite one, made up of two steps: (1) First, the inference, from the presence of A.'s usual mark, that A. placed this particular mark, a genuine argument under the present principle, from a trace to the source of the trace; and, (2) secondly, the inference from the fact that A. placed it there, to the fact of his ownership of the animal. The latter step of inference is the vital one. It is perhaps not less natural than the former, but it is more serious in its effect. It would seem that the latter step of inference has been rarely conceded by courts, as a matter of common law. Though the former step was universally conceded, it was said that the presence of A.'s brand was evidence of identity (i.e., of the animal being one of those originally branded by A.), but not of ownership. This unduly cautious attitude has been generally corrected by legislation. In most of the stock-raising communities the brand on animals is made evidence of ownership, though, in order to encourage registration and thus prevent confusion, the rule is applied only to brands duly registered by law. We regard it as clear that, where an animal is found bearing a certain brand, a just inference may be drawn that it belongs to the person who uses such brand, and that, therefore, in the absence of any statute on the subject, the jury may treat the brand as evidence of ownership. . . .

Ranching is supported by the expectation that herds will grow and be replenished by the birth of calves. Cows require little human intervention to give birth, and calving on the open range out of sight of the rancher or his cowboys is common. Calves are not born branded, of course, and effective range management requires a system to claim the appropriate calves and brand them with the correct brand of the owner. That process is made easier by the tendency of calves seek out their own mothers to nurse and for cows to accept nursing only from their own calves. Thus, before a calf is weaned from its mother, it's pretty clear who belongs to whom.

After a calf is weaned, however, identifying it with its owner becomes more difficult.[225] A weaned calf without a brand is known as a maverick. Under the custom of the original cattle drives, mavericks were in the public domain, available to be claimed by the first person to capture them and brand them. This conclusion is not inevitable, however. Property-law fundamentals suggest that the law could treat mavericks as lost property, abandoned property, or the property of the rancher, intentionally transferred to the cowboy. The Ohio Supreme Court in *Brooks v. State*[226] stated the common-law rule with respect to lost property:

> [W]hen a person finds goods that have actually been lost, and takes possession with intent to appropriate them to his own use, really believing, at the time, or having good ground to believe, that the owner can be found, it is larceny.

> The practice of branding has become the recognized mode of marking animals so that the owner may recognize them, and so widely used is it that it has become almost the only means employed for that purpose. Where a person has but a few animals, he may be able from frequently seeing them to become well enough acquainted with their appearance to recognize them without, perhaps, being able to point out the various peculiarities by which he knows them. But, when the herd is a large one, and no one may have had sufficient opportunities to become acquainted with the many little peculiarities which may distinguish the members of that herd from all other animals, then it becomes necessary that some practically indelible mark should be placed on them, and branding has been found to be the best mark for that purpose. It is in every cattle country a well-recognized mode of identification, and to say that it is not a reasonable means is to say that all cattle dealers are wrong in recognizing it as such. It is, of course, not an infallible mark. It may have been put on by mistake, or by fraud, or the animal, though the property of the owner of the brand at one time, may subsequently have been parted with. But these remarks apply equally to whatever marks may be relied upon as proof of identification.

89 P. 1046, 1046–48 (Kan. 1907). The court affirmed the conviction of the defendant for cattle theft. *Id.* at 1048.

225. *See* State v. Chynoweth, 126 P. 302, 302–03 (Utah 1912) (reviewing evidence of whether calf belonged to branded cow).

226. 35 Ohio St. 46 (Ohio 1878) (affirming conviction for larceny).

> It must not be understood from the rule, as thus stated, that the finder is bound to use diligence or to take pains in making search for the owner. His belief, or grounds of belief, in regard to finding the owner, is not to be determined by the degree of diligence that he might be able to use to accomplish that purpose, but by the circumstances apparent to him at the time of finding the property. If the property has not been abandoned by the owner, it is the subject of larceny by the finder, when, at the time he finds it, he has reasonable ground to believe, from the nature of the property, or the circumstances under which it is found, that if he does not conceal but deals honestly with it, the owner will appear or be ascertained. But before the finder can be guilty of larceny, the intent to steal the property must have existed at the time he took it into his possession.[227]

The *Brooks* case involved a bundle of cash accidentally dropped by a hitching post and picked up by the defendant. Its stated doctrine easily can be applied to a cowboy finding a maverick beef. He might argue that the beef has been "lost" in the sense that it was not captured by a roundup when it still could be identified with its mother. Because it could not be so identified, it would not be easy to determine its owner. Thus, having found it, he is entitled to keep it and, when he does, he is not liable for rustling (larceny). He would have a less persuasive argument for treating the maverick as abandoned property unless he sustains the proposition that the rancher intended to abandon mavericks to the first cowboy who finds them. The most satisfactory characterization is that of intentional transfer. The mavericks belonged to *one* of the ranchers whose herd was intermingled, and that rancher intended, by the custom of the range, to transfer ownership to the first cowboy who found it and branded it. This property transfer, like the property transfer of cash wages, represented compensation to the cowboys for doing their jobs.[228] Mavericks were not a problem on cattle ranches enclosed by fences: all cattle inside the fence belonged to the cattleman.

