USE, ESTEEM, AND PROFIT IN VOLUNTARY PROVISION: TOLL ROADS IN CALIFORNIA, 1850–1902

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Early Californians took stock in toll roads for a variety of reasons: use of the road, esteem of fellows, and profits from stock. Whatever the motivation, in operation all toll road companies felt the profit motive. This paper presents a historical survey of voluntary organizations taking the stock-corporation form. These cases demonstrate how various motivations and incentives intermingled and supported one another in the days before the corporation was legally bifurcated into either "for-profit" or "not-for-profit" enterprise.

I. INTRODUCTION

Sometimes individuals form an enterprise not in anticipation of handsome residual returns, but rather for their own use. If the user group is large and the project requires numerous contributors, there may be an incentive to free ride. The group might overcome the free-rider problem by virtue of social pressure, reputational incentives, participatory impulses, philanthropy, and so on—in brief, out of some form of *esteem*, especially the reciprocal esteem of neighbors.

During the nineteenth century, Americans undertook many improvement projects, not primarily for residual returns, but rather for use and esteem. Voluntary action helped to finance schools, libraries, hospitals, churches, canals, dredging companies, wharves, water companies, railroads, highways, and so on (Goodrich [1948]).[1] We call the set of motivations behind such efforts "use-and-esteem," in contradistinction to the quest for residual returns.

In studying the history of toll road companies in California, we see motives of both use-and-esteem and residual returns. Some road companies were initiated as business enterprises, aiming squarely at dividends. For other road companies, use-and-esteem motivations inspired a large number of community members to contribute; this we call "community enterprise." Also, there are the cases of use-and-esteem motives inducing a small number of wealthy parties to finance a road, which we call "coterie enterprise." In comparison to the earlier toll road movements in the eastern United States, the California toll road experience showed less of the community enterprise model and more of the business enterprise and coterie enterprise models.

Why should an enterprise ever be undertaken in the manner of use-and-esteem, rather than organized as a business? Use-and-esteem methods must stand in for the normal profit motive when an enterprise is unable to exclude nonpayers or charge appropriate prices.

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1. Recent historical studies that touch this theme include Beito [1990], Ellickson [1991], Foldvary [1994], Green [1993], Kiesling [1993], and Olasky [1992].

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Bruce Benson [1994] examines the private provision of policing and highways in old England and argues that obstacles to private provision stemmed from government policy rather than underlying technological conditions. For example, by barring toll-taking on highways, the government created a free-access common pool. Benson further argues that even once government policy has blocked the business enterprise, there still may be potency in the "use-and-esteem" methods of voluntary provision.

This paper presents a historical typology of voluntary organizations taking the stock-corporation form. In our study of toll roads, we indeed see the business enterprise hamstrung by government policy. But the road companies, even though often unprofitable and motivated by use-and-esteem, still operated with the possibility of positive residual returns. Thus the road companies took advantage both of financing appeals from use-and-esteem, and of organizational efficiencies due to residual-claimant incentives. This is a potent combination that today's law has eliminated by the legal bifurcation of "not-for-profit" and "for-profit" enterprises.

II. THE TOLL ROAD HERITAGE

In the 1790s Americans began building turnpikes—toll roads surfaced with gravel or earth—and over the next half century easterners built more than 600 of them, most with private funds exclusively. Turnpikes were popular throughout the Middle West and to a lesser extent the South. Later the toll road returned, as plank road fever swept the nation. Between 1847 and 1853 private initiative built better than 1,000 wooden roads.

Not ideology but pragmatics led Americans to privatize. Town, county and state governments were strapped for cash and bad at building roads, and the spirit of development led all states to release private initiative to the task. Compared to government road care, the turnpike company offered numerous organizational advantages. Turnpikes connected multiple towns or counties, so management transcended local government limitations, and organizers could appeal to prospective contributors along the entire route. Representing the stockholders, turnpike directors oversaw construction and operation to protect the interest of the road and to keep the traveling public and county turnpike inspectors satisfied. The toll-keeper was a vital figure, for he acted as security guard, custodian, handyman, and representative for the company. Most decisive and revolutionary of all, turnpikes charged users. Toll revenues replenished the pool of funds from which to pay out maintenance costs or dividends. Once a turnpike was put on its feet, it could run on its own. This lent a new willingness to undertake road construction.

In addition to generating a repair fund, however, toll-taking also generated some resentment. People were not used to paying for riding the highway, and it was hardly fair to charge local residents for using a public-trail-cum-turnpike for routine travel. Early opposition to turnpikes sometimes took the form of high-minded charges of aristocracy, corporate monopoly, and oppression of the poor. Remember, the turnpike was born in a day when the business corporation was regarded as a quasi-official body, charged with serving the public and acting within narrow limits set out by the legislature (Handlin and Handlin [1945]).

More common than general ideological opposition, however, was local remonstration seeking bargaining power in the terms of regulation. Concessions for local users were in order, and locals voiced their grievances to get what they could, or just to make a noise. The result, as Klein and Majewski [1992] argue for the case of New York in particular, was a turnpike system hamstrung by rigid regulations. Regulations affected toll rates, toll exemptions, toll collection, toll evasion, and road up-keep. The burden of regulation, combined with other factors,[2] rendered the vast majority of eastern turnpikes unprofitable.[3] As in Benson's [1994] discussion of the English turnpikes, government policy had, to some extent, turned the roads into common-pool problems, even though most users had to pay a toll.

In this situation many communities resorted to what we term here the *community enterprise* model of action. The impetus for taking stock was not dividends but gains that flowed from the use of the road: better transportation, higher land values, stimulated commerce, maybe just town pride. These benefits of a good road could not be withheld from those who declined to take turnpike stock, so organizers had to overcome a free-rider problem. In hundreds of cases this problem was met by social pressure, civic pride, and the participatory ethic. As Alexis de Tocqueville well noted, road improvement was but one goal for which community enterprise functioned throughout New England and the Middle Atlantic states. Had de Tocqueville seen California in 1860, he would have had a different story to tell.

