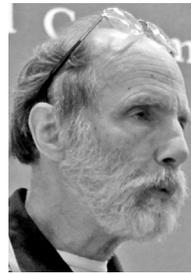


DECODING ECONOMIC IDEOLOGY

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Abstract: Economics derives its power from an illusion of scientific objectivity. From the very beginning of the discipline, economists have gone to great lengths to craft their work, excluding work, workers, and working conditions. Two particular episodes illustrate this failing. Adam Smith's story about the pin factory never mentioned that the pin manufacturers were working with the world's largest industrial operation in the world, located outside of Smith's little village and that the owners were close friends. The French documents, which he plagiarized, described pin makers' unhealthy working conditions. A much older steam-driven pin factory was famous. Finally, other than describing the division of labor work, workers, and working conditions mostly disappears from his work. After the Paris Commune, to respond to Marx, economists crafted marginalism, but, they opposed marginalism in their policy recommendations and organized the American Economic Association as a bulwark against marginalism.

Key words: political economy; ideology; marginalism; labor; history of economic thought; economic history

Introduction

Molière's 1670 play *The Bourgeois Gentleman*, presented before the court of Louis XIV, mocked a foolish, social-climbing merchant. In his effort to remake himself, the merchant takes lessons to help him pass as an aristocrat. In a basic lesson on language, he is both surprised and delighted to learn he had been speaking prose all his life without knowing it. Almost three and a half centuries later, much of the world finds itself speaking a different language—economics—also without full awareness.

As people become accustomed to their language, they restructure their brains as well as their manner of thinking. Sometimes only a little thought is required to see

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how language shapes our thought patterns. For example, the US press judges other governments' actions according to whether or not they displease the international community. Of course, the international community consists of those countries that support US economic policy. Through repetition, this terminology is intended to make uncritical support of US government policy become instinctive.

Clever verbal tricks are relatively easy; contriving an entire intellectual structure to inhibit critical thinking about society is more challenging. I do not need to rehearse the limits of conventional economic thinking. Its message is both well known and fairly simple, although commonly packaged in pseudo-scientific formalisms. My intention here is to show how the masters of economic thinking have intentionally concealed much of the economy from scrutiny—the same elements that played heavily in Marx's theory—in order to make their case. For example, in my recent book, *The Invisible Handcuffs: How Market Tyranny Stifles the Economy by Stunting Workers*, I emphasize how economists have consciously gone out of their way to eliminate considerations of work, workers, and working conditions; in effect, to remove any considerations of class.

Adam Smith's pin factory offers a perfect example. Smith offered a dubious description of a rustic workshop where a presumably wise capitalist was able to amplify productivity by introducing a division of labor.

Another Look at Smith's Famous Pin Factory

More than a decade before the publication of *The Wealth of Nations* Smith introduced his pin factory while lecturing to his students about the importance of the law and government. He began:

They maintain the rich in the possession of their wealth against the violence and rapacity of the poor, and by that means preserve that useful inequality in the fortunes of mankind which naturally and necessarily arises from the various degrees of capacity, industry, and diligence in the different individuals. (Smith 1762–66: 338)

In order to justify this inequality, Smith told his students that “an ordinary day labourer...has more of the conveniences and luxuries than an Indian [presumably Native American] prince at the head of 1,000 naked savages” (Smith 1762–66: 339). But then the next day, Smith suddenly shifted gears, almost seeming to side with the violent and rapacious poor:

The labour and time of the poor is in civilized countries sacrificed to the maintaining of the rich in ease and luxury. The landlord is maintained in idleness and luxury by the labour of his tenants. The moneyed man is supported by his exactions from the industrious merchant and the needy who are obliged to support him in ease by a return for the use

of his money. But every savage has the full enjoyment of the fruits of his own labours; there are no landlords, no usurers, no tax gatherers.... [T]he poor labourer...has all the inconveniences of the soil and season to struggle with, is continually exposed to the inclemency of the weather and the most severe labour at the same time. Thus he who as it were supports the whole frame of society and furnishes the means of the convenience and ease of all the rest is himself possessed of a very small share and is buried in obscurity. He bears on his shoulders the whole of mankind, and unable to sustain the weight of it is thrust down into the lowest parts of the earth from whence he supports the rest. In what manner then shall we account for the great share he and the lowest persons have of the conveniences of life? (Smith 1762–66: 340–341)