The cattlemen's (and the cowboys') property interest in the cattle was protected more by force than by law. There was little law in the territories through which the cattle were driven. Even where it existed on the books, there was no one to enforce it, except the cowboys accompanying the herd

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227. *Id.* at 49–50.

228. *See Hayek & Cowboys*, *supra* note 188, at 47 (describing how some cattlemen concluded that the incentive effects warranted giving cowboys a share of the mavericks).

themselves. The best defense against rustlers was the threat of deadly force from the carbines and sidearms all the cowboys carried.[229]

B. LABOR LAW

One might wonder why formal law did not play a bigger role in the relations between cowboy and cattleman in the workplace represented by the cattle drive, the ranch, and the cowtown. The case law is sparse,[230] and the statutory and regulatory regimes to address their relationships were nonexistent. Labor law, as lawyers understand it in the twenty-first century, did not exist anywhere in the U.S. economy in the decades right after the Civil War. The common law of master and servant had to suffice, although a few legislative initiatives were beginning to emerge to limit child labor and hours of work in the textile mills.[231] The common law of master and servant was reasonably well-developed, at least as it applied to tort liability of the master for the acts of his servant, and the common-law of contract similarly was well-

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229. Extralegal violence as a method of enforcement was common:

> Most of frontier life was characterized by order rather than disorder, and the absence of formal government did not mean that there were no collective efforts (specific contracts) designed to deal with those who broke the informal rules. Violence, however, was used, and the typical characterization of the West as wild does have at least a partial basis in fact. When violence occurred, it was usually because the enforcement mechanisms in the specific contracts were ineffective for excluding outsiders.

See Cowboys and Contracts, *supra* note 63, at 504.

230. Dunn v. Hereford, 1 Wyo. 206 (Wyo. 1875), is an exception. A cattle herder sued his employer for wages due at the end of his contract. The employer claimed he was fired for neglect of his duties before the original end of the contract. The supreme court affirmed judgment on a jury verdict for the plaintiff on instructions that:

> [I]f the plaintiff in error, who was defendant below, hired Hereford, who was plaintiff below, for the term of a month at a stipulated sum, and discharged him before the expiration of the month without sufficient cause, he was bound to pay him for the full month; or if he discharged him before the time agreed upon having expired, at a great distance from home and in an uninhabited country, that he was bound to settle with him and pay him the amount found to be due.

Id. at 209–10.

The incidence of ordinary civil litigation was high, however, even before Wyoming became a territory (it was part of Dakota Territory until July 25, 1868). In 1868, 277 cases were filed in the District Court for the First Judicial District in Laramie County. The population of Laramie County was about 3000 at the time. By comparison, 218,796 civil cases were filed in the Circuit Court of Cook County, Illinois, in 2017. ADMIN. OFFICE OF THE ILLINOIS COURTS, ILLINOIS COURTS STATISTICAL SUMMARY 33 (2017), http://www.illinoiscourts.gov/SupremeCourt/AnnualReport/2018/2017_Statistical_Summary_Final.pdf. The population of Cook County in 2017 was 5,211,263. *QuickFacts: Cook County, Illinois*, U.S. CENSUS BUREAU, https://www.census.gov/quickfacts/fact/table/cookcountyillinois/PST120218 (last visited Apr. 10, 2019). Thus, the incidence of ninety-two cases per thousand in Laramie County was three times the incidence of forty-two cases per thousand in Cook County 175 years later.

231. *See* Perritt, Jr., *supra* note 10.

developed. Yet little reported litigation exists applying these doctrines for or against cowboys.

The reason for the paucity of judicial intervention into the relationships supporting the cattle drives is that the participants didn't need it. Both sides accepted a set of consensus norms that governed their relationship.[232] When a cowboy did not honor the norms, he easily could be excluded by removing this privilege to graze his horse or his small private herd along with the much larger rancher's herd he had been employed to attend. In many cases, the rancher owned the horse the cowboy rode, and it was a simple matter to withdraw the horse and to set the troublesome cowboy on foot.

When ranchers violated the norms, the cowboys could punish them and enforce conformity by their physical control of the rancher's most valuable resource: his herd of cattle on the way to market. Legal institutions of all kinds were thin during the early part of the cattle-drive era, and therefore self-help involving various levels of violence often was the remedy for norm violation, and no formal law-enforcement presence existed to stop it.