III. TOLL ROAD BUILDING IN CALIFORNIA

California in the 1850s was not a land of settled communities, men with wives and children meeting in church, at civic functions, and around the town square, small farmers reading the town newspaper and coming together to forge community improvements. California, except for points along the coast, was a frontier marchland. Men—not women—poured into the state to hunt their fortune in the gold mines. They lived in mining camps, often in the employ of a mining company. Foreseeing the depletion of minerals, neither the miners nor the merchants who serviced them had mind to lay down roots. And even where farming later developed in the state, it did not take the form of a countryside of small farmers. Society in early California was not one where town meetings, door-to-door solicitations, and newspaper campaigns were likely to rally broad support for a road project.

Lawmakers in the new state went right to work writing a general law of corporations, including a chapter given over to turnpike and plank road companies.[4] After the initial law of 1850 was deemed ineffective, the legislature passed new laws in 1853 that eased company formation.[5] These laws reduced the subscription requirement to $300 per mile,[6] and left the county to set tolls at rates that would not prevent a return of 20 percent. They left companies to lay out the route themselves, specifying the county court to intercede in disputes between the company and private landowners. Although the 1853 laws preserved many restrictions and tightened a few others, the general effect was to loosen the restraints on entrepreneurial action and delegate regulation to the county level.[7]

2. The other factors causing unprofitability were rampant toll evasion (which was so severe partly because of regulatory constraints), competition from canals and railroads, and building ahead of development; see Klein and Majewski [1992, 505–6].

3. On turnpike unprofitability as a general condition throughout the eastern states, see Klein [1990, 791–93].

4. Chapter IV of Chapter 128 of *The Statutes of California*, 1850, 359f.

5. Chaps. 73 (April 22) and 121 (May 12), *Statutes of California*, 1853, 114–15, 169–76.

6. The 1850 law had required subscriptions of $2,000 per mile. For eighteen roads that were built, the average amount of stock subscribed at the time of incorporation, per mile, is $595. For a set of seventy-eight roads that includes both roads built and roads not built, the average stock subscription per mile is $680. Although these figures can be regarded only as low-ball estimates of average cost per mile, it is plain that the early requirement of $2,000 per mile was prohibitive.

7. The Act of May 12 increases the minimum number of incorporators from five to nine, and limits the toll-collection franchise to twenty years. Later codes provided for renewal of the franchise provided that the county assented. As for construction standards and toll exemptions, the May 12 Act seems to preserve the terms of the 1850 law, but the language of Sections 18 and 35 is so convoluted one cannot be sure.

In young California, settlement was fresh, roads were unofficial, land was open and abundant, and community custom was incipient. The local objections and negotiations common to toll-road builders back East were scant in California. Although there was no guarantee that county residents and officials would be friendly to a toll road effort, very often they were, and toll-road builders would carry on without much hindrance. After the 1853 law, toll road incorporation took off. We have Articles of Incorporation for 222 companies organized under the general law.

Yet more companies were created by special legislative act. Although the State Constitution (Sect. 34, Art. 4) expressly prohibited the creation of corporations by special acts "except for municipal purposes," the legislature chartered 102 toll road companies before 1870. Individuals sought incorporation by special act to obtain powers different from the general law.[8] Chartering by special act became a sore point with governors, who increasingly vetoed such acts in the 1860s. After a Senate Judiciary Committee strongly denounced special charters in 1868, an act amending the general toll-road law was fashioned in 1870.[9] Thenceforth, creation by special act practically ceased.[10]

Our data-base of toll road companies is further supplemented by approximately ninety companies or individuals we learned of by county records, local histories, and various other sources. Some of these outfits may be companies that filed with the county but failed to forward a copy of their incorporation papers to the Secretary of State, or they may be companies for which the incorporation papers have not survived at the state level. Also, it appears that sometimes counties were permitted to authorize toll roads without state incorporation.[11]

The progress of toll road incorporation, by all apparent means, is shown in Figure 1. Incorporation activity peaked in the 1860s when gold mining was still strong, and remained substantial until the 1890s, when government policy and public opinion across the country shifted against toll roads.

The geography of toll road incorporation is shown in Figure 2. The incorporation figures were highest for the counties of the Motherlode region of the Sierra Nevada Mountains. Although mining counties accounted for the majority of road incorporation in the period 1853–1875, toll roads were important also in the fertile Sacramento and San Joaquin Valleys, as well as in the desert and the city. Besides serving miners, toll roads served farmers, ranchers, lumber men, and San Francisco suburbanites. Of the 414 toll roads incorporated, represented in Figure

8. For example, a legislative charter might liberate a company from the requisite nine incorporators or the franchise limit of twenty years, or it might grant the company state lands or terms by which counties could contribute money to the project.

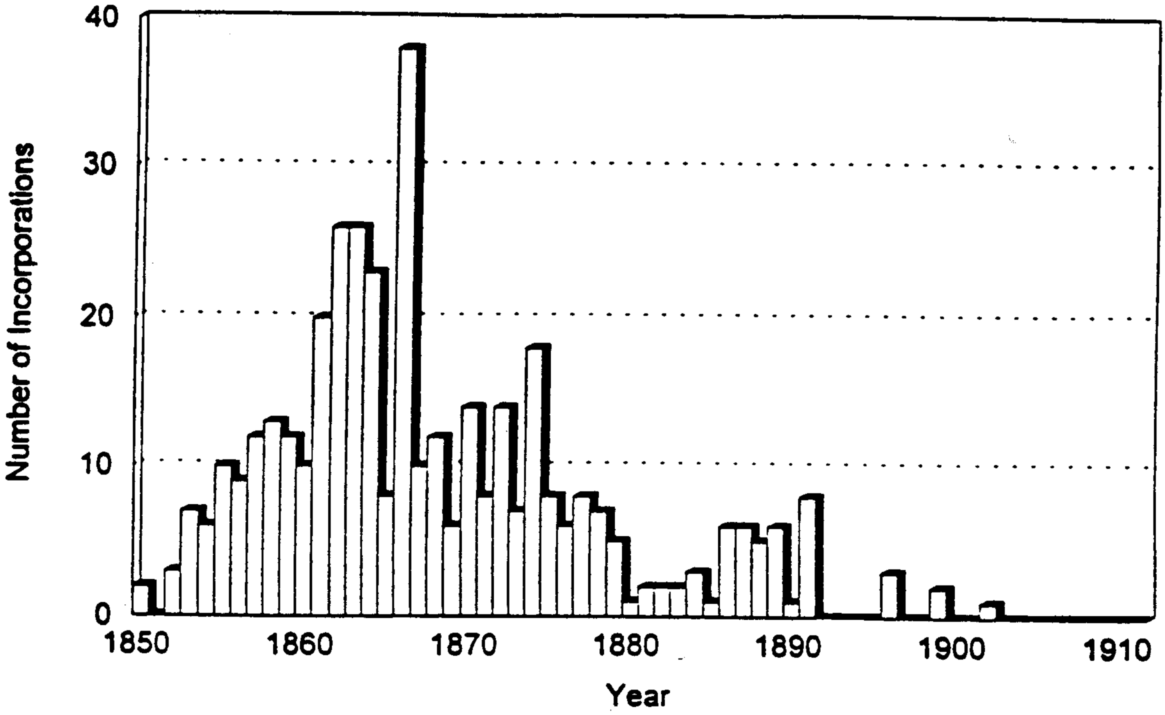
9. The 1870 law reduced the requisite number of incorporators to three and set franchise duration from ten to fifty years, depending on construction cost. The 1870 law was not an unqualified blessing to toll road entrepreneurs, however. It granted counties the right to purchase the road any time after five years from completion, on terms set by a committee half composed of men representing the county. Combined with other county controls, this option gave counties considerable power to take over roads. The 1870 law also specified a procedure for citizens to petition for reductions in toll rates.

