

Reframing the Labor Question: On Marginal Productivity Theory and the Labor Theory of Property

David Ellerman

University of Riverside, California

✉ david@ellerman.org

Abstract

Neoclassical economics uses the perfectly competitive market paradigm to frame and limit questions. Concerning labor, the key aspect of the competitive paradigm is marginal productivity theory which shows that, under competitive conditions, workers are paid “according to what they produce.” It takes a theory to kill a theory. This paper reframes the labor question according to the normal juridical principle of imputation whose application to property appropriation is the modern treatment of the old natural rights or labor theory of property—the theory that people have a natural right to the fruits of their labor. The same critique also reframes the labor question about the employment contract, a reframing that has nothing to do with the pay, benefits, or working conditions. The point is that the whole idea of hiring or renting human beings, i.e., selling responsible human actions, is invalid due to the factual inalienability of responsible human agency—as is recognized in juridical imputations to hired criminals.

Keywords: marginal productivity theory, labor theory of property, natural rights theory, redistributive theory, predistributive theory

JEL classifications: B41, B51, B59, D02, D24, D33, J31, J41, J54, K11, K31

Introduction: The Importance of Framing

All discussion takes place within the limits of some framework. Conventional, i.e., neoclassical, economics has the long-established framing of the “competitive model” as an ideal. The focus in this paper is on the keystone of that neoclassical competitive paradigm, the marginal productivity (MP) theory of distribution. The key importance of MP theory lies in the understanding that the competitive private property market system would allocate to “each according to what he and the instruments he owns produces” [Friedman 1962, pp. 161-162]. Hence the labor question is usually framed in the competitive model: is a worker being paid “according to what he... produces”—or is labor being 'robbed' in some basic sense?

Most of the liberal or progressive heterodox criticism of neoclassical economics takes place well within the framing of the problem of distribution [Piketty 2014; Stiglitz 2012; Galbraith 2012; Keen 2011; Rawls 1999; Thurow 1975 etc.]. The critique outlined in this paper reframes the labor question as being about property instead of pay. It attacks even the competitive ideal of distribution to labor according to marginal productivity—as opposed to most criticism about how the actual economy falls short of the competitive paradigm.

It takes a theory to kill a theory. The theory used to critique MP theory (as applied to labor) is the usual juridical principle of imputation (impute legal responsibility according to de facto responsibility) applied to questions of property appropriation. This is the modern treatment of what historically was called the *labor or natural rights theory of property*—the basic idea that people have a natural right to own the positive fruits of their labor (and a natural obligation to bear the negative fruits of their labor) [Hodgskin 1973 (1832); Menger 1899; Schlatter 1951; Ellerman 1993].

The same critique also reframes the labor question about the employment contract. The point has nothing to do with the size of wages, benefits, or working conditions. The point is that the whole idea of renting human beings, i.e., selling responsible human actions, is invalid due to the factual inalienability of responsible human agency. This treatment of the “core of the whole modern labor question” is an updating of the argument made long ago by Ernst Wigforss, one of the founders of Swedish social democracy, that the legal contract for the selling of human labor was essentially an invalid contract.

“But, above all, from a labor perspective the invalidity of the particular contract structure lies in its blindness to the fact that the labor power that the worker sells cannot like other commodities be separated from the living worker. This means that control over labor power

must include control over the worker himself or herself. Here perhaps we meet the core of the whole modern labor question, and the way the problem is treated, and the perspectives from which it is judged, are what decide the character of the solutions.” [Wigforss 1923, p. 28 (translated by Patrik Witkowsky)]

Comparison to heterodox or radical criticism

What is surprising is how much of heterodox 'criticism' of MP theory stays within the framing of the competitive paradigm by pointing out all the ways in which the actual economy falls short of the competitive model:

- markets in general and labor markets in particular are far from competitive;
- information imperfections abound which undercut the informational assumptions behind the competitive model;
- there are great difficulties in actually measuring “marginal productivity” at the firm level;
- most economic decision-making is not governed by the rational maximization of the neoclassical theory; and
- all of this adds up to an economy suffused with non-competitive rents and rent-seeking behavior. And even the competitive market paradigm does not address all the prior non-market violence, theft, and conquest behind the historical initial distribution of property.

But, it will be asked, “What about Marx's labor theory of value and exploitation?” It didn't just attack the competitive shortcomings of the actual economy. Firstly, it should be noted that MP theory provides a neoclassical theory of exploitation which also purports to show, under certain non-competitive conditions, that workers would be underpaid according to their marginal product. Marx's theory was developed well before MP theory but it also purported to show, under certain conditions, that labor would be “paid below its value.”

“It will be seen later that the labour expended during the so-called normal day is paid below its value, so that the overtime is simply a capitalist trick to extort more surplus labour. In any case, this would remain true of overtime even if the labour-power expended during the normal working day were paid for at its full value.” [Marx 1977, fn. p. 357]

But, outside the dwindling band of the faithful, Marx's labor theory of value and exploitation has long been discredited (and rightly so)—in addition to being *superficial* since it was not even

a critique of the institution of wage labor *per se* (e.g., if labor was “paid for at its full value”), but only a critique of labor being “paid below its value”.¹ There is no need to further beat the dead horse of Marx's labor theory of value and exploitation [see Ellerman 1983, 1993].² As Albert Hirschman wisely observed, Marx's “works exhibit a simple juxtaposition of scientific apparatus and moralistic invective, wholly *unversöhnt* [i.e., unresolved]” [Quoted in: Adelman 2013, p. 570]. In fact, it has gotten so bad that Marxism has become a “capitalist tool” [Ellerman 2010] in the sense that the main 'supporters' these days (in the sense of keeping the theory 'in play') of Marx's labor theory are the orthodox theorists who want to pretend that Marxist economics is the only real alternative to neoclassical theory—in the same sense that “Soviet Communism” was long promoted as the only real alternative to the present system. Then they can knock down the Marxist strawman and declare “There Is No Alternative” to orthodox economics.