Smith’s train of thought is confusing. First, the law is needed to constrain the fury of the poor; then the market provides for the poor very well; followed by his description of the wretched state of the people who worked on the land—the least fortunate of the workers. Then, for his grand finale, after decrying the “small share” of the poor, Smith veers off to ask what accounts for “the great share” that these same people have. His answer should come as no surprise to a modern reader of Adam Smith—“The division of labour amongst different hands can alone account for this” (Smith 1762–66: 341).

Within a few days, Smith was confident enough about his success in finessing the challenge of class conflict that he became uncharacteristically unguarded in openly taking notice of the importance of workers’ knowledge:

But if we go into the work house of any manufacturer in the new works at Sheffield, Manchester, or Birmingham, or even some towns in Scotland, and enquire concerning the machines, they will tell you that such or such an one was invented by some common workman. (Smith 1762–66: 351)

Smith was too careful an ideologue to include such material in his published work without either hand-wringing about inequities or the importance of workers’ knowledge. Instead, in *The Wealth of Nations*, he introduced readers to his delightful picture of the division of labor in his simple pin factory:

...a workman not educated to this business (which the division of labour has rendered a distinct trade), nor acquainted with the use of the machinery employed in it (to the invention of which the same division of labour has probably given occasion), could scarce, perhaps, with his utmost industry, make one pin in a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire, another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on, is a peculiar business, to whiten the

pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though in others the same man will sometimes perform two or three of them. I have seen a small manufactory of this kind where ten men only were employed, and where some of them consequently performed two or three distinct operations. But though they were very poor, and therefore but indifferently accommodated with the necessary machinery, they could, when they exerted themselves, make among them about twelve pounds of pins in a day. There are in a pound upwards of four thousand pins of a middling size. Those ten persons, therefore, could make among them upwards of forty-eight thousand pins in a day. Each person, therefore, making a tenth part of forty-eight thousand pins, might be considered as making four thousand eight hundred pins in a day. But if they had all wrought separately and independently, and without any of them having been educated to this peculiar business, they certainly could not each of them have made twenty, perhaps not one pin in a day; that is, certainly, not the two hundred and fortieth, perhaps not the four thousand eight hundredth part of what they are at present capable of performing, in consequence of a proper division and combination of their different operations. (Smith 1789, I.i.3: 14–15)

Today, few people would recognize Smith's pin-making operation as a factory. It was simply a small workshop, and Smith himself referred to the pin factory as a "frivolous example" and later as "a very trifling manufacture" (Smith 1762–66, vi.34: 343; Smith 1789, I.i.3: 14–15). Ironically, the world's greatest manufacturing enterprise, the Carron works, founded by a friend of his, was located in walking distance from Smith's home in Kirkcaldy. Smith, however, stuck with his example of the pin factory.

Relying on an unacknowledged French publication, Smith told his students that a worker might have been able to produce something between one and 20 pins per day, but with the division of labor, the output per capita soared to 2,000. By the time he published *The Wealth of Nations*, based on estimates from a different unacknowledged French source, the number more than doubled to 4,800 pins (Peaucelle 2006: 494; Smith 1789, I.i.3: 14–15).

Granted that the division of labor can improve productivity, how was such dramatic productivity possible? It wasn't. An early draft of *The Wealth of Nations* explains the secret of this jump in productivity. There, Smith began his description of pin production with "if the same person was to dig the metal out of the mine, separate it from the ore, forge it, split it into small rods, then spin these rods into wire..." (Smith 1759: 564). In the pin factory, the workers' tasks began with wire already in their hands. No wonder they could produce so much more. Much of their work had already been completed before they began.