10. After 1870 only ten companies were created by special act. In proportional terms, the ratio: (companies created by special act divided by companies created only by articles of incorporation filed under the general law) fell from 0.4 for the years 1850–69 to 0.1 for the years 1870–1902.

11. *Statutes of California*, Chap. 164, 1862, 162 authorizes El Dorado County to lease the Sacramento and El Dorado Wagon Road. This may have been the warrant for the county to lease the slew of roads that show no record with the state. Chap. 311, 1868, 350 gives Mendocino County the right to charter a "public toll-road." Chap. 628, 1878, 963 authorizes Amador County to declare a portion of a road a toll road (evidently under lease or public operation). Chap. 75, 1883, 299, entitled "An Act to establish a uniform system of county and township governments," authorizes counties to grant licenses and franchises for tolls on roads, bridges, etc. (p. 307).

12. Figure 1 represents fourteen fewer incorporations than does Figure 2 because in those cases we do not know the year of incorporation but do know the county.

FIGURE 1
Annual Toll Road Incorporations in California, 1850–1902



2, only 159 have been identified as actually constructed.[12] Probably several dozen more should be added, but are not done justice by surviving records. In virtually all cases, toll road companies were financed exclusively by private funds.[13]

IV. TOLL ROAD EXPERIENCES AND THE TYPES OF ENTERPRISE

The toll road experiences of California and the East were good examples of voluntary provision of a service often thought to be the province of government action. But the various toll road experiences differ, and a study of their differences helps us appreciate the different forms that private initiative can take. Here we distinguish the following three toll road experiences:

(1) The Turnpike Era of the eastern states, 1792–1845; the heart of this experience is in the New England and Middle Atlantic States, where funding was virtually entirely private (except in Pennsylvania[14]).

(2) The Plank Road Boom, 1847 to 1853, notably in New York, Pennsylvania, and the states of the Old Northwest; nationwide more than 10,000 miles of plank roads were built with money from private investors, who put a misguided faith in expert estimates of plank durability.

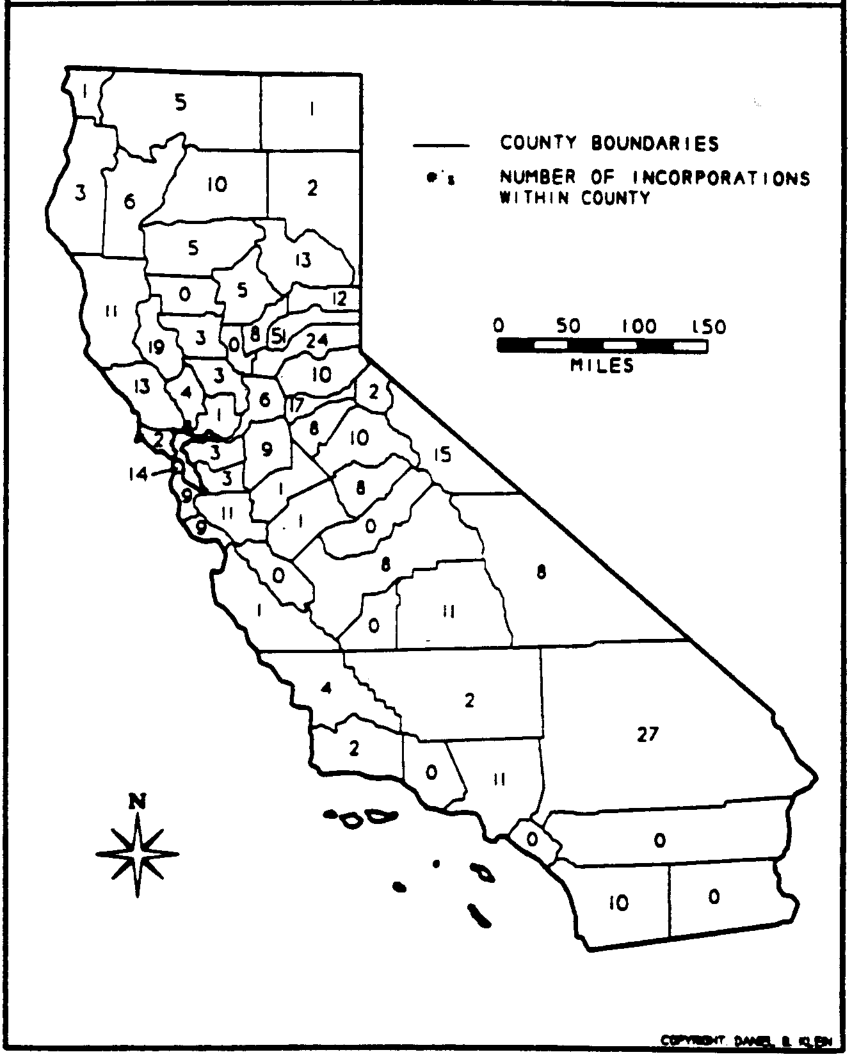
(3) The California toll road experience, 1850 to 1902; it seems that this was similar to the toll road experiences of Colorado and Nevada, so it might be that California fairly represents the toll road experience of the West in general.[15]

13. The State Constitution (Sect. 10, Art. 11) prohibits the state from holding shares in any corporation. As for county subsidization of toll road companies, county trails were often granted, and in a few cases counties were permitted by legislative act to contribute funds (e.g., in Plumas County, Chap. 392, *Statutes of California*, 1868, 480).