If a major conflict developed between the foreman and the cowboys during a drive, the cowboys spontaneously could refuse to work or walk off the job, and the foreman could not do much about it. That would place a herd of more than a thousand cattle at risk. Even if fewer than all the cowboys engaged in such job action, the likelihood that the herd would reach its destination without major losses was slim. Labor law had nothing to do with it; membership in labor unions and formal strike organization were unnecessary.

The labor law of the cattle drive was shaped by the asymmetry of the contract between cowboy and cattleman or drive foreman.[233] The contract was unilateral in nature, meaning that a promise of payment at the end of the drive was exchanged for performance of the cowboy's duties during the drive. Economic incentives existed for the foreman to cheat the cowboys by receiving their performance and then reneging on the payment. Few factual reports and little folklore suggest this was a problem, however. Something must have existed to prevent this form of cheating.

The cowboy could, of course, sue the foreman over whom the courts of the railhead would have personal jurisdiction. A foreman and his rancher

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232. *See Hayek & Cowboys*, *supra* note 188, at 43–47 (describing informal norms and enforcement mechanisms governing relationship); *Miners, Vigilantes & Cattlemen*, *supra* note 104, at 669.

233. A cowboy's immediate contract usually was with the foreman for the drive rather than with individual ranchers owning the cattle. Typically, cattle from multiple ranches were consolidated into a large herd for the drive. *See* ADAMS, *supra* note 61, at 7–8 (describing herd of 3100 cattle assembled for the drive northward from several ranges). The foreman recruited the cowboys for the drive. That the foreman rather than the rancher himself was on the other side of the contract from the cowboy makes little difference in the legal analysis.

principal could try to negate the effectiveness of that course of action by making sure the foreman had insufficient cash resources to pay the cowboys when payment was due. Then the cowboy might get a judgment, but it would not be worth much. That strategy would not be very effective, however, because of the ready availability of the cattle herd for attachment and execution[234] to secure payment.[235]

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234. *See generally* Ward v. Johnson, 72 P. 242 (Kan. 1903) (approving attachment of cattle herd under mortgage that sufficiently described herd); Interstate Galloway Cattle Co. v. McLain, 22 P. 728 (Kan.1889) (reversing directed verdict because jury should have been able to sort out conflicting priorities of mortgages on attached herd of cattle); Russell v. Smith, 14 Kan. 366 (Kan. 1875) (adjudicating rights in cattle attached by sheriff; sheriff attached whole herd without sequestering those belonging to one other than the creditor). That these cases did not involve cowboys as the creditors is immaterial. The cowboys not paid their wages due after a drive would be creditors, *see* Nat'l Bank of Commerce v. McDaniel, 174 P. 286, 288 (Okla. 1918) (recognizing general principle that wages of cowboy are secured by lien on herd that cowboy tends), and the cases support the proposition that they would have had attachment of the herds as a remedy.

235. Most of the case law says that the cowboys did not have an automatic lien in the cattle. In Underwood v. Birdsell, 9 P. 922 (Mont.1886), cowboys hired at different times to herd cattle being driven from Texas to Montana were not entitled to a statutory lien. *Id.* at 923. "Persons employed to drive cattle are not herders within the meaning of our statute. . . . Under this statute, before the lien comes into existence, the cattle must have been instructed to the party claiming them." *Id.* at 924. On the facts, the purchaser of the cattle was denied possession of them by the cowboys holding them as security for payment of their wages. *Id*. at 922–23 (summarizing facts); *see also* Hooker v. McAllister, 40 P. 617 (Wash. 1895) (statute did not confer lien on sheep or cattle on one paid a monthly wage to herd them; possession remained in owner; statute intended to apply only to actual bailment).

> [T]he testimony plainly shows that the respondent in this case was simply hired to do this work as a common servant; that he had no care, custody, or control whatever over the sheep; that, had they committed any depredations or damaged any one, the appellant, and not the respondent, would have been responsible for such damages; and this, we think, is one of the true tests of distinction in this kind of a case. The herder who takes a band of sheep or cattle or horses into his possession, and is entrusted with their care, custody, and control, and takes them out of the care and control of the owner, whether his compensation be for so many dollars a month or so many dollars a month per head for the stock, is liable for all damages which may occur by reason of the depredations of said stock, or any damages which may occur to the stock, and is responsible to the owner for their safe return. But in this case there was no liability whatever. The respondent's own testimony, as cited by the appellant, plainly shows this, and shows that the defendant had the sheep at his own ranch. We will here insert a brief excerpt from the testimony: "Question. Did not the defendant have them at his own ranch or camp the whole time you were working for him? Answer. He was moving them from one place to another, the same as the rest of them does. Never had any particular place, except in the winter. Q. But he always had a camp where they were brought at night, did he not? A. He did. Q. And in the winter time would take them to a suitable place for the winter? A. Yes, sir. Q. While you were herding, did he have any one else helping with the sheep? A. Yes. Q. Who? A. I could not name them. He never kept a man over a week, except myself. Q. What were those other men doing? A. They were herding and packing and whatever came to hand around the camp. Q. The same as you? A. They was." Thus it will be seen that this particular herder had no more control or custody or possession of these sheep than the other herders who, he says, were employed by the owner of the sheep at the same time that he was herding them; that they were doing just about what he was doing; but that the owner was looking after their interests, providing the herding territory, and taking them to suitable places for the winter. The testimony all the way