The Debate about the Distribution of Wealth and Income

Today much of the discussion in progressive circles [e.g., Stiglitz 2012; Galbraith 2012; Piketty 2014] has been framed in terms of the obscene mal-distribution of wealth and income as if that were “the” problem. And the proposed redistributive reforms (e.g., changes in income, wealth, and estate taxes, increased minimum wages, income caps, and universal basic incomes) have all stuck to that framing of the question.

Let's apply that framing to the previous system. There was a similar, if not more extreme, mal-distribution of wealth, income, and political power in the institution of slavery wherein some people owned other people. Yet, it should be obvious to modern eyes that redistributions in favor of the slaves (surely a good thing), while leaving the institution of owning workers intact, would not address the root of the problem.

The system of slavery was eventually abolished in favor of the system we have today which differs in two important respects: (1) the workers are only rented,³ hired, or employed (i.e., the

¹ The point is about Marx's *theory* that wages are too damn low, not his personal views. Of course, he was personally against the institution of wage labor, at least in its private form. The point is that he only brought a value theory to a property-theoretic fight, so it would have still been ineffectual even if it was a good value theory.

² It seems that many on the Left only support the Marxist analysis of exploitation for reasons of identity and posture; it serves as their “badge of Red courage” to establish their credibility as being against “the system.”

³ The word “rented” is used deliberately even though American English prefers to say that cars are rented but people are hired. In the UK, rental cars are called “hire cars.” Indeed, the system of borrowing money or renting *things* is called the “loan and hire” system in English law [Baty 1918] as in the phrase “hire-purchase” applied to things. In any case, the underlying economic relationship (buying the services of a productive factor instead of the ownership of the factor) is the same no matter what it is called. Moreover, this is not a matter of controversy; as the late dean of neoclassical economics, Paul Samuelson, put it: “Since slavery was abolished, human earning power is forbidden by law to be capitalized. A man is not even free to sell himself: he must *rent* himself at a wage.”

employer/master only buys some, but not all, of employee's labor); and (2) the rental relationship between employer and employee is voluntary.

Today, the root of the problem is the whole institution for the voluntary renting of human beings, the employment system itself, not the terms or completeness of the contract or the accumulated consequences in the form of the mal-distribution of income and wealth.

What is the orthodox defense of the institution of voluntarily renting human beings? It has several layers. The first layer of defense is that the employment contract is voluntary, and, indeed, it *is* voluntary by any normal juridical standards.⁴ That defense is supposed to remove the employment relation out of the category of possibly being *per se* invalid—so any remaining questions can only be about the terms and conditions of the contract.

Here again, it may be helpful to repose the question about the prior system of *owning all* of a worker's labor. What if that system was based on a voluntary contract? Conventional intellectual history has long displayed a studied ignorance of the fact that the sophisticated arguments for that peculiar institution were indeed based on seeing the incidence of contract from Roman Law down to Antebellum America [Ellerman 1993].⁵

[Samuelson 1976, p. 52 (his italics)] Or as other neoclassicals put it: “The commodity that is traded in the labor market is labor services, or hours of labor. The corresponding price is the wage per hour. We can think of the wage per hour as the price at which the firm rents the services of a worker, or the rental rate for labor. We do not have asset prices in the labor market because workers cannot be bought or sold in modern societies; they can only be rented. (In a society with slavery, the asset price would be the price of a slave.)” [Fischer et al. 1988, p. 323; or nearly identical passage in: Begg et al. 1997, p. 201].

⁴ At a more fundamental level than the neoclassical framing of the competitive paradigm is the older classical liberal framing in terms of consent-versus-coercion. There has long been a fashionable posture on the Left to simply escalate one's conception of involuntariness so that the labor contract, if not most contracts, would be ‘involuntary’ and ‘coercive.’ But by any real-world standards (leaving aside cultural posturing), a collectively-bargained employment contract is “more” voluntary than the usual contract of adhesion between an individual consumer and a supermarket. Moreover, that involuntariness-critique of the wage-labor contract shows the superficiality of much of the Left that is unable to get beyond the classical liberal “consent-versus-coercion” framing to figure out what could be inherently wrong with a voluntary contract—or, at least, to learn about the inalienable rights theory hammered out in the abolitionist and democratic movements which answers that question.

⁵ For instance, Rev. Samuel Seabury [1969 (1861)] gave a classical implicit-contract defense of slavery in 1861. Another standard defense was that slaves were prisoners of war who had the tough choice between death or being sold into slavery, and voluntarily chose the latter. For instance, John Locke seems to have justified slavery in the American colonies by interpreting the status of slaves as “captives” in wars inside Africa who took that plea bargain and who were then sold into the Atlantic slave trade (viz. Laslett notes on §24, 325-326 in: Locke 1960). But modern liberal scholars of pro-slavery thought can't seem to find any of the contractarian defenses. Eric McKittrick [1963] collects essays of *fifteen* pro-slavery writers; Harvard University's current President, Drew Gilpin Faust [1981], collects essays from *seven* pro-slavery writers; and Paul Finkelman [2003] collects *seventeen* excerpts from pro-slavery writings. But *none* of them include a single writer who argued to allow slavery on a contractual basis such as Seabury—not to mention Grotius, Pufendorf, Locke, Blackstone, Montesquieu, and a host of Scholastics such as Jean Gerson, Luis de Molina, and Francisco Suarez (on the Scholastics, see [Tuck 1979]). If a contractual relationship to buy *all* of a person's labor was morally wrong in spite of being voluntary, then the current economic system based on the voluntary contract for the short-term renting of other people might be put in moral jeopardy. Hence ‘responsible’ intellectual historians of pro-slavery thought just cannot go there.