14. In 1806 the Pennsylvania state government began subsidizing turnpikes by purchasing stock. In 1822 it held about 30 percent of the collective stock of the turnpike companies; see Durrenberger [1931, 55, 102].

15. On toll roads in Colorado, see Cummins [1952], Kaplan [1975], Ridgway [1932]; in Nevada, see Beito [1993].

FIGURE 2



California Toll Road Incorporations by County, 1850 - 1902

In comparing these three experiences, we focus on two features. The first is the impetus for the individual's decision to subscribe to toll road stock. In the simple case the individual takes stock simply because he thinks it will pay dividends or go up in value; his impetus is residual returns. Alternatively, the individual takes stock either because he values use of the prospective road and believes that his contribution will make a difference, or because he responds to some sense of community esteem, aroused by neighbors or springing from his own breast. Hence we divide the impetus for subscription into residual returns and "use-and-esteem." (Strictly speaking, the latter should be understood as "use-and/or-esteem.")

The second feature is the diffusion of stock participation. Here we make the separation between diffuse participation and concentrated participation. For example, more than forty stockholders is very diffuse, twenty-five is diffuse, ten is concentrated, and five is very concentrated. Greater stock diffusion makes it less likely that individual investors participate from a belief that their contribution will make a difference in road conditions.

With the two features each divided into two categories, we get a two-by-two typology of voluntary enterprise. The type with

FIGURE 3

Comparative Interpretations of the Eastern Turnpike Era (1797–1845), the Plank Road Boom (1847–1853), and California's Toll Road Era (1850–1902)

IMPETUS FOR SUBSCRIPTION

STOCK PARTICIPATION	Use-and-Esteem	Residual Returns
Diffuse	Community Enterprise 65% in Tpk Era 35% in Pk Rd Boom 15% in California	Diffuse Business Enterprise 10% in Tpk Era 25% in Pk Rd Boom 5% in California
Concentrated	Coterie Enterprise 15% in Tpk Era 20% in Pk Rd Boom 30% in California	Business Enterprise 10% in Tpk Era 20% in Pk Rd Boom 50% in California

use-and-esteem and diffuse stock holdings we term the "community enterprise" model; this was dominant in the early turnpike movement. The type with use-and-esteem but concentrated participation we term the "coterie enterprise" model. To some extent we can unpack "use-and-esteem": the proportion of use motives to esteem motives is surely smaller for community enterprise than for coterie enterprise, since with a large number of contributors it is unlikely that one's own contribution will affect the attainment of use.[16]

When the impetus is residual returns we term it a "business enterprise" model, and when many investors participate, the "diffuse business enterprise" model. The business enterprise model was much more pronounced in the California experience.

Figure 3 shows the typology. Keep in mind that the columns address themselves only to the impetus for stock subscription. Even when the primary impetus is use-and-esteem, the road companies nevertheless were structured to earn residual returns *in operation*. Even an unprofitable community enterprise felt the profit motive in operation.

In Figure 3 interpretations of the three toll road experiences are expressed in terms of the types of enterprise. The percentage figures shown there are an expression of interpretation: they are not derived from a rigorous criterion. The figure of 65

16. The themes of diverse motivations and community enterprise are explored by Majewski [1994].

percent community enterprise for the eastern turnpikes means *not* that 65 percent of those turnpikes were community enterprises, but rather that in a description of the experience as a whole, community enterprise deserves about 65 percent of the emphasis. Any one company will, of course, involve both use-and-esteem and the hope of residual returns, and may even exhibit elements of both diffuse and concentrated participation (for example, a company in which two people hold half the stock and thirty others divide the other half equally). There are elements of multiple types of enterprise in every company, and the magnitudes in Figure 3 are meant only to express a learned impression of aggregate proportions. As shown in the figure, that impression discerns a progression away from the community enterprise model and toward the coterie and business enterprise models.

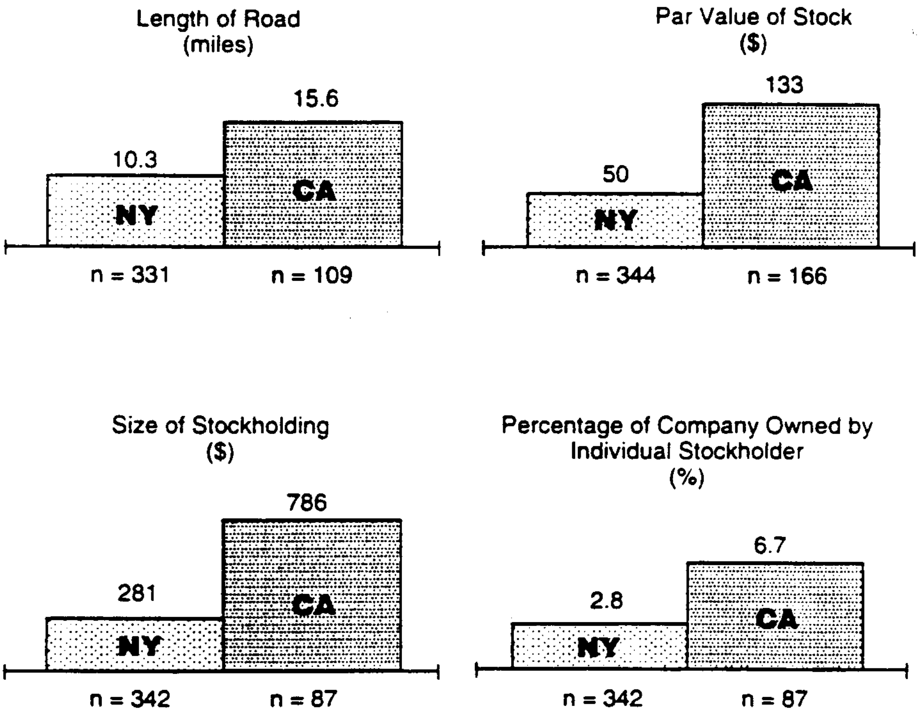
Compare the eastern Turnpike Era to the Plank Road Boom. Notice that for the turnpikes the residual returns impetus is given a total percentage of 20, whereas for plank roads it is up to 45. There are numerous indications of a more business-enterprise orientation for the plank road era. For starters, the plank road company arrived fifty years after the turnpike company did, and during those fifty years the private corporation had undergone some of its transformation from quasi-public body to private venture enterprise. One feature of that transformation was freedom of all comers to organize under general laws, as the plank roads were organized, rather than by grace of special legislative charter, as the turnpikes were organized. Furthermore, the terms of organization and operation in the Plank Road Era were more favorable to toll road operators than had been the case in the Turnpike Era.[17]