Even if the division of labor was responsible for a significant part of this increased productivity, further dramatic advances were unlikely to come from merely rearranging workers' tasks. Other than his earlier statement that "The division of labour amongst different hands can alone account for this," Smith never directly made the assertion that the division of labor alone was responsible for all technical progress. However, the absence of any other explanation (as well as his silence regarding modern technology) gives the impression he still gave the place of honor to the division of labor.

More important, with the magic of the division of labor, Smith could portray society as a harmonious system of voluntary, commercial transactions. Because the economy could produce more, workers could consume more, and perhaps one day even have their own trifling enterprises.

Tough as Nails

The nail industry was concentrated in the neighborhood of Kirkaldy, where about 30 percent of the nation's nail producers were located (Campbell 1961: 79). Smith had retired there to work on *The Wealth of Nations*.

Only three paragraphs after his famous description of the pin factory, Smith briefly turned to nail production. He took note of the remarkable physical dexterity of the boys whom he watched making the nails, but his main point was that the division of labor was not as refined as in the pin factory.

The Carron Company had offered a bounty of one guinea to reward nail makers for moving their production closer to Kirkaldy. The Company's purpose was to have a ready market for its iron rods that would be shaped into nails.

Not surprisingly, Smith failed to inform his readers that the Company entered into a bargain with the Edinburgh poorhouses to apprentice pauper boys to make nails from the age of twelve until they reached 21. The manager of the poorhouses received a number of alarming reports of the poor treatment of these apprentices (Campbell 1961: 80–81).

Smith's picture of the pin factory was similarly incomplete with respect to working conditions. One of his two French sources, which provided him with detailed knowledge about the productivity of the pin factory, offered an unattractive picture of the seemingly idyllic workplace:

We also make several observations on the pin maker's trade.... This trade is very dirty and unhealthy. The brass rust, a greeny grey colour, affects workers differently depending on their role in the factory. The point makers are not robust, and die young of pulmonary ailments. (Duhamel du Monceau 1761; cited and translated by Peaucelle 2006: 502)

In the end, Smith's idealized workers were not just selling their time on the job, but their lives as well. Nonetheless, for Smith, such details about the workers were not worthy of mention. Instead, Smith spun a story about the efficiency of the pin factory that still resonates strongly among market enthusiasts.

A Different Kind of Pin Factory

The first integrated pin factory was the Dockwra copper works, founded in 1692 before Smith was born. It produced about 80 tons of copper per year, perhaps as much as half of the entire industry. The company had no less than 24 benches for drawing wire (for making pins). From the start, Dockwra gave attention to the possibility of new methods of production (Hamilton 1967: 103).

Eventually, the Warmley works, founded near Bristol in 1746, surpassed Dockwra. This operation came to popular attention in 1770, when Arthur Young published *A Six Months Tour Through the Southern Counties of England and Wales*. Young was a prolific observer of agriculture, as well as economic life in general. His books were widely translated in European languages. A careful study of authorities used in parliamentary debates found that MPs cited Young far more than Adam Smith (Willis 1979). This particular book was already in its third edition by 1772.

Young recommended the integrated pin production at Warmley as “very well worth seeing” (Young 1772: 170). His description began with how the molten metal was

poured into a flat mould of stone, to make it into thin plates, about 4 feet long and three broad. The plates are then cut into 17 strips and then again, by particular machines, into many more very thin ones, and drawn out to the length of 17 feet, which are again drawn into wire, and done up in bunches of 40 s value each; about 100 of which are made here every week, and each makes hundred thousand pins. The wires are cut into them, and completed here employing a great number of girls who with little machines, worked by their feet, point and head them with great expedition; and each will do a pound and a half in a day.