The real argument for the abolition of the *voluntary* purchase of all a worker's labor was the theory of inalienable rights that descends from the Reformation (i.e., inalienability of conscience) and Enlightenment (principally, Baruch Spinoza and Francis Hutcheson) down to the present in the abolitionist and democratic movements [Ellerman 1993, 2015]. The “problem” in the historical remembrance of that inalienable rights critique of the voluntary contract to sell all of one's labor at once (the factual inalienability of human agency) is that it clearly also applies to the current system of piecemeal selling of labor—so that critique must go down the memory hole of liberal intellectual history.

But from the viewpoint of the Economics profession, the intellectual history of inalienable rights in the abolitionist and democratic movements is all outside their bailiwick. They have developed a tight mathematically formulated theoretical structure, the competitive paradigm. They take their stand within that framing. In spite of all the heterodox critique of the empirical applicability of the competitive model, orthodox economists are clear that it was never intended as an empirical model. Perhaps the most philosophically sophisticated of the orthodox defenders is Frank Knight who was quite clear on the point.

“Economic theory is not a descriptive, or an explanatory, science of reality. Within wide limits, it can be said that historical changes do not affect economic theory at all. It deals with ideal concepts which are probably as universal for rational thought as those of ordinary geometry.”
[Knight 1969. p. 277]

The competitive model is not intended to be descriptive; it is postulated as the ideal or paradigm around which to *frame and limit* the normative discussion, e.g., are workers paid the value of their marginal product as in the competitive model or not? Even the most slavish neoclassical (or Austrian) defender of the faith is well aware that human rental markets are not perfectly competitive. Yet most progressive or heterodox critics of marginal productivity theory, e.g., Lester Thurow [1975], John Rawls [1999], and Steve Keen [Chapter 6, 2011] in addition to Stiglitz and Piketty, do not mount any criticism of the distributive *ideal* of marginal productivity but only focus on applicability issues such as the non-competitiveness and informational “imperfections” of labor markets, measurement difficulties, rents based on market power, and the background mal-distribution of wealth—all of which were long ago acknowledged by sophisticated defenders of the system of human rentals such as Knight.

John Rawls may be a good example to illustrate the point. He spent his whole adult life philosophizing about justice while living in a society based on the renting of human beings. Yet he never considered that the human rental contract might be inherently problematic. Far from

criticizing marginal productivity theory from the view point of “people getting the fruits of their labor,” Rawls identified the two theories!

“Accepting the marginal productivity theory of distribution, each factor of production receives an income according to how much it adds to output (assuming private property in the means of production). In this sense, a worker is paid the full value of the results of his labor, no more and no less. Offhand this strikes us as fair. It appeals to a traditional idea of the natural right of property in the fruits of our labor. Therefore to some writers the precept of contribution has seemed satisfactory as a principle of justice.” [Rawls 1999, p. 271]

Then he went on to only quibble about the background conditions.

“The marginal product of labor depends upon supply and demand. What an individual contributes by his work varies with the demand of firms for his skills, and this in turn varies with the demand for the products of firms. An individual's contribution is also affected by how many offer similar talents. There is no presumption, then, that following the precept of contribution leads to a just outcome unless the underlying market forces, and the availability of opportunities which they reflect, are appropriately regulated.” [Rawls 1999, p. 271]

Indeed, how *can* one criticize the ideal of paying rented human beings the value of their marginal product—of course, with “underlying market forces [being] appropriately regulated”? Isn't that, as Rawls suggests, the very idea of a “natural right of property in the fruits of our labor” or reaping what you sow? As Knight argued, the competitive system satisfies:

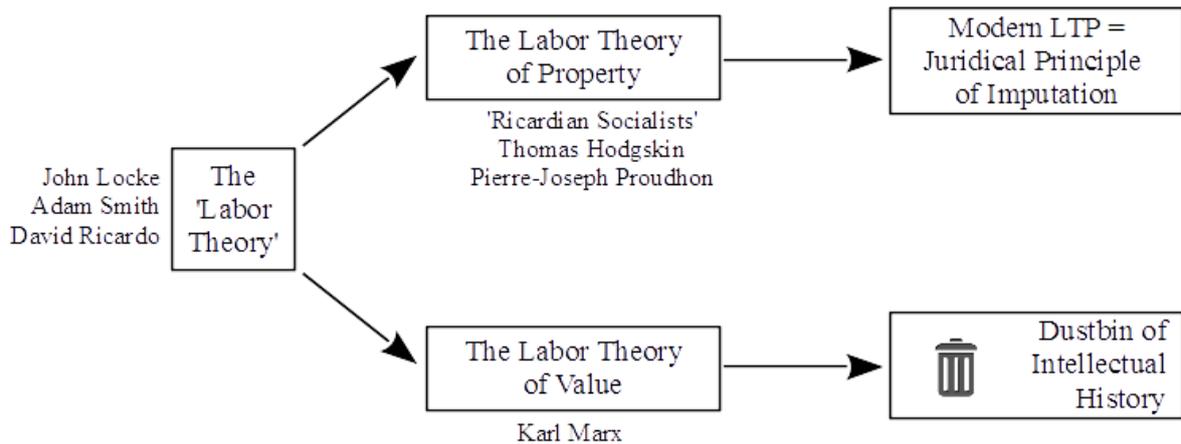
“justice by the principle of equality in relations of reciprocity, giving each the product contributed to the total by its own performance (“what a man soweth that shall he also reap”).” [Knight 1956, p. 292]

Otherwise, as John Bates Clark pointed out:

“A plan of living that should force men to leave in their employer's hands anything that by right of creation is theirs, would be an institutional robbery—a legally established violation of the principle on which property is supposed to rest.” [Clark 1899, pp. 8-9]

The fork in the road for heterodox economics

It takes a theory to kill a theory, so to criticize the MP theory as an ideal applied to labor, it takes an alternative theory about labor. One must go outside the usual orbit of concepts covered in neoclassical, Austrian, or even most heterodox economics, and, indeed, one has to go back to the first half of the 19th century, and take the other fork in the road.