Other signs of business orientation are seen in the feverish boom pattern of the plank road movement, and in the high rate of completion. Nearly as many plank roads were incorporated in New York and Pennsylvania in the span of five years as turnpikes had been in the previous fifty. And, for New York, whereas only about 40 percent of the turnpikes were actually built, probably 80 percent of the plank roads were. For turnpikes, unprofitability was known early and financing had to overcome the free-rider problem of community enterprise. For plank roads, investors often anticipated substantial direct returns. One reason investors were fooled so badly is that in the first few years wooden surfacing did serve excellently and made money. News of plank road success spread rapidly, and by early 1850 numerous manuals were touting the excellence *and profitability* of plank roads. In general the promotional literature and local boosterism of the plank road movement paid much more attention to the prospect of dividends than had the script of the turnpike movement. But by 1852 everyone was learning that plank deterioration set in rapidly and made travel very hazardous. By that time thousands of miles had been initiated.

Although the plank road episode represented a shift toward business enterprise, there was still a large role for use-and-esteem. The hope of profit was nice, but equally nice was that company solvency would mean the long awaited deliverance from bad road conditions. Klein and Majewski [1994] argue that community enterprise continued to play a large role in the plank road movement of New York, and Majewski, Baer, and Klein [1993] argue that plank road investment came especially from towns bypassed by canals

17. Compared to the regulations of the early Turnpike Era in New York, the regulations of the Plank Road Era were more favorable to the enterprise in the following ways: adjusting for *deflation*, toll rates were higher, tollgates were separated by shorter distances, and fewer local travelers were exempted from payment of tolls; *Laws of New York*, Chap. 210, 1847, 226; Chap. 360, 1848, 480; Chap. 250, 1849, 374; Chap. 71, 1850, 80.

FIGURE 4
Comparison of Means
New York Plank Road Boom vs. California Toll Road Experience



and railroads and experiencing relative decline.

When we compare the Plank Road Boom to the California experience, we again see a shift toward business enterprise and a major shift toward stock concentration. We have gathered data from articles of incorporation, filed at the Office of the Secretary of State, both for New York's plank roads and California's toll roads. These incorporation papers, though incomplete, give data on authorized capital, amount subscribed at the time of filing, stockholders, and road length.

California was a land of bigger roads and bigger money. The panels of Figure 4 show that mean length of the road was 50 percent larger in California, mean par value of stock was 166 percent larger, mean stockholding was 180 percent larger, and mean portion of company held by an individual stockholder was 58 percent larger. Rather than comparing the mean number of stockholders (thirty-six in New York versus fifteen in California), the concentration of stock in California is perhaps better seen by comparing the median number of stockholders: twenty-eight in the New York plank road boom versus just eight in California.

Higher par values, larger holdings, and fewer stockholders in California all speak of a step away from community enterprise, in which toll road organizers entreat their neighbors to take a little stock. The social history of California—sparse settlement, frontier living, a transient population—all argue against community enterprise and in favor of a social and legal tolerance for profit-making. Were the roads themselves profitable? Actually, we hardly have a clue. One historian [Bartlett 1940, 205] had this to say: "These various toll roads in Trinity and Shasta Counties like those in many other counties of the State, were constructed with the belief on the part of their builders that they would prove remunerative pieces of property.... The receipts of the roads were not what their builders had anticipated, and the expense of repairs and maintenance was far beyond what they had calculated." Although we know of a few roads that were profitable and a few that were not, we are not able to improve much on this quotation, which comes from a man who lived those times. A Master's student in history (Petershagen [1991, 1]) wrote that California toll roads were "built and maintained by pioneer businessmen as profit-making ventures."

Trinity and Shasta Counties, lately mentioned, were mountainous mining counties. One might expect that there would be differences between roads in mining counties and roads in agricultural counties. We divided the counties into rough categories and in fact did not find substantial differences in par values, mean size of stockholding, or number of stockholders. To our surprise, the agricultural counties showed no more sign of community enterprise than the mining counties. One explanation for this is the large size of land holdings in California compared to New York. The mean farm size in California for the years 1860, 1870, and 1880 remains roughly four times that in New York for the year 1850. The number of farms of 1,000 acres or larger in California for the years 1860, 1870, and 1880 increases from 12.5 times to 120 times the number of such farms in New York for the year 1860 (U.S. Census [1885, 653, 657]). In other words, California had big players who could take a large stake in a local road project, whether in hopes of residuals or use.

V. CALIFORNIA EXAMPLES OF THE TYPES OF ENTERPRISE

Although the impetus of residual returns was more pronounced in the California toll road experience, the poor condition of roads and the ineffectiveness of government meant that the use motive would also impel toll road efforts. Unlike the early turnpike era in which many members of the community came together to finance a vast improvement, in California big-stakes individuals and organizations would get together in small groups to underwrite a road—what we call "coterie enterprise."