The court records in Ford County, Kansas show little incidence of litigation over cowboy contracts. So it must be that other, extralegal considerations caused ranchers and foremen to honor their contracts. One possibility was coercion of the foreman by the cowboys. Everyone was armed, and the general experience of railhead towns was that alcohol-fueled gun violence was commonplace. It would have been a simple matter for the dozen or so cowboys associated with a herd to get riled up over the refusal of the foreman to pay them and to shoot him or threaten to do so until he paid. Rather than just attacking the foreman, the cowboys, who would have outnumbered him, and who had just driven the herd more than 1000 miles, would just round up the herd and refuse to release it until they were paid.[236]

> through shows so conclusively to our minds that this respondent never had these sheep intrusted to him, and that he never had the possession of them that is contemplated by the statute, that it would be useless to discuss it further.
>
> We are satisfied then (1) that the statute does not confer a lien upon a man who herds sheep for wages or by the day or month, and (2) that the complaint did not state facts sufficient to constitute a cause of action. It follows that the demurrer to the complaint should have been sustained . . . .

Id. at 619; *accord* McKee Live Stock Co. v. Menzel, 201 P. 52 (Colo. 1921); Loader v. Bank of Idana, 216 P. 264, 265 (Kan.1923) (citing Kelsey v. Layne, 28 Kan. 218 (Kan. 1882)) (holding that at common law there was no agistor's [sic] lien for pasturing cattle); Nat'l Bank of Republic of Salt Lake City v. Drulas, 214 P. 24, 26 (Utah 1923) (sheepherder had no lien on sheep).

In Mead v. Bockorny, 191 N.W. 626 (N.D. 1922), however, the North Dakota Supreme Court held that a lien statute did confer a lien on cowboys and sheepherders:

> [I]n cases like the one here, where a person is employed for the sole and express purpose of herding, feeding, and caring for certain live stock at a monthly wage, and where such live stock, though subject to the owner's orders and directions, and not in a strict, legal sense in the possession of the herder, nevertheless is in his custody and under his care.

Id. at 628; *accord* Nat'l Bank of Commerce v. McDaniel, 174 P. 286, 288 (Okla. 1918) ("[W]e have no doubt that such possession as persons employed in feeding, grazing, or herding domestic animals ordinarily have of the herds intrusted to their care by the owner is sufficient to create a lien in their favor under the statute, which is remedial in its nature, and therefore should be construed in favor of the class for whose protection it was enacted."); Lydell v. First Bank of Joseph, 132 P. 518, 520 (Or. 1913) (ordinary sheepherder paid a wage).

The Nebraska Supreme Court, in Becker v. Brown, 91 N.W. 178 (Neb. 1902), explained the purpose of most of the lien statutes:

> But we think that by our statute the legislature plainly indicated an intent to do something more than to extend to agisters the common-law lien of a bailee for hire. To such a bailee the law afforded no remedy except the retention of possession. . . . [T]he statute . . . provides that the lien may be foreclosed in the manner provided by law for the foreclosure of chattel mortgages—an act which of itself would defeat a common-law lien. This right was introduced by amendment, and is in substitution of provisions intended merely for protecting the agister's possession. It is significant of an intent to assimilate the lien in important particulars to that of a chattel mortgage, from which it does not now very materially differ.

Id. at 179.

236. *Cf.* Gardner v. Risher, 10 P. 584, 587 (Kan. 1886) (holding that defendant was entitled to set off another debt against cattle seized by plaintiff who had contract to herd 115 cattle and never received them).

A third, less violent possibility was simply reputational. The reputation of the foreman and the rancher played a big role in the recruitment of cowboys in Texas.[237] Honor was an important virtue for southerners, and forfeiting it was not a step to be taken lightly despite widespread fraud in other legal relations and in gambling. A foreman or rancher consistently cheating his cowboys would soon find himself unable to recruit cowboys for the next drive. Even if many of the cowboys were not repeat players, doing one drive and then drifting off to do something else, the informal grapevine back to Texas was robust. The foremen who did pay were contrasted with talk about those who did not at home. And there was plenty of time to gossip on the range and at the railhead.

Documentary evidence about the incidents of labor conflict and job action on the frontier and the course of such unrest is limited—and murky in content. Much ink is spilled trying to undermine the credibility of various sources – for example, Marxist ideology is sometimes pitted against superior literacy by the employers and their control of most of the contemporary press.