The Fork in the Road: How to Develop the "Labor Theory

The upper fork in Figure 1 represents: “that small band of economic radicals who between 1820 and 1840 put forth the claim of labor to the whole product of industry” [Blaug 1958, p. 140]

including Thomas Hodgskin in 1832 [1973], Pierre-Joseph Proudhon in 1840 [1970], and the other so-called “Ricardian socialists” (although they were neither). They tried to develop the inchoate in-the-air “labor theory” into a labor theory of *property* [Menger 1899] rather than a labor theory of *value*. In the history of economic ideas, these early attempts to develop a labor theory of property were largely overshadowed by Karl Marx's monumental attempt to develop a labor theory of value—whose eventual failure has made it the favorite foil of orthodox economics.

It might be noted that the critique of the labor theory of value has become such a part of the DNA of orthodox economics that economists cannot even “hear” about the labor theory of *property* without automatically assuming one is talking about some labor theory of *value*.

What you are probably trying to say is that “Only labor produces value, and thus all value should go to labor.” Yes, we have heard all that before, so let me tell you why that value theory is completely discredited.

Hence no orthodox text, to the author's knowledge, even discusses the modern treatment of the labor theory of property—which has *nothing* to do with value or price theory. Instead, the labor theory of value is the designated foil for orthodox theory.

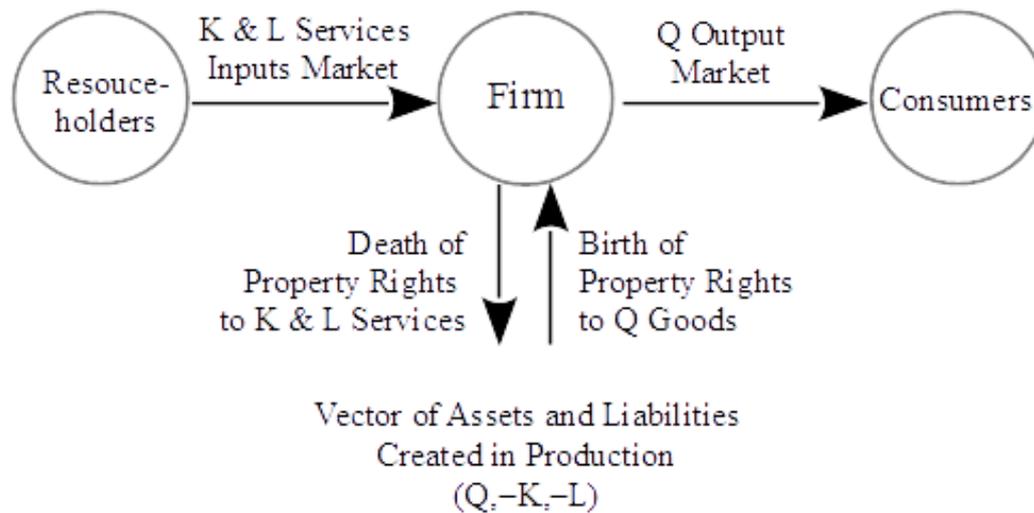
The Neglected Question of Appropriation

To understand the modern labor theory of property, there is many 'misunderstandings'—“ideological dreck” may be a better phrase—that needs to be first cleared away. Firstly, the theory of property applies to the initiation and termination of property rights, not the exchange of property rights. One cannot see the answer to the question if one has not even formulated the question. The labor theory of property is also normative theory that applies to the creation and termination of property rights (i.e., appropriation) in normal production (and consumption) activities.⁶ There is also a descriptive theory of property as to how property rights are created and terminated in a private property market economy.

The flows of property rights should always be described in an algebraically symmetric manner reflecting both assets and liabilities. In a common stylized picture of production, the input services, say K and L , are used up and the outputs Q are produced. The assets Q are created so one property-theoretic question is: “Who is to own those assets?” The services K and L (including intermediate goods) are used up so another property-theoretic question is: “Who is to owe those liabilities?”⁷ The two questions together are: “Who is to legally appropriate the assets and liabilities $(Q, -K, -L)$ created in a productive opportunity?”

⁶ Our focus is on commodities, rivalrous and excludable private goods that are produced and consumed as a part of deliberate human activity.

⁷ The termination of rights was an original meaning of “expropriation.” “This word [expropriation] primarily denotes a voluntary surrender of rights or claims; the act of divesting oneself of that which was previously claimed as one's own, or renouncing it. In this sense, it is the opposite of ‘appropriation.’ A meaning has been attached to the term, imported from foreign jurisprudence, which makes it synonymous with the exercise of the power of eminent domain,” [Black 1968, p. 692, entry under Expropriation]. Since “expropriation” now has this acquired meaning, I will treat the “expropriation (termination) of rights to the assets $+X$ ” as the “appropriation of the liabilities $-X$.”



Assets and liabilities created in production

It is a remarkable fact—which itself calls for explanation—that economic theory *does not even formulate the question* about the initiation and termination of property rights in these normal activities of production. For example, the question is ignored in the “economics of property rights” [e.g., Furubotn and Pejovich 1974], in the “property rights approach” to the firm [e.g., Hart and Moore 1990], in the Putterman and Kroszner anthology [1996] of papers on the “economic” nature of the firm, in the “property rights” literature of the new institutional economics [e.g., Furubotn and Richter 1998], or in the law and economics literature [e.g., Cooter and Ulen 2004; Miceli 1999].

One reason for the neglect is that discussions of property tend to be restricted to a mythical state of nature [e.g., Locke 1960 (1690)] or to the appropriation of unclaimed or commonly owned natural goods [e.g., Umbeck 1981; Barzel 1989] rather than the everyday matters of production where property rights are constantly created and terminated. On the liability side, the law and economics literature looks extensively at the assignment of liabilities in the legal trials that may follow the *accidental* destruction of property [e.g., Calabresi 1970]. But what is the mechanism for assigning the liabilities for the normal deliberate using-up of inputs in production (or consumption)?