The heads are spun by women with a wheel, much like a common spinning wheel, and then separated from one another by a man, with another little machine like a pair of shears. They have several lapis calaminaris stones for preparing it to make the brass, of which they form a vast number of awkward looking pans and dishes for the Negroes, on the coast of Guinea. All the machines and wheels are set in motion by water, for racing, which there is a prodigious fire engine, which raises, as it is said 3000 hogsheads every minute. (Young 1772: 170–174)

This mechanical system replaced the people who had turned wheels in the operation. The displaced workers represented one-sixth of the labor force (Allen 2009: 147).

A description of this pin factory would have put a very different spin on Smith's presentation. Instead, Smith's readers would have every reason to believe that people should trust capital to harmoniously ensure that economic progress would allow everybody to prosper.

Paris Commune

The Paris Commune's takeover of the French capital in 1871, coming only four years after *Capital* appeared, shocked much of the world, demonstrating workers' revolutionary potential. The scope of the great railroad strike of 1877 may have been equally frightening. Both events demonstrated that labor was capable of asserting itself on a scale that had been previously unimaginable.

The British bourgeoisie credited Marx, a heretofore-largely-unknown German refugee residing in London, with an exaggerated influence on the Commune (Wheen 2000: 330–335). Just a few months after the uprising, the British journalist John Rae, best known for his 1895 *Life of Adam Smith*, warned the public:

It is a curious and not unmeaning circumstance that the country where Karl Marx is least known, is that in which he has for the last thirty years lived and worked. His word has gone into all the earth and evoked in some quarters echoes which governments will neither let live nor let die; but here, where it was pronounced, its sound has scarcely been heard. (Rae 1881: 585)

Rae later included this essay in a book, *Contemporary Socialism*. This book made enough of an impression on the influential Cambridge economist, Alfred Marshall, that he included it in a relatively short list of books recommended for students in his newly reformed program in political economy (Marshall 1903).

Of course, Marx was not totally unknown before the Commune. For example, in 1879, the Radical-Republican Senator George from Massachusetts, credited a meeting of the International Working Man's Association led by Karl Marx with keeping England from joining the Confederate cause during the Civil War, thereby significantly contributing to the preservation of the Union:

The International Association of European and American Workingmen has this title to respect among others, that it has established among the nations of the world a relation, that it has recognized a kindred between man and man, growing out of the common bond of labor, greater, more powerful, more binding than any mere national attachment, or than any tie which connects the subject to the sovereign. America is the last nation that ought to be ungrateful for that sublime accomplishment. (Hoar 1879)

Economists, however, were less appreciative of Marx's influence.

Consumers in Command

Marx's newfound prominence created a challenge to invent an alternative perspective. With remarkable speed, three leading economists—William Stanley Jevons in Britain, Leon Walras in Switzerland, and Carl Menger in Austria—independently concocted a new kind of economics. In their theory, “the new starting point became, not the socioeconomic relations between men as producers, but the psychological relation between men and finished goods” (Meek 1972: 166).

In Jevons's words, “the theory presumes to investigate the condition of a mind” (Jevons 1871: 86). The economy is viewed as a collection of individual firms and consumers, each of which has an initial endowment of capital or wealth, which they use to make voluntary exchanges.

Within this perspective what happens in the workplace is irrelevant. Workers may only be seen as merely choosing whether to exchange their leisure for a wage before commencing work. Next, the commodities leave the workplace without any thought about what workers might have done on the job. Finally, after collecting a wage after work has ceased, workers begin exercising their power as consumers. The workers then go home to buy commodities, rest, and return to the bargain once again. In effect, this theory reduces workers to consumers.

Jevons explained how this new theory reinforced the exclusion of work, workers, and working conditions: “Value always depends upon degree of utility and labour has no connection with the matter, except through utility” (Jevons 1874: 485).