A better understanding of industrial relations on the range is nevertheless available from a careful analysis of what is known and relatively undisputed about cowboy labor markets and the physical characteristics of roundups, cattle drives, and waiting for the trains. The same basic principles applied to cowboy strikes that apply to strikes in general: A strike can be successful only if the employer can be discouraged from hiring competent striker replacements and if potential striker replacements can be discouraged from accepting the employer's offer of employment. In some cases, mere informational picketing and other publicity about the strike is enough to dissuade striker replacements, calling on their sense of class solidarity with the strikers. More often, however, strikers must use other means of persuasion, such as setting up picket lines to impede striker replacements' access to a struck facility physically. And, of course, varying levels of violence often are associated with such physical blockades. Employers respond by seeking law-enforcement assistance to remove the pickets or to limit their activities.

A herd of 500 to 1500 cattle required eight to fifteen cowboys to keep it under control while it was on the move. Larger herds required more cowboys. A refusal by a significant portion of this number to perform their duties would make successful completion of the drive impossible or result in such large losses of cattle that the profitability of the drive would be ruined. If cowboys stopped work in the middle of the drive, part way from its origin to its

237. ADAMS, *supra* note 61, at 5–6, 18–19 (extolling virtues of foreman); J. EVETTS HALEY, CHARLES GOODNIGHT: COWMAN AND PLAINSMAN 244–48 (1936) (describing qualities of good foreman).

destination, the foreman or any other rancher representative would be hard-pressed to find replacements and get them in place in a timely manner before the herd significantly strayed.

On the other hand, walking – or more accurately riding – off the job in the middle of a drive was completely inconsistent with a cowboy's duty of loyalty to his employer. These mostly teenaged and early post-teen cowboys were eager to earn badges of honor as upright members of a profession, and loyalty was close to the top of the list of professional attributes. Walking off the job easily could be seen as a childish tantrum, inconsistent with stoic manliness.

It would present a far less substantial moral quandary, however, for one of these young men to refuse to sign up for the beginning of a drive or to collect his wages early before the end of the drive. Concerted action at the end of the drive did not put much pressure on the cattleman, because he already had gotten most of what he wanted out of his cowboys. Likewise, the refusal by one or a few cowboys to sign on for a drive before it began put a rancher in a strong position to find a replacement workforce from essentially the same labor pool that produced the strikers. Even economic pressure associated with a mid-drive work stoppage could be contained because of the ease with which the strikers could be blacklisted and excluded from any further employment as a cowboy.[238]

All of these factors suggest that the cattlemen were in a much stronger position than the cowboys, and that probably explains the low incidence of strikes by cowboys identified as such. That does not exclude the possibility, however, that grievances over wages, other forms of compensation (such as find), and working conditions spilled over into other forms of conflict beyond mere work stoppages. Already, ranchers were arguing that the system of find was really a form of rustling. For their part, the cowboys knew how to look for mavericks and other strays as part of their job, and if they weren't on the job, they could devote full time to separating strays from the main herd and keeping them. It was not difficult to rationalize the morality of asserting a property claim to that which should have been theirs anyway.[239] The result was an intensification of the already high incidence of disorder on the frontier, infected by constant but contestable claims of criminality. Protesting

238. *See* Cox, *supra* note 19, at 103 (describing blacklists of troublesome cowhands and, sometimes, denial of employment to any cowboy with cattle of his own); WAR, *supra* note 6, at 27 (any cowboy owning cattle was blacklisted).

239. *See id.* (asserting that cowboy resentment of employers usually took the form of discourteous treatment of visiting absentee owners or theft of cattle).

cowboys could be labeled not only as criminal conspirators,[240] but also as rustlers.

The partisanship of most of the contemporary accounts – and many of the retrospective ones – makes it difficult to know for sure what happened and why. It is clear that waves of homesteaders from the East were arriving on the prairie and that their small farms impeded access to the range by the cattlemen. It is also clear that labor relations with the cowboys had become more poisonous with the influx of absentee ownership, foreign capital, and the efforts of the larger enterprises to cut costs to protect their profits as an excess supply of cattle developed.[241]

The basic rancher-homesteader conflicts intersected with, and became indistinguishable from, the rancher-cowboy conflicts. To some extent, the cowboys became settlers – that was their dream anyway, and at least a few of them succeeded. Rustling was a serious problem. Much of it was done by non-cowboy settlers, desperate for something to eat and surrounded by herds of potential food that regularly interfered with their farming operations. But much of it also was cowboys' exercising traditional find rights and cowboys or former cowboys embittered by lack of success in their wildcat work stoppages and eager to take revenge in small ways against the cattlemen by exercising something that used to be a right.[242]

At least one commentator finds the seeds of the Johnson County war and the other large-scale clashes involving deadly force as having origins in the labor conflicts of the early 1880s. One needs to be careful about this conclusion, however, because of Professor Lause's consistently Marxist interpretation of the entire period of industrial development.[243] Marxists need to find class conflict, and discovering ongoing conflict between the cowboy workers and the rancher capitalists serves that purpose.