Mining companies were a natural to stake a toll road company. The Plumas Ereka Mining Company took 41 percent of the stock subscription in the Plumas Ereka Turnpike Company, but specified that its shares were "unassessable until the Road is finished."[18] The Great Western Quicksilver Mining Company built five of the nine miles of the Ida Clayton Wagon Road, which led to the mine, in exchange for "perpetual right of way, free of toll" for affiliates of the mine.[19] Another case is Reed's Turnpike, incorporated in 1865 and built from the Union Copper Mine in Copperopolis. "This toll road was developed by the same Reed [the company treasurer] who was co-discoverer of the Union Copper Mine, and was built with profits from the sale of that mine."[20] Although the impetus for Reed's investment is not clear, one historian notes that "[m]uch of the ore from the mines was hauled over this road" (Wood [1955, 141]). The Pitt River and Copper City Toll Road Company (1879) was to be constructed a half mile from the Extra Mining Company Mill, and one man held 96 percent of the company.[21]

Mining companies were not the only sort of venture interested in building roads. The Highland Lumber Company

18. Articles of Incorporation, Plumas Ereka Turnpike Road Company, 1878.

19. Articles of Incorporation, Ida Clayton and Great Western Wagon Road Company, 1874; Goss [1958, 90].

20. Articles of Incorporation, Reed's Turnpike, 1865; Mace [1991, 130].

21. Articles of Incorporation, Pitt River and Copper City Toll Road Company, 1879.

built the City Creek Toll Road (1891), and the Arrowhead Reservoir Company built the Arrowhead Toll Road (1891) (Ingersoll [1904, 181]). The Yosemite and Mariposa Short Line Stage and Wagon Road Company, owned in equal portions by five individuals, was incorporated in 1886 to build a toll road and "to operate a stage line in connection therewith for the transportation of passengers, mails, and freights."[22] Elsewhere in California the toll road business was mixed with staging and freighting businesses (Colby [1982, 35–36]; Petershagen [1991, 41–47]). And in Pasadena thirteen residents received a franchise in 1889 to build a toll road up Mount Wilson, where a photographing telescope from Harvard had been recently installed, and to build a resort hotel on the mountain. In 1891 the company completed the road and in 1904 its first hotel. The toll road operated until 1936, and the route is today still called the Mount Wilson Toll Road.[23]

These examples only begin to describe an extensive experience of coterie enterprise. A majority of toll roads were built by companies with investors that could be counted on the fingers of two hands. The investors may have been owners of large farms in need of better roads, or simply local well-to-do citizens moved to give something to the community.

A few road companies, particularly from the later years when communities had formed, should probably be put down as examples of community enterprise. For example, fifty-two individuals took stock in the Bear Valley Wagon Road Company in the city of San Bernardino where all five directors resided. The par value was just one dollar. Two individuals divided 34 percent of the stock, but the third largest shareholder held just 3 percent. When the road was completed in 1891 it is very unlikely that residents expected dividend payments.[24] Another case is the Loyalton and Sardine Valley Toll Road Company. In 1874 the company was first organized as a business enterprise with a par value of $100, just five stockholders, and one with 71 percent of the company. This effort failed, and in 1881 the company was reorganized. The new company issued stock at five dollars a share, and was diffusely held by thirty-one individuals, presumably residents of Loyalton like the directors.[25]

We have a special case in the Highland Springs and Squaw Rock Toll Road Company, which exhibits a clear combining of concentrated use interest and community enterprise. An article in a local newspaper from 1891 reports as follows: John D. Stephens, "the owner of the springs[,] made a proposition to the people of the county that if they would take $5,000 in stock he would build the road. The people of Big Valley and Kelseyville succeeded in placing $3,000 of the amount in two days." In fact, Stephens evidently promised to match subscriptions one-for-one, for the company's papers show that he held $5,300 in stock while another $5,300 was divided between another fifty-one shareholders (forty-two of which each held exactly $100).[26] This is a case of one wealthy individual, who had a lot to gain from use of the road, altering the calculus of esteem to abet community enterprise. With concentrated use as the fulcum and community enterprise as the lever, together they got the twelve-mile road built in 1891.

22. Articles of Incorporation, Yosemite and Mariposa Short Line Stage and Wagon Road Company, 1886.

23. Reid [1895, 397f]; Shoop [1962].

24. Articles of Incorporation, Bear Valley Wagon Road Company, 1891; Ingersoll [1904, 181].

25. Articles of Incorporation, Loyalton and Sardine Valley Toll Road Company, 1874, 1881. Whether community enterprise succeeded where business enterprise had failed, we do not know.

26. Articles of Incorporation, Highland Springs and Squaw Rock Toll Road Company, 1891; *Dispatch Democrat*, April 24, 1891, p. 3, c. 3; typed transcript obtained from Mendocino County Historical Society. The road was also authorized to build and operate telegraph and telephone lines.

Despite these examples of use-and-esteem, we are still inclined to say that the impetus for residual returns was foremost. That impetus is quite evident, for example, for the numerous private toll roads that serviced tourism in the Yosemite Valley, many of which operated long before and long after the establishment of the National Park in 1890. Indeed, in 1875 the Yosemite Valley Commissioners declared that granting toll-road franchises was the best way to get roads into the valley since "private enterprise would ultimately accomplish all that was necessary and desirable much more economically than could be done by the state."[27]

For every mining company that kicked in for a toll road, there were numerous independent entrepreneurs seeking profit in toll payment. Consider the case of William S. Lowden, who controlled the Weaverville & Shasta Wagon Road and the Lewiston Toll Road, and at one time had a large interest in the Weaverville & Minersville Toll Road. A student of Lowden's toll empire wrote: "Lowden was not a dreamer, desiring to make his fortune by direct working of the gold fields. Instead, he [realized] ... at an early age that a large, sure fortune could be made by providing services for the gold fields" (Cage [1984, 45]). Lowden's enterprises enjoyed some flush days, but over forty-two years averaged very modest returns. He also reaped private returns, however, by working as hired contractor for the companies and by providing salaried employment to his mother, his brother, his brother-in-law, and his two sons, who worked as toll-keepers, maintenance men, and company officers. In the days before modern tax law and regulations, the private corporation was remarkably flexible in serving a variety of interests in a variety of ways.

27. California Commissioners to Manage Yosemite Valley [1876, 12].

VI. HIGHWAYS BY PRIVATE INITIATIVE

Whether the impetus was use-and-esteem or residual returns, toll road companies were voluntary, stock-financed corporations. All, even those we describe as community enterprise, were structured to earn residual returns in operation. In financing they often faced a free-rider problem, but in creation and operation they were flexible, resourceful, and economical to a degree that no contemporary government agency could match.

Furthermore, when undertaken as community enterprise, a toll road project gave purpose and pride to the community. Voluntarism inspires feelings of gratitude on the part of the beneficiaries and of generosity on the part of contributors. Voluntary association develops social capital. It gives people a story to make and belong to. Economists tend to neglect the fact that the provision process itself is a matter of well-being.