Accordingly, business, subject to the harsh discipline of the market, has no choice but to submit to the dictates of the all-powerful consumers. Jevons explained his reasoning:

The capitalist, like the merchant, is but an intermediary, who gets goods ready for the consumer, and presents him in the price a complete bill of costs.... [T]he supposed conflict of labour with capital is a delusion. The real conflict is between producers and consumers. The capitalist employer is a part of the producing system, and his conflict is naturally with the consumer who buys from him. But his function of acting as discounter of the labourer's share gives rise to a further conflict with the labouring class. Thus it comes to pass that the capitalist is buffeted about and bears the whole brunt of the economic battle, while the consumer always smarts (sic) in the end. (Jevons 1968: 100–101)

Within this theory, introspection—in this case, the consumers' subjective evaluations of consumer goods—drives the economy rather than the actual process of production. Production continues, as it must in any economy, but, within this framework, it does so in the background. Given the technology of the firms and the preferences of the consumers, economists take for granted that the firms somehow

combine their factors of production to produce a mix of commodities that suits the tastes of their customers.

Contemporary economists have gone further, ruling out any possibility of exploitation. In place of an analysis of an imbalance between workers and employers, workers enter into a voluntary arrangement. Two respected economists—one of whom was my freshman economics instructor—compared the relation between employer and employee to that between shopper and grocer:

The firm has...no power of fiat, no authority, no disciplinary action any different in the slightest degree from ordinary market contracting between any two people.... He [an employer] can fire or sue, just as I can fire my grocer by stopping purchases from him or sue him for delivering faulty products.... To speak of managing, directing, or assigning workers to various tasks is a deceptive way of noting that the employer continually is involved in renegotiation of contracts on terms that must be acceptable to both parties. Telling an employee to type this letter rather than to file that document is like my telling a grocer to sell me this brand of tuna rather than that brand of bread. (Alchian and Demsetz 1972: 777)

Economists are able to take this sort of thinking to a still more absurd level by claiming that workers choose to subject themselves to obviously coercive measures. One proposed that “factory discipline [was] successful because it coerced more effort from workers than they would freely give.... The empirical evidence shows that discipline succeeded mainly by increasing work effort. Workers effectively hired capitalists to make them work harder” (Clark 1994: 128).

Another economist, Clark Nardinelli, declared that children in the factories during the Industrial Revolution would voluntarily choose to have their employers beat them. In Nardinelli’s words: “Now if a firm in a competitive industry employed corporal punishment the supply price of child labor to that firm would increase. The child would receive compensations for the disamenity of being beaten” (Nardinelli 1982: 289). Similarly, Steven Cheung maintained that riverboat pullers who towed wooden boats along the shoreline in China before the revolution of 1949 agreed to hire monitors to whip them to restrict shirking (Cheung 1983: 5).

Using such far-fetched analysis, economists can again present capitalism as a harmonious system devoid of conflict because exchanges are actions in which both parties presumably improve their situation. After all, both parties always have the alternative to walk away.

The economist Abba Lerner, observed, “An economic transaction is a solved political problem” (Lerner 1972: 259). Coming only a few years after the Paris Commune, when the labor movement was protesting against exploitation, this emphasis on “a solved political problem” had an obvious attraction.

Railroads

Ironically, just before economists were perfecting their new theory of marginal analysis, modern methods of production were making it obsolete. In particular, what Marx saw as the increasing organic composition of capital, made competitive capitalism unworkable.

This phenomenon revealed a major flaw in the emerging pseudoscientific theory of economics. According to this theory, competitive forces should ensure that prices will gravitate toward the cost of producing one more unit of production. With modern technology this outcome would mean virtually universal bankruptcy for capitalists because marginal costs fall to trivial levels. This unpleasant reality became perfectly evident to the major economists of the time because this tendency toward bankruptcy was already playing out in the major industry in the United States—railroads.