Regardless of whether the level of violence in Johnson County and elsewhere qualifies as a quote "war," it is undeniable that the ranchers, while they may have won these battles, lost the broader metaphorical "war." Their losses

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240. *See* Clune v. United States, 159 U.S. 590 (1895) (affirming conviction of railroad strikers for criminal conspiracy to obstruct the U.S. mail).

241. *See* WAR, *supra* note 6, at 22 (hostility to foreign investors meant that rustling amounted to retribution by settlers and small ranchers, including cowboys).

242. *Miners, Vigilantes & Cowboys*, *supra* note 104, at 669 (describing treatment of cowboys claiming mavericks as rustlers and high level of violence that accompanied disputes); *see* WAR, *supra* note 6, at 109–10 (describing layoff of cowboys, who resorted to homesteading, and were then blacklisted); *id.* at 31–33 (falling prices led bigger operators to cut cowboy wages to prohibit cowboys from owning cattle and to eliminate "riding the grubline," which had enabled cowboys to be fed and housed during the winter). The cowboys also employed apparently benign means of resistance, but the large cattle interests viewed those initiatives as nearly indistinguishable from rustling. *See id.* at 160 (describing how smaller operators organized their own roundup).

243. *See* LAUSE, *supra* note 86, at ix-xi, 21 (emphasizing class-based violence).

and financial embarrassments were due not to rustling by settlers or by cowboys who wanted to get even; they were due to a business model that had become obsolete. The causes were overgrazing and inability to manage the range against it, windmills, barbed wire, railroad technology, and larger-scale, more efficient meatpacking. Technology and entrepreneurship were determinative, but they manifested themselves in conflicts over land. Some—maybe a lot—of the land conflict had its roots in labor conflict.

C. SELF-HELP

A consistent theme of the preceding subsections of this Article pertaining to the role of law is that self-help was the centerpiece of reality. The law of the range existed before formal legal institutions existed to articulate it in common-law doctrines or statutes and before judges and sheriffs were available to enforce it. Cattlemen and cowboys relied on self-help, as the preceding subsections have described.[244]

Self-help was the norm even after the law came to town. In a self-help world, whoever was stronger prevailed in the conflict. Strength could come in numbers, as when the cattle drive cowboys came into a cowtown and overpowered small numbers of merchants and settlers. Or it could take the form of greater physical prowess and firepower, factors that also advantaged the cowboys over the townies.

Whether or not the norms had hardened into the common-law doctrine or statutory provisions,[245] the means for enforcing them was self-help. Property law was enforced by protecting or regaining possession by superior force—deadly force if necessary.[246] The most important form of compensation for the cowboys—find—was enforced by simply taking the mavericks and branding them with an individual cowboy's brand. Wage claims were enforced by refusing to relinquish the herd of cattle.

The initial influx of formal legal assistance took the form of the weaker parties hiring someone who was physically imposing. Wyatt Earp was six feet tall in a world in which most men were 5'6" or less, was able to shoot aggressively and well, and was backed up by the law. The legal imprimatur mattered in two respects. First, it legitimated recruitment of larger numbers

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244. *See generally Hayek & Cowboys*, *supra* note 188 (discussing pre-legal rule formation and enforcement and giving examples from open-range ranching in the American West).

245. *See id.* at 46 (describing how Wyoming ranching interests converted private norms into statutory law).

246. *See id.* (noting how range wars, such as the one in Johnson County, Wyoming, resulted from lack of success in enforcing traditional norms); WAR, *supra* note 6, at 183–227 (describing "invasion" of Johnson County by cattlemen's association interests backed up by gun thugs recruited from Texas and the ensuing armed resistance by Johnson County locals).

under the concept of posse comitatus. The common-law doctrine of posse comitatus empowered the sheriff of the county to call out every able-bodied male citizen to assist him and obligated the citizens to respond to his command.[247] Second, it clothed violence used by the hired enforcer with various kinds of privilege that extended to law-enforcement officers but not ordinary citizens.[248] The cowboys didn't need this; the townies did, and thus they hired Wyatt Earp and his brothers and Bat Masterson and his brothers.[249]

There was not much pretense of neutrality. These lawmen unambiguously worked for the faction that controlled the town and usually were themselves proprietors of entertainment establishments. Their job was to protect the interests of the merchant group. What evenhandedness there was resulted in a desire by the merchants to strike a middle course between protecting their property and their families – and themselves – against violence, while still providing an inviting cowboy playground.