Although no one had much good to say about government road care of the time, many have remarked on the effectiveness of the toll road plan in California. Consider the following series of remarks from various counties:

> From an historian of Trinity County: The Shasta & Yreka Turnpike "was the main artery for interstate commerce between California and Oregon.... [Toll] roads are the most striking material monument which the builders of those days have left to show their broad vision, tireless energy, earnest belief, in the future ... of the Golden State."
>
> From an historian of Shasta County: "Where the going was rough the county did not build roads. Private money was spent in most instances."
>
> From an historian of Lake County: "In the early 1890's, all important routes into Lake County were toll roads.... [T]oll roads provided a very necessary service to the public when the government was in no position to do so."
>
> From an historian of Santa Clara County: People believed that "the most practical way to improve the county roads was to grant franchises for toll companies."

From an historian of Kern County: "Nearly all the early roads through the mountains were built by private enterprise as toll roads."

From an historian of Santa Barbara County: "The failure of the [public-sector] scheme ... to build a good road through the county had not discouraged the enterprising part of the people. Private enterprises were undertaken."

From San Joaquin County, an 1887 pamphlet on the county reports that "Stockton is connected with the surrounding country by a system of turnpikes and gravel roads, which are kept in good condition."

From El Dorado County, a historian of early inns writes: "[A]ltogether there were 15 or more [toll roads] between Sacramento and the Nevada state line. They paralleled the public roads at varying distances ... and while they were generally a little longer than the latter, their grades were somewhat less steep and they were better maintained."

From Nevada County, the county surveyor reported in 1862 that "[t]he principal thoroughfares through the county are toll roads." A historian of the county reports, "[mining development created a] demand for the construction of roads—a demand which the county governments could not meet ... Consequently, private enterprise had to be relied upon, with the result that most of the roads and bridges which replaced the former precarious pack trails were constructed and owned by individuals or by turnpike companies, and were operated for profit."[28]

In his Master's Thesis, George Petershagen [1991, iv] offers the following overall assessment for California: "the pre-twentieth century road system was a product of private initiative under government supervision."[29]

Of approximately 414 toll roads incorporated or franchised, only 159 have been determined to have been successfully built. We know very little about the others. We have been able to locate and map only 109 roads. (Maps are available from the authors.)

VII. CONCLUSION

When reading the following remarks from 1862 by the Nevada County Surveyor [1863, 121], one almost wonders whether the civil engineer had lately read Adam Smith:

> Experience seems to establish the fact, that if we would have good roads in the mountains we must look to private enterprise, rather than public spirit, to construct and manage them. Nothing less than the interest men feel in their own personal investments will induce them to do anything for a public highway. That interest is, however, enlisted by the establishment of toll roads, and probably the result is fully as beneficial to the community as though the county had undertaken their construction and management.

The incorporation papers of private companies in the nineteenth century only begin to reveal all the flavors of voluntary enterprise that assumed the corporate legal form. The standard script of corporate papers ever suggests to us the impetus of residual returns, but those papers might cloak a real impetus of use-and-esteem. In California, this was often present in the various cases of coterie and community enterprise. But notice that even for coterie or community enterprise, dressed in articles of incorporation, that special ingredient, "the interest men feel in their own personal investments," *was still operative*. The efficiency-enhancing effects of residual returns in operation may have helped to render projects more viable, including projects undertaken primarily for use-and-esteem.

The combining of these two ingredients—the appeal of use-and-esteem in fi-

28. Citations for the preceding indented quotations: Trinity County: Bartlett [1940, 190, 199, 205]; Shasta County: Colby [1982, 60]; Lake County: Simoons [1953, 364]; Santa Clara County: Foote [1888, 121]; Kern County: Morgan [1914, 65]; Santa Barbara County: Mason [1883, 135]; San Joaquin County: *San Joaquin Co.* [1887, 82]; El Dorado County: Cross [1954, 207] (Cross cites information in the El Dorado County Archives Road Book, p. 233, and his impression comports with the more extensive discussion of Greco [1955]); Nevada County: Nevada County Surveyor [1863, 121]; Hoover, Rensch and Rensch [1962, 120].

29. See also Nash [1964, 43–62, 122].

nancing and the incentive of residual returns in operation—is today severely undermined by the modern legal bifurcation of private initiative into "not-for-profit" and "for-profit" enterprise. Not-for-profit corporations can appeal to use-and-esteem but cannot organize themselves to earn residual returns. For-profit corporations organize themselves for residual returns but cannot very well appeal to use-and-esteem. Without the legal bifurcation, our own modern society might show less profit motive and more use and esteem. Maybe we would better recognize the esteem in trade and the trade in esteem.

If "the interest men feel in their own personal investments" was such an effective force, why were toll roads abandoned and shut down around the turn of the century—not just in California, but throughout the country? In California one can cite the rapid expansion of railroads and the depletion of minerals, but the central factor, in California and throughout the country, was the ideological and public-policy shift toward centralized government planning. In the field of road development, this new program expressed itself as The Good Roads Movement. Its drama was not so much one of public sector versus private sector, as centralized government agency versus decentralized anything. The public officials engineering the new system would scarcely tolerate independently operated highways. But the story of Progressivism's final extermination of the private toll road company in America must await another occasion.

REFERENCES

Bartlett, James W. "Annotations to Cox's Annals of Trinity County," in *Annals of Trinity County*, edited by Isaac Cox. Eugene: University of Oregon, 1940, 189–254.

Beito, David T. "Mutual Aid for Social Welfare: The Case of American Fraternal Societies." *Critical Review*, Fall 1990, 709–36.

______. "Desert Infrastructure Through Voluntary Action: Toll Roads in Nevada, 1852–1890." Unpublished manuscript, Department of History, University of Alabama, Tuscaloosa. 1993.

Benson, Bruce. "Are Public Goods Really Common Pools: Considerations of the Evolution of Policing and Highways in England." *Economic Inquiry*, April 1994, 249–71.

Cage, R. A. "The Lowden Empire: A Case Study of Wagon Roads in Northern California." *The Pacific Historian*, Summer 1984, 33–48.

California Commissioners to Manage Yosemite Valley. "Biennial Report." *Journal of the Senate of California*. Sacramento, 1876.