Obviously, the cost of carrying an extra ton of freight was insignificant compared to the heavy fixed costs. No railroad could survive on such rates because the industry had sunk enormous capital into the acquisition of its rolling stock and the rails on which it moved. According to conventional economics, these costs would not enter into the final price.

Indeed, as competition intensified railroads were no longer capable of repaying the bondholders who had financed their business. They had no choice but to face bankruptcy, at least until J. P. Morgan entered into the picture. Morgan, whose family business was to represent British bondholders, forced the industry to consolidate in order to eliminate what was then known as destructive competition.

After railroads, Morgan consolidated numerous industries, culminating in the creation of United States Steel. A great merger wave created many other consolidations, which became popularly known as Morganizations. The emergence of these great trusts and monopolies violated the logic of conventional economics, yet the major US economists of the time applauded this trend, insisting that competition was destructive.

To help legitimize their analysis, which flew in the face of conventional academic economics, these largely German-trained economists founded the American Economic Association, which remains the dominant academic economic body. Writing about economic policy, these economists stood strong supporting the emerging Morganized economic structure rather than competition.

Strangely enough, the same economists were at the forefront of the refinement of conventional economics, which glorified competitive economic processes. They attempted to dismiss the upsurge of workers' protests by "proving" that even if the system was not equitable, at least it was just (see Perelman 2006: 98–99). Their introductory textbooks were unanimous in claiming that markets ensured

economic justice because each party receives a payment that reflects its respective contributions toward the cost of producing one more unit of output.

This contradiction between capitalism and competition becomes perfectly clear in the context of the industries that produce music, films, or pharmaceuticals, where the cost of reproduction is very small. In order to protect these industries, the government creates what it calls intellectual property, which is nothing more than a monopoly right to prevent competition.

This seeming contradiction between these two strands of economic thinking becomes understandable once we recall the great railroad strike of 1877. In the face of the threatening labor movement, economics offered a way of explaining to workers and their sympathizers that the system, as it stood, represented absolute justice. Everybody earned exactly what they deserved.

Any effort to alter the situation was certain to create great harm for everybody. Workers were advised to understand their lives as consumers rather than as producers. In effect, production was to be removed from human consciousness as well as economics.

Hadley

The German education of the bright young US economists who formed the American Economics Association made them familiar with Marx. For example, Arthur Twining Hadley, was the first economist to apply the experience of the railroads to the economy in general in his book, *Railroad Transportation*, first published in 1885 (see Horwitz 1987: 28). Hadley's distinguished career included the presidency of both the American Economic Association (1898–99) and Yale University (1899–1921); he also taught economics as well as Greek, logic, and German and Roman law. Later, Hadley served as head of the Connecticut Public Utilities Commission.

Hadley was not only familiar with Marx, but was quite respectful of him. For example, when he was about to launch his illustrious career he wrote:

I have lately been much interested in Karl Marx, though I am very far from agreeing with him. His book seems to me to have a higher scientific aim than almost any work on political economy in the last half century. Like Ricardo, he seeks natural laws, not artificial maxims. Much of what he advances is I think a legitimate development of Ricardo's position. Holding some of the worst errors of the socialists, he is singularly free from others. (Hadley 1879: 32)

Hadley observed how the existence of large sunk costs makes conventional economics irrelevant:

A railroad differs from many other [small-scale] business enterprises, in the existence of a large permanent investment, which can be used for one narrowly defined purpose, and for no other. The capital, once invested must remain. It is worth little for any other purpose. (Hadley 1903: 40)

This capital structure is incompatible with the imagined world of perfect competition:

Railroad competition may exist everywhere, somewhere or nowhere. If it exists everywhere, rates are reduced to the level of movement charges [variable costs], and there is nothing to pay fixed charges.... If there is competition somewhere, the competitive point will have rates based on movement expenses, and the others will have to pay fixed charges. This constitutes discrimination. If we have competition nowhere, this either involves a pool, or amounts to the same thing. (Hadley 1903: 142–143)

Hadley was not unique in this respect. These economists could not help but be influenced by the repeated bankruptcies of the railroads. They advocated measures to control the competitive forces that drove the railroads into bankruptcy. Marx's economics was obviously more relevant to this phenomenon than their own mainstream economics. Without acknowledging Marx, these economists openly advocated the creation of trusts, cartels, and monopolies, as well as government regulation, to protect the railroads and other major industries from the ravages of competition.