The Fundamental Myth: The *pons asinorum* of property theory

The most basic reason why the question of appropriation in production apparently cannot be raised is the “Fundamental Myth” that is largely swallowed whole by both the Left and Right. The Fundamental Myth is the idea that the rights to the product (and, incidentally, the

discretionary management rights over production) are part and parcel of “the ownership of the means of production” (to use the Marxian phrase). There is no need to raise the question of appropriation, i.e., who should own the assets and owe the liabilities created in production, since it is all supposedly part of the already-existing ownership of “capital” or “ownership of the firm.”

The idea goes back to the medieval notion of “dominion” or ownership of land as including the governance rights over the people living on and working the land as well as to the fruits of their labor. In feudal times, the governance of people living on land was taken as an attribute of the ownership of that land: “ownership blends with lordship, rulership, sovereignty in the vague medieval *dominium*,...” [Maitland 1960, p. 174] The landlord was Lord of the land. As Otto von Gierke put it, “Rulership and Ownership were blent” [1958, p. 88]. One of Marx's most basic blunders was to carry over this idea by substituting capital for land.

“It is not because he is a leader of industry that a man is a capitalist; on the contrary, he is a leader of industry because he is a capitalist. The leadership of industry is an attribute of capital, just as in feudal times the functions of general and judge were attributes of landed property.” [Marx 1977, pp. 450-451]

Marx’s blunder has been a staple of socialist thought ever since.

“It is astonishing that a hundred years of socialist thought have not confronted the basic capitalist idea—that owners of capital have the right of command in the relations of production. The idea behind nationalization, wage earner funds, and the like is in fact fundamentally the same idea as that on which capitalism is based, namely, that ownership of capital should give owners the right to command in the production process (be they democratically elected politicians, state bureaucrats/ planners, workers' representatives, or union officials). Indeed, this is a nice example of what Antonio Gramsci called bourgeois ideological hegemony.” [Rothstein 1992, p. 118]

This view is also standard today in neoclassical economics, e.g., the

“rights of authority at the firm level are defined by the ownership of assets, tangible (machines or money) or intangible (goodwill or reputation).” [Holmstrom and Tirole 1989, p. 123]

In addition to swallowing the Fundamental Myth whole (and ignoring the role of the employer-employee contract in determining the “rights of authority at the firm level,” the cavalier inclusion of “goodwill” in “the ownership of assets” by two winners of the ‘Nobel Prize in Economics’ is all too typical of the superficial treatment of property rights in the standard economic literature.⁸

It is conceptually *trivial* to see that in the current market system, the product and governance rights are not part and parcel of the ownership of capital. Human beings are not the only rentable inputs in the current system; capital may also be rented. The party who *hired in* the capital and paid for all the other used-up inputs would have the legally defensible first claim on the produced output, not the owner of the capital asset.

The Fundamental Myth often hides behind misconceptions about corporations: “Are you saying a corporation's ownership of its product is a myth?” Of course, a corporation owns “its product” (by definition of “its”) but what determines whether or not the product produced using, say, a corporation’s factory building is “its product”? For instance, must the Studebaker Corporation own the cars that rolled off the assembly line in the factory owned by Studebaker? If Studebaker at one point leased one of its plants to another automobile company, it is easy to see that the answer is actually “No.” Those cars would be owned by the other company who was making the lease payments and paying for all the other inputs in car production and who thus would have the defensible claim on the produced cars.

In general, consider the common notion of “owning a factory” or “owning a corporation.” There is the ownership of factory buildings and the ownership of corporations with such assets, but there is no “ownership” of the going-concern aspect of *operating* a factory since that is a contractual role in a market economy. By using the same phrase “owning a factory” or “owning a corporation” to straddle both meanings, one could seem to have an argument that the contractual role of operating a factory was “owned.”

For instance, when it is pointed out that operating an owned factory or an owned corporation as a productive going-concern is a contractual role, not an extra owned property right, a typical response is: “Yes, but it is that role which we call the ‘ownership’ role.” After thus redefining factory ‘ownership’ to include the going-concern contractual role, the semantics shifts back to conclude that “the product rights are part of the ‘ownership’ of the factory” or “the ‘ownership’ of the corporation.” Such loose patterns of thought allow the Fundamental Myth to persist.

⁸ Even accountants [Catlett and Olson 1968] understand that it is problematic to treat goodwill under “the ownership of assets.”

The legal party who ends up appropriating (i.e., having the defensible claim on) the produced assets is the party, sometimes called the “residual claimant,” who was the contractual nexus of hiring (or already owning) all the inputs used up in production (and thus who “swallowed” those liabilities). There is no ‘ownership’ of the contractual role of residual claimancy in a private property market economy. Since the residual claimant is determined by who hires what or whom (and power relations in the market and ideological hegemony certainly affects that outcome), the property rights to the product are not part of some prior bundle of rights to a capital asset or to a corporation. If competition arises so that the suppliers or customers of a going-concern business go elsewhere, then the so-called “owner of the firm” cannot claim that any actual (as opposed to mythical) property rights have been violated. Orthodox economists, Nobel laureates or not, should at least be able to cross the *pons asinorum* by understanding those conceptual implications of capital goods also being rentable like persons.

The grip of the Fundamental Myth in one form or another seems to account for the failure *to even formulate the question* of the appropriation of the assets and liabilities that are created in normal production activities. The professional defenders of the human rental system are only too happy to accept *Marx's Gift*, the fundamental-myth characterization of the system as being based on the “private ownership of capital” and thus also the misnomer of calling the human rental system “capitalism.”

“The common understanding in Marxist and well as non-Marxist theories of the relation between power in the production process and market economy has no logical underpinning. ... Contrary to Marxian thoughts, it is the nature of the hiring contract, not the market economy as such, that entails power in a market-based production process.” [Rothstein 2011, 208 fn. 3]

Frank Knight, a deeper thinker on these matters than most apologists, was quite clear on “capitalism” being a misnomer and that the employer may not be the owner of the capital.