Not only hired guns, but also technology, reflected self-help. Fencing, discussed above, represented physical enforcement of property law. Before fencing, obtaining relief against a trespasser depended on detecting the trespass and winning a lawsuit. Now, the trespass could be prevented, ab initio, by erecting a barbed-wire fence.

D. RAILROAD AND COMPETITION REGULATION

Railroad freight rates, "monopolies," and "conspiracies in restraint of trade" feature prominently in the historical rhetoric of the American Industrial Revolution. Anticompetitive contracts, freight-rate levels and differentials, and industrial concentration certainly influenced the forces of supply and demand. They also, however, represented political lightning rods for those dissatisfied with change—the victims of Creative Destruction.

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247. *See* United States v. Dreyer, 804 F.3d 1266 (9th Cir. 2015) (en banc) (affirming conviction for child pornography despite assistance to civilian law enforcement by U.S. Navy investigators). "Posse comitatus (literally 'power of the country') was defined at common law as all those over the age of 15 upon whom a sheriff could call for assistance in preventing any type of civil disorder." *Id*. at 1272 (citing H.R. Rep. No. 97–71, pt. 2, at 4 (1981)); *see also* David B. Kopel, *The Posse Comitatus and the Office of Sheriff: Armed Citizens Summoned to the Aid of Law Enforcement*, 104 J. CRIM. L. & CRIMINOLOGY 761 (2014) (describing details of common-law power and obligation).

248. *See* Atwater v. City of Lago Vista, 532 U.S. 318, 343–45 (2001) (reviewing common-law powers of peace officers as compared with ordinary citizens); Commercial Union Ins. Co. of N.Y. v. City of Wichita, 536 P.2d 54, 63 (Kan. 1975) (characterizing common-law duty of peace officer to keep the peace); Bukaty v. Berglund, 294 P.2d 228, 265–66 (Kan. 1956) (recognizing common-law privileges of peace officers).

249. *See* YOUNG, *supra* note 1, at 93.

Railroad freight rates mattered a lot in shaping the supply chain for beef. If rates had been low from Texas railheads to eastern destinations, the cattle drives never would have developed. After they developed, whether the rate was lower from Abilene, Ellsworth, Dodge City, or Ottumwa largely determined the attractiveness of those destinations for the drives. And as Montana, Wyoming, and the Dakotas acquired their own herds, relative rates from those places mattered just as much. A low rate from Cheyenne, Montana could tip the balance toward cultivating a local herd in Montana and shipping from there rather than driving cattle from Texas to a railhead in Kansas.

In the 1890s, controversies over rail rates for beef from Kansas dominated Kansas politics.[250] The cattle interests had reliable data showing that the rate per pound was significantly greater in the region that included Kansas than in eastern territory.[251] The railroads, for their part, had reliable data showing that the density of traffic was far less in Kansas than in the East,[252] meaning that average costs were higher because high fixed costs had to be spread over less freight.[253]

Rail rate regulation is always beset by ferocious controversies over allocation of fixed costs, and the uproar in Kansas was no exception. Sorting out a solution was complicated further by the reality that transportation rates charged by a viable enterprise must be determined not only by cost, "fairness," and equal treatment, but also by competitive threats. Thus, rate regulators, including state commissions and the Interstate Commerce Commission, all considered competition from other modes such as water transport when deciding on a fair and reasonable rate. If a rate must be lowered for one origin-destination pair to meet intermodal competition, a railroad must charge higher rates elsewhere, where it has less competition, in order to earn an adequate rate of return.

The Kansas Supreme Court, in *State v. Johnson*,[254] struck down the state "Court of Visitation," which had before it a challenge to the Santa Fe Railroad's move to weight-based rates rather than per-car rates. The complaint before the court of visitation claimed that "shipment of a car of cattle from Eldorado to Kansas City, Kansas, about forty-two ($42.00) dollars per car, as against the charge of thirty-six and 20/100 ($36.20) dollars per car made

250. *See generally* Donald E. Press, *Kansas Conflict: Populist Versus Railroader in the 1890s*, 43 KAN. HIST. Q. 319 (1977).

251. *Id.* at tbl. 1 (comparing receipts per ton mile of freight).

252. *Id.* at tbl. 2 (comparing freight densities).

253. *Compare id.* at text accompanying notes 9–11 (summarizing railroad rhetoric against Kansas Farmers Alliance), *with id.* at text accompanying notes 12–27 (describing Populist control of legislature and its effect).