Adams

Although he was neither German trained nor an economist, Charles Francis Adams, Jr., the great grandson of John Adams and grandson of John Quincy Adams, was one of the most acute observers of the economics of railroading. After a brief, unsuccessful career as a lawyer, Adams became a sharp critic of the railroad industry's management. His prominence in such matters allowed him to first become a leading government regulator then as a regulator for the industry to help restrict competition. He finally ended his storied career as president of the Union Pacific Railroad.

Adams observed that after a speculative bubble of railroad investment in 1844, "Free trade in railroads was then pronounced a failure" (Adams 1877: 85).

Adams boldly challenged conventional economics to explain the functioning of the railroad industry. For Adams:

...the railroad had developed one distinctive problem, and a problem which actively presses for solution.... [It] has become apparent that the recognized laws of trade operate but imperfectly at best in regulating the use made of these modern thoroughfares by those who both own and monopolize them. (Adams 1877: 80)

Adams's practical analysis of railroad affairs led him to reject market solutions, reaching the "conclusion which is at the basis of the whole transportation problem: *competition and the cheapest possible transportation are wholly incompatible*" (Adams 1870: 36; cited in McCraw 1984: 9; emphasis in original).

At the time, many observers incorrectly assumed that railroads were somehow different from other economic activities. After all, as Alfred Chandler once noted, "The great railway systems were by the 1890s the largest business enterprises not only in the United States but also in the world" (Chandler 1977: 204). Instead, the railroads blazed the trail for a new generation of industry. As Chandler observed in continuing his thought on the subject, "The railroad was...in every way the pioneer in modern business administration."

Adams may have been the first to break with the tradition that had treated the railroads as an exceptional case (Horwitz 1987: 27). Instead, he was convinced that the experience of the railroad industry heralded the future destiny of the economy as a whole. He explained:

The traditions of political economy...notwithstanding, there are functions of modern life, the number of which is also continually increasing, which necessarily partake in their essence of the character of monopolies.... Now it is found that, whenever this characteristic exists, the effect of competition is not to regulate cost or equalize production, but under a greater or less degree of friction to bring about combination and a closer monopoly. This law is invariable. It knows no exceptions. (Adams 1877: 121)

Conclusion

Three and a half centuries after Molière, bourgeois gentlemen are still speaking prose, but their dialect is contaminated by a highly ideological strain of economics. Karl Marx would be an excellent tutor to help correct the imperfections in their language.

References

- Adams, Charles Francis, Jr. (1870) "Railroad Commissions," *Journal of Social Science* 2: 233–236.
 — (1877) *Railroads: Their Origin and Problems*. New York: Harper & Row, 1969.
- Alchian, Armen A., and Harold Demsetz (1972) "Production, Information Costs, and Economic Organization," *American Economic Review* 62, 5 (December): 777–796.
- Allen, Robert C. (2009) *The British Industrial Revolution in Global Perspective*. Cambridge: Cambridge University Press.
- Campbell, Joan (1989) *Joy in Work, German Work: The National Debate, 1800–1945*. Princeton, NJ: Princeton University Press.
- Campbell, Roy Hutcheson (1961) *Carron Company*. Edinburgh: Oliver and Boyd.
- Chandler, Alfred D. Jr. (1977) *The Visible Hand: The Managerial Revolution in American Business*. Cambridge, MA: The Belknap Press.