“Karl Marx, who in so many respects is more classical than the classical themselves, had abundant historical justification for calling, i.e., miscalling—the modern economic order “capitalism.” Ricardo and his followers certainly thought of the system as centering around the employment and control of labor by the capitalist. In theory, this is of course diametrically wrong. The entrepreneur employs and directs both labor and capital (the latter including land), and laborer and capitalist play the same passive role, over against the active one of the entrepreneur. It is true that entrepreneurship is not completely separable from the function of

the capitalist, but neither is it completely separable from that of labor. The superficial observer is typically confused by the ambiguity of the concept of ownership.” [Knight 1956, p. 68, fn. 40]

The “confused” myth about the “ownership” of the means of production is not part of the actual legal system where capital goods are just as rentable as people. But it *is* part of neoclassical capital *theory* and corporate finance *theory* [Ellerman 1993] and is apparently accepted or perhaps not even noticed by the heterodox Cambridge ‘critics’ of capital theory [Harcourt 1972] who only criticize orthodox capital theory because of aggregate notions of capital, reswitching, and all that.

So far our task has just been to clear away the ideological dreck (symbiotically shared by the Right and Left) so that the descriptive and normative question of appropriation in production can be clearly formulated.

If we use the highly stylized description of a productive opportunity given by a production function $Q = f(K,L)$, then the list or “vector” of assets and liabilities created in productive opportunity is $(Q, -K, -L)$.

- The *descriptive* question of appropriation is: “How is it that one legal party rather than another ends up legally appropriating $(Q, -K, -L)$?”
- The *normative* question of appropriation is: “What legal party ought to legally appropriate $(Q, -K, -L)$?”

The descriptive question of appropriation

The descriptive question is easily answered from our previous discussion. There is a *laissez-faire* or *market mechanism* for the assignment of the liabilities and assets created in production in a private property market economy. One legal party purchases (or already owns) all the inputs necessary for a productive opportunity and instead of reselling those inputs or expecting to be reimbursed for those used-up inputs, that party shoulders, swallows, or absorbs those liabilities when the inputs are consumed in production. Then having borne all the costs involved in the productive opportunity, that same legal party has the legally defensible claim on the produced outputs which are typically sold. Thus in terms of property rights and liabilities, one legal party appropriates 100% of the input-liabilities $(0, -K, -L)$ as well as 100% of the output-assets

(Q, 0, 0). In property terms, there are no “distributive shares”; that is only a value-theoretic metaphor.

The 100% appropriation of the input-liabilities and output-assets by one legal party is a simple legal fact. Since the distributive shares picture has conquered the Economics profession “like the Inquisition conquered Spain” (Keynes’ phrase in another context), one will search in vain through the modern economics texts to find that simple legal fact mentioned. One has to go back to economics texts prior to the marginalist revolution to find such a simple statement about the actual property rights.

“Being equally, however, the owner of the labour, so purchased, as the owner of the slave is of that of the slave, the produce, which is the result of this labour, combined with his capital, is all equally his own. In the state of society, in which we at present exist, it is in these circumstances that almost all production is effected: the capitalist is the owner of both instruments of production: and the whole of the produce is his.” [Mill, James 1826, Chapter I, section II]

Outside of the ‘science of economics’ one can find a few souls who are willing and able to describe the actual, as opposed to the metaphorical, property rights involved in production in the human rental system. Here, for example, is a statement by a sociologist a century ago.

“Under the factory system, the factory, raw materials, and finished product belong to the capitalist. The laborer at no time owns any part of what is passing through his hands or under his eye. Never can he say, “This product, when finished, will be mine, and my rewards will depend on how successfully I can dispose of it.” There is much theoretic discussion to the “right of labor to the whole product” and much querying as to how much of the product belongs to the laborer. These questions never bother the manufacturer or his employee. They both know that, in actual fact, all of the product belongs to the capitalist, and none to the laborer. The latter has sold his labor, and has a right to the stipulated payment therefor. His claims stop there. He has no more ground for assuming a part ownership in the product than has the man who sold the raw materials, or the land on which the factory stands.” [Fairchild 1919, pp. 65-66].

Setting aside the normative questions for a moment, one may search in vain through the entire corpus of modern economics to find such a plain statement of the “actual fact” that the employer bears 100% of the liabilities for the used up inputs and owns 100% of the produced outputs—with the employees having 0% of both.

The normative question of appropriation

Now we turn to the normative theory. First a matter of terminology. The list of input-liabilities and output-assets $(Q, -K, -L)$, that is called the “production plan” [Varian 1992, p. 2] or “input-output vector” [Quirk and Saposnik 1968, p. 27] in modern neoclassical texts, can be identified with the notion of the *whole product* [which is composed of the *negative product* $(0, -K, -L)$ plus the *positive product* $(Q, 0, 0)$] that was used in the old slogan of “Labour's claim to the whole product” highlighted by Carl Menger's jurisprudentially-trained brother, Anton Menger [1899]. It is true that this labor's-right-to-the-whole-product tradition put the emphasis on the positive product. But since they could hardly expect some other party to pay their production costs, we will interpret their notion of “whole product” in modern terms as the usual production vector that includes the negative product, the input-liabilities as the negative entries.

Thus the normative question of appropriation is: “Who ought to appropriate the whole product in any given productive opportunity?” That party, the whole product appropriator, is rightly labeled the “firm” (in the going-concern sense of *being* the firm instead of “owning” the firm). Hence we have the prior:

- *Question of Predistribution*:⁹ “Who ought to be the firm—in the first place?” as opposed to the usual;
- *Question of Distribution*: “What should be the firm's distributive shares?”

The traditional answers to the Question of Predistribution are: Capital (the owners of the “means of production”), Labor (the legal party consisting of all who work in the enterprise), the State (as in present or past Marxian socialism), or perhaps just any entrepreneurial party who employs all the necessary inputs, bears those costs, and then claims and sells the outputs.

⁹ The phrase “predistribution” is due to Jacob Hacker but it was Branko Milanovic who suggested the application to worker ownership. For instance, legislation to increase worker ownership through Employee Stock Ownership Plan (ESOPs) or worker cooperatives is predistributive while raising taxes on the 1% is redistributive.