254. *See* State v. Johnson, 60 P. 1068, 1069 (Kan. 1900).

prior to December 1, 1899."[255] The court held that rate setting was a legislative function, which could not constitutionally be delegated to a judicial body, which the court of visitation concededly was.[256]

> This act undertakes to give the court of visitation authority to act as legislator and judge in the same matter; to prescribe for the future regulation, government, and control of corporations, persons, and property; sit in judgment on its own rules, regulations, and laws; render judgments between parties; impose penalties, to the extent of imprisonment, for any adjudged violations; and accompanying these powers so conferred are numerous and important functions which are essentially executive.[257]

Wrangles continued over railroad taxation and a general movement to lower freight rates across the board.[258]

E. IF THINGS HAD BEEN DIFFERENT . . .

Given the thesis of this Article—that property-law doctrines and the availability of enforcement mechanisms gave rise to the cattle drives and then brought them to an end—it is reasonable to speculate how different property regimes might have brought about a different pattern of beef supply and distribution. If, for example, the public domain had been smaller, or if the law had not permitted free use of grazing land by cattle herds, cattle breeding and transport would have been pushed onto, and limited to, privately owned land. One can imagine, for example, application of the Texas property regime to all of the plains states. Then, the pattern of land use in Texas[259] likely would have been replicated in Kansas, Nebraska, Wyoming, and Montana. This would have increased the production cost for beef, ratcheting up the cost of land as a factor of production. The result would have been a reduction in the equilibrium volume of production – in other words, a shift in the supply curve to the left.

The unavailability of public lands for transportation by driving the cattle on the hoof to railheads would have required substitution of other forms of transportation. Rail transportation is the obvious alternative, and given where the largest herds of cattle were at the beginning of the cattle drive, the most logical locus for rail transportation would have been railheads in Texas. This,

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255. *Id.*
256. *Id.* at 1074.
257. *Id.* at 1075.
258. *See* Press, *supra* note 250, at text accompanying notes 30–40.
259. *See Miners, Vigilantes & Cattlemen*, *supra* note 104, at 43 (contrasting Texas, where state policy led to large private land holdings where the right to exclude others determined production functions, with remainder of Great Plains, where substitutes for ownership were necessary).

assuming that rail-rate structures remained constant, would have increased the cost of transportation, also shifting the supply curve to the left and resulting in a lower equilibrium level of supply. There would have been no long cattle drives, only shorter ones entirely within Texas.

Another possibility is that the public lands would have remained available for open-range cattle raising and driving, but homesteading law turned out different, favoring much larger private land holdings. A West without homesteading laws would have favored settlement on larger parcels of land more suitable for cattle grazing as compared to the relatively small parcels of 160 acres under the Homesteading Acts. Then the pace of small farm settlement would have been slower.

If labor law had been different, the conflicts at the end of the cattle drive would have been different. Had the National Labor Relations Act[260] applied to open-range ranching, for example, the cowboys could have organized formally[261] and been entitled to bargain over, and perhaps to block, adverse changes in their terms and conditions of employment,[262] particularly the retraction of the find privilege.[263] This would have shifted the arena of conflict from property law (trespass to land and rustling) to labor law (failure to bargain in good faith).

On the other hand, one should not make too much of this speculation about the effect of application of modern labor law. The fragmented nature of the cattle-drive workplaces and the other forces discussed earlier that determined the balance of power between cowboy and cattlemen would have weakened collective bargaining even if it had been legally sanctioned.

V. CONCLUSION

Stages in the Industrial Revolution, framed by the process of Creative Destruction, occurred in different industries at different times. Advances in the production function combining the factors of production – land, labor,

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260. National Labor Relations Act, Pub. L. No. 74-198, 49 Stat. 449 (codified as amended at 29 U.S.C. §§ 151–169 (2018)).

261. *See* 29 U.S.C. § 157 (2018) (granting right to organize and to bargain collectively).

262. *See id.* § 158(a)(5) (making it an unfair labor practice not to bargain in good faith). Section 8(a)(5) has been interpreted to obligate employers to maintain the status quo until they have exhausted their duty to bargain with their employees. *See* NLRB v. Katz, 369 U.S. 736, 743 (1962) ("We hold that an employer's unilateral change in conditions of employment under negotiation is similarly a violation of § 8(a)(5), for it is a circumvention of the duty to negotiate which frustrates the objectives of § 8(a)(5) much as does a flat refusal.").

263. The NLRA obligates employers to bargain over, and to maintain the status quo with respect to, only "mandatory subjects of bargaining." *See* Fibreboard Paper Prods. Corp. v. NLRB, 379 U.S. 203, 210–12 (1964) (explaining concept of mandatory subjects of bargaining and holding that contracting out of bargaining unit work was a mandatory subject). Understanding find as an element of a cowboy's compensation package would have put it squarely within the class of mandatory subjects.

capital, technology, and entrepreneurship – impacted different products and services differently. The cattle drives were a highly visible manifestation of changes in the production function for beef in the initial stage of the Industrial Revolution in the food industry.

Cattle drives occurred because of two major changes in technology – railroads and refrigeration. They declined because of advances in other, narrower, technologies – steel plows, windmills, and barbed-wire fences. Law—especially property law—and entrepreneurial creativity shaped their onset and brought about their demise. Capital surpluses hastened their demise.