- Cheung, Steven N. S. (1983) "The Contractual Nature of the Firm," *Journal of Law and Economics* 26, 1 (April): 1–22.
- Clark, Gregory (1994) "Factory Discipline," *Journal of Economic History* 54, 1 (March): 128–163.
- Duhamel du Monceau, H.-L. (1761) *Art de l'e'pinglier*. Paris: Saillant et Noyon.
- Hadley, Arthur Twining (1879) "Letter to E. D. Worcester, 29 July," cited in Morris Hadley, *Arthur Twining Hadley*. New Haven: Yale University, 1948, p. 32.
- (1903) *Railroad Transportation: Its History and Its Laws* (10th ed.). New York: G. P. Putnam's and Sons, 1903; New York: Johnson Reprint Co.
- Hamilton, Henry (1967) *English Brass and Copper Industries to 1880*. New York: Augustus M. Kelley.
- Hoar, Senator George (1879) "Speech on Wages and Hours of Labor: United States. Congress," *The Congressional Globe* (13 December), Vol. 27, Part 2, p. 102.
- Horwitz, Morton J. (1987) "Santa Clara Revisited: The Development of Corporate Theory," in Warren J. Samuels and Arthur S. Miller, eds., *Corporations and Society: Power and Responsibility*. New York: Greenwood Press, pp. 13–64.
- Jevons, William Stanley (1871) *The Theory of Political Economy*. Baltimore: Penguin, 1970.
- (1874) "The Mathematical Theory of Political Economy," *Journal of the Statistical Society of London* 37, 4 (December): 478–488.
- Lerner, Abba (1972) "The Economics of Politics and Consumer Sovereignty," *American Economic Review* 62, 2 (May): 258–262.
- Marshall, Alfred (1903) "Letter to Herbert Somerton Foxwell (6 October)," in John K. Whitaker, ed., *The Correspondence of Alfred Marshall*, 3 vols. Vol. 3. *Towards the Close, 1903–1924*. Cambridge: Cambridge University Press, 1996, pp. 61–63.
- McCraw, Thomas K. (1984) *Prophets of Regulation*. Cambridge: Harvard University Press.
- Meek, Ronald L. (1972) "Marginalism and Marxism," *History of Political Economy* 4: 499–511. Reprinted in Ronald Meek, *Smith, Marx, and After: Ten Essays in the Development of Economic Thought*. London: Chapman & Hall; New York: Wiley, 1977, pp. 165–175.
- Nardinelli, Clark (1982) "Corporal Punishment and Children's Wages in 19th Century Britain," *Explorations in Economic History* 19, 3 (July): 283–295.
- Peaucelle, Jean-Louis (2006) "Adam Smith's Use of Multiple References for his Pin Making Example," *European Journal of the History of Economic Thought* 13, 4 (December): 489–512.
- Perelman, Michael (2006) *Railroading Economics: The Creation of the Free Market Mythology*. New York: Monthly Review Press.
- Rae, John (1881) "The Socialism of Karl Marx and the Young Hegelians," *Contemporary Review* 40 (October): 585–607.
- Smith, Adam (1759) *Early Draft of The Wealth of Nations* in *Lectures on Jurisprudence*, eds. R. L. Meek, D. D. Raphael, and P. G. Stein. Oxford: Clarendon Press, 1978.
- (1762–66) *Lectures on Jurisprudence*, eds. R. L. Meek, D. D. Raphael, and P. G. Stein. Oxford: Clarendon Press, 1978.
- (1789) *An Inquiry into the Nature and Causes of the Wealth of Nations* (2 vols.), R. H. Campbell and A. S. Skinner, eds. New York: Oxford University Press, 1976.
- When, Francis (2000) *Karl Marx: A Life*. New York: Norton.
- Willis, Kirk (1979) "The Role in Parliament of the Economic Ideas of Adam Smith, 1776–1800," *History of Political Economy* 11, 4 (Summer): 505–544.
- Young, Arthur (1772) *A Six Months Tour Through the Southern Counties of England and Wales* (3rd ed.). London: W. Straham.