The juridical principle of imputation

The other fork in the “labor-theory” road is the largely untraveled labor theory of property that answered the normative Question of Predistribution with “Labor's right to the whole product.” The key insight that distinguishes the *modern* treatment of that old theory is that it is simply the property-theoretic application of the usual:

Juridical Principle of Imputation: assign legal responsibility in accordance with factual responsibility.

The principle is so basic and obvious that it is usually not even stated explicitly.¹⁰ For instance, in a jury trial, the jury is charged with making the official decision about whether or not the defendant is factually responsible as charged—and then the legal system, without further question, assigns or imputes the legal responsibility accordingly. The imputation principle applies in the first instance to *deliberate* human actions (not the accidents focused on in the law and economics literature), and the most deliberate of all human activities is production where the deliberate human actions are called “labor” (in the broad sense of all who work in an enterprise).¹¹ That is why the old labor theory of property is, in modern terms, just the property-theoretic application of the juridical imputation principle.

In factual terms, all who work in a productive opportunity (regardless of their legal role of employer or employee) are jointly de facto responsible for using-up the inputs and thus, by the imputation principle, they constitute the legal party who should owe those legal liabilities. And by those same deliberate human actions, they produce the outputs and thus, by the same imputation principle, they should legally own those assets. Thus the application of the conventional (i.e., 'bourgeois' in the Marxist sense) principle of imputation to production

¹⁰ Apparently independent of Ellerman [1980a, 1980b, 1985, 1993], this connection between property and imputation has been noted by a legal scholar: “[T]he libertarian entitlement thesis, to the effect that persons are entitled to retain the fruits of their labor, and the libertarian thesis about outcome-responsibility, to the effect that persons are responsible for the harms that they cause, are two sides of the same coin. ... The basis of this unity is the idea that people “own” the effects, both good and bad, that causally flow from their actions.” [Perry 1997, p. 352] Ironically, the first insight into the property and imputation connection can be traced back to the two ways to paraphrase the *metaphorical* interpretation of MP theory. John Bates Clark [1899] developed that interpretation using Lockean “fruits of one's labor” language while Friedrich von Wieser [1889] used the language of imputation [*Zurechnung* in German], so together they foresaw the connection between property appropriation and the imputation of responsibility.

¹¹ Note that the juridical imputation principle is about the past-oriented assignment of legal responsibility (positive and negative) for the results of people's deliberate de facto responsible actions, and has nothing to do with future-oriented “assignment of responsibilities” in organizational roles. See Hart [1968, p. 211] or Ellerman [1993, pp. 86-7] for the many ways the R-word “responsibility” is used and abused.

provides the juridical basis for the old claim of “Labor's right to the whole product”—to the positive and negative fruits of their joint labor.

But what about the employment contract? The employees voluntarily sold their labor services to the employer. Here the analysis makes contact with the aforementioned theory of inalienable rights that provided the basis for the abolition of a voluntary contract for selling labor by the lifetime. In a contract to sell or rent out a material instrument such as a wrench or a truck, the owner of the instrument can factually fulfill the contract by turning over the use of the instrument to the buyer or renter so that party can be factually responsible for using it and for whatever is thereby produced. The services of a thing are factually alienable.

But the same transfer to fulfill the contract is not *factually* possible when a person voluntarily sells or rents out *themselves*. Responsible human agency is factually inalienable. Hence the contract to rent persons, like the contract to buy persons, is inherently invalid. To pretend that responsible human agency can be transferred from one person to another is a legalized fraud carried out on an institutional scale in our current economic system.

One of the founders of Swedish social democracy, Ernst Wigforss, made the point long ago that the labor contract is invalid because it bogusly pretends that labor can be factually transferred like a commodity—and that this is the core of whole labor question. The remarkable passage is in the 1923 report of the *Wigforss Commission on Industrial Democracy*.

“There has not been any dearth of attempts to squeeze the labor contract entirely into the shape of an ordinary purchase-and-sale agreement. The worker sells his or her labor power and the employer pays an agreed price. What more could the worker demand, and how could he or she claim a part in the governance of the company? It has already been pointed out that the determination of the price can necessitate a consensual agreement on how the firm is managed. But, above all, from a labor perspective the invalidity of the particular contract structure lies in its blindness to the fact that the labor power that the worker sells cannot like other commodities be separated from the living worker. This means that control over labor power must include control over the worker himself or herself. Here perhaps we meet the core of the whole modern labor question, and the way the problem is treated, and the perspectives from which it is judged, are what decide the character of the solutions.” [Wigforss 1923, p. 28 (translated by Patrik Witkowsky)]

A similar argument has been made independently by the contemporary political theorist, Carole Pateman.

“The contractarian argument is unassailable all the time it is accepted that abilities can “acquire” an external relation to an individual, and can be treated as if they were property. To treat abilities in this manner is also implicitly to accept that the “exchange” between employer and worker is like any other exchange of material property. ... The answer to the question of how property in the person can be contracted out is that no such procedure is possible. Labour power, capacities or services, cannot be separated from the person of the worker like pieces of property.” [Pateman 1988, pp. 147-50]

At most, a person can and typically does voluntarily agree to follow the instructions of the employer, but then, in factual terms, they each share some of the de facto responsibility for the results of their joint actions. But if no crime has been committed, then the legal authorities do not intervene to hold a trial and apply the juridical imputation principle by assigning legal responsibility in accordance with that joint de facto responsibility. Instead the legal system just counts obeying the employer as “fulfilling” the labor contract—even though there has been no factual transfer of responsible human actions (“labor services”) unlike the case of the factual transfer of the services of *things* like a wrench or truck. And then, as we saw in the description of the market mechanism of appropriation, one legal party (the employer) paid for all the input services (e.g., the services of the rented wrenches, trucks, and persons) so that party absorbs those liabilities and thus has the defensible legal claim on the produced outputs. Thus the employment system inherently violates the juridical principle of imputation since one party is factually responsible for the whole product (the party consisting of all who work in the enterprise) while another party legally appropriates the whole product (the legal party playing the role of the employer).