California Department of Highways (J. L. Maude, Commissioner). *Biennial Report*. Sacramento: A. J. Johnston, 1900.

California Governor's Messages (John Bigler). *Journal of the Senate of California*. Sacramento, 1856.

California Senate Judiciary Committee. "Report on Special Legislation." Appended to the *Journal of the Senate and Assembly of California*. Sacramento: D. W. Gelwicks, 1868.

California Surveyor General (S. H. Marlette). "Annual Report, Doc. 5." *Journal of the Legislature of California*. Sacramento, 1855.

California Surveyor General (S. H. Marlette). "Annual Report, Doc. 5." *Journal of the Senate of California*. Sacramento, 1856.

Colby, W. H. *A Century of Transportation in Shasta County, 1821–1920*. Redding, Calif.: Association for Northern California Records and Research, 1982.

Cross, Ralph Herbert. *The Early Inns of California, 1844–1869*. San Francisco: L. Kennedy, 1954.

Cummins, D. H. "Toll Roads in Southwestern Colorado." *Colorado Magazine*, April 1952, 98–104.

Durrenberger, Joseph A. *Turnpikes: A Study of the Toll Road Movement in the Middle Atlantic States and Maryland*. Valdosta, Ga.: Southern Stationery and Printing Co., 1931.

Ellickson, Robert C. *Order Without Law: How Neighbors Settle Disputes*. Cambridge: Harvard University Press, 1991.

Foldvary, Fred. *Public Goods and Private Communities: The Market Provision of Social Services*. Hants, England: Edward Elgar, 1994.

Foote, H. S., ed. *Santa Clara County, California*. Chicago: Lewis Publishing Co., 1888.

Goodrich, Carter. "Public Spirit and American Improvements." *Proceedings of the American Philosophical Society*, October 1948, 305–9.

Goss, Helen Rocca. *The Life and Death of a Quicksilver Mine*. Los Angeles: Historical Society of Southern California, 1958.

Greco, Joseph. "History of Highway 50 from Placerville to Virginia City, 1849–1869." M.A. Thesis in History, Sacramento State College, 1955.

Green, David G. *Reinventing Civil Society: The Rediscovery of Welfare without Politics*. London: Institute for Economic Affairs, 1993.

Handlin, Oscar, and Mary F. Handlin. "Origins of the American Business Corporation." *Journal of Economic History*, May 1945, 1-23.

Hoover, Mildred Brooke, Hero Eugene Rensch, and Ethel Grace Rensch. *Historic Spots in California*. Stanford: Stanford University Press, 1962.

Ingersoll, L. A. *Century Annals of San Bernardino County, 1769–1904*. Los Angeles, Calif.: L. A. Ingersoll, 1904.

Kaplan, Michael D. "The Toll Road Building Career of Otto Mears, 1881-1887." *Colorado Magazine*, Spring 1975, 153–70.

Kiesling, L. Lynne. "Moral Sentiments and Conspicuous Donation: The Distinction between Social Approval and Altruism in Private Charity." Unpublished manuscript, Department of Economics, College of William and Mary, 1993.

Klein, Daniel B. "The Voluntary Provision of Public Goods? The Turnpike Companies of Early America." *Economic Inquiry*, October 1990, 788–812.

Klein, Daniel B., and John Majewski. "Economy, Community, and Law: The Turnpike Movement in New York, 1797–1845." *Law & Society Review*, 26(3), 1992, 469-512.

______. "Plank Road Fever in Antebellum America: New York State Origins." *New York History*, January 1994, 39–65.

Mace, O. Henry. *Between the Rivers: A History of Early Calaveras County, California*. Sutter Creek, California: Gold Country Enterprise, 1991.

Majewski, John. "Commerce and Community: Economic Culture and Internal Improvements in Pennsylvania and Virginia, 1790–1860." Ph.D. Thesis, Department of History, University of California, Los Angeles, 1994.

Majewski, John, Christopher Baer, and Daniel B. Klein. "Responding to Relative Decline: The Plank Road Boom of Antebellum New York." *Journal of Economic History*, March 1993, 106–22.

Mann, Ralph. "The Decade after the Gold Rush: Social Structure in Grass Valley and Nevada City, California, 1850–1860." *Pacific Historical Review*, November 1972, 484–504.

Marin County Surveyor (Alfred D. Easkoot). "Report to State Surveyor General." Appended to State Surveyor General's 1861 Report. *Journal of the Assembly of California*. Sacramento, 1862, 19–20.

Mason, Jesse D. *History of Santa Barbara County, California*. Oakland: Thompson & West, 1883.

Morgan, Wallace M. *History of Kern County, California*. Los Angeles: Historic Record Company, 1914.

Nash, Gerald D. *State Government and Economic Development: A History of Administrative Policies in California, 1849–1933*. Berkeley: University of California Press, Institute of Governmental Studies, 1964.

Nevada County Surveyor (George E. Drew). "Report to State Surveyor General." Appended to State Surveyor General's 1862 Report. *Journal of the Assembly of California*. Sacramento, 1863, 119–22.

Olasky, Marvin. *The Tragedy of American Compassion*. Washington, D.C.: Regnery Gateway, 1992.

Petershagen, George F. "Toward a State Highway System: California's Roads and Highways, 1850–1895." M.A. Thesis in History, California State University, Sacramento, 1991.

Reid, Hiram A. *History of Pasadena*. Pasadena, California: Pasadena History Company, 1895.

Ridgway, Arthur. "The Mission of Colorado Toll Roads." *Colorado Magazine*, September 1932, 161–69.

San Joaquin County Surveyor (Duncan Beaumont). "Report to State Surveyor General." Appended to State Surveyor General's 1858 Report. *Appendix to Journals of the Senate of California*. Sacramento, 1859, 40–42.

San Joaquin County, California. Stockton, California: J. E. Ruggles, 1887.

Shoop, C. Fred. "Beginnings of Mt. Wilson Road." *Pasadena Star-News*, 21 March 1962.

Simoons, Frederick J. "Development of Transportation Routes in the Clear Lake Area." *California Historical Society Quarterly*, 32, 1953, 363–71.

United States Census. *Compendium of the Tenth Census, Part I*. Washington, D.C.: Government Printing Office, 1885.

Wood, Richard Coke. *Calaveras, The Land of Skulls*. Sonora, California: Mother Lode Press, 1955.