The employees in an employment firm have *zero* legal claims against them (qua employees) for the input-liabilities (they are only one of the parties to whom the wage-liability is owed) and they have *zero* legal claims (qua employees) on the output-assets—which is exactly *the legal role of a rented thing*. As usual, Frank Knight expresses it best:

“It is characteristic of the enterprise organization that labor is directed by its employer, not its owner, in a way analogous to material equipment. Certainly there is in this respect no sharp difference between a free laborer and a horse, not to mention a slave, who would, of course, be property.” [Knight 1965, p. 126]

This can be illustrated using our “priceless” example. All who work in a production opportunity (“Labor” including managers) are de facto responsible for using up the inputs K to produce the outputs Q, which is summarized as *Labor's product* (Q, -K, 0). But Labor (qua Labor) only legally appropriates and sells (0, 0, L) in the employment system. Labor is de facto responsible for but does not appropriate the difference which is the “institutional robbery” of the whole product: $(Q, -K, 0) - (0, 0, L) = (Q, -K, -L)$.

Labor de facto responsible for	(Q, -K, 0)	= Labor's product
Labor legally appropriates	(0, 0, L)	= labor commodity
Labor de facto responsible for but does not appropriate	$(Q, -K, 0)$ $- (0, 0, L)$ $= (Q, -K, -L)$	= whole product.

Imputation principle: Violation under the employment system

Since no prices or values were mentioned in Table 1 (or in the underlying analysis), even the most casual reader should be able to understand that the labor theory of value is not involved. It is also easy to see why neoclassical economists are so addicted to the picture of the employees as metaphorical “partners” getting their distributive share of the product! They in effect say:

As scientific economists, we don't look at the superficial legalistic assignation or imputation of property rights and liabilities in an employment firm; instead we focus our attention on the deeper question of labor's share of the product—which is justified in the ideal competitive case by the theory of marginal productivity.¹²

¹² At least, when the actual facts are considered as superficial, while metaphorical shares in the product are considered as deep, then one doesn't have to ask if science or ideology is riding in the saddle.

Before turning to marginal productivity theory, we might consider the legal system's acceptance of the employee's inextricably co-responsible performance as “fulfilling” the contract for the transfer of labor—when a crime is committed at the behest of the employer. Then the market or laissez-faire mechanism of appropriation is set aside, and the legal system intervenes in a trial to apply the juridical principle of imputation. And then the servants in work suddenly become the partners in crime.

“All who participate in a crime with a guilty intent are liable to punishment. A master and servant who so participate in a crime are liable criminally, not because they are master and servant, but because they jointly carried out a criminal venture and are both criminous.” [Batt 1967, p. 612]

When the venture being “jointly carried out” is non-criminous, the workers do not suddenly become non-persons or instruments being “employed” by the “employer.” The facts about de facto responsible co-operation remain the same.¹³ It is the reaction of the legal system that changes when no legal wrong is recognized. Then legal authorities accept the employees' same de facto co-responsible cooperation as “fulfilling” the human rental contract so there is no need for a legal intervention to make the imputation in accordance with the actual de facto responsibility. The input-suppliers have supplied their inputs fulfilling their side of the input contracts and employer has paid all the costs (and thus appropriates the input-liabilities) fulfilling his side of the input contracts, and thus the employer also has the defensible legal claim on the produced output.

That is the 'secret' or 'trick' involved in the employer's legal appropriation of the whole product produced by rented people. It has *nothing* whatever to do with prices, values, wages, exploitation (e.g., being under-paid or over-worked), bad working conditions, dominating [Roberts 2017] or oppressive [Anderson 2017] employers, bathroom breaks [Linder and Nygaard 1998], or the like.

In this manner, the employer legally appropriates the whole product—which is the negative and positive fruits of the de facto responsible human actions of all who work in the enterprise. That is the “institutional robbery—a legally established violation of the principle on which property is supposed to rest” [Clark 1899, p. 9] at the core of our private property market economy.

¹³ Of course, a contract involving a crime is legally null and void. But the worker is not de facto responsible for the crime because they made an illegal contract. The employee is de facto responsible because the employee, together with the employer, committed the crime (not because of the legal status of the contract).

Perhaps the biggest moral idiocy of Marxism is its attack on the idea of private property. Far from implying the abolition of private property, the labor theory of property might paraphrase Gandhi¹⁴ to say:

It *would* be a good idea to have a *real* private property market economy based on the principle of people legally appropriating the positive and negative fruits of their labor—instead of the property-as-theft system we have now based on the fraudulent and inherently invalid contract for the renting of human beings.

That would imply the abolition of the contract to rent, hire, or employ human beings in favor of companies being reconstituted as democratic organizations whose members are the people working in the enterprise [Ellerman 1990a]. But orthodox economists will respond:

Please, we're economists; we can't talk about property rights and contracts or some so-called “juridical principle of imputation.” That's not even part of Economics! So let's talk about economics. What you probably mean to say is that workers produce more value than they are paid—and we largely agree with you since markets are far short of the competitive ideal as is correctly pointed out by progressive economists such as Stiglitz, Piketty, Thurow, and Keen as well as by leading progressive philosophers such as Rawls. But in the ideal competitive case, workers are paid the value of their marginal product so workers then “reap what they sow.” Hence let's talk about making markets more competitive so workers will really be paid the full value of their marginal product, and then your concerns about justice—which we, of course, share—will be satisfied.¹⁵ Hence we turn to marginal productivity theory.

¹⁴ The perhaps apocryphal quote attributed to Gandhi is that when asked “What do you think of Western civilization?”, he replied “I think it *would* be a good idea.”

¹⁵ The point is that neoclassical economists face a genuine quandary at this point. Should they argue that rented workers are actually non-responsible instruments ‘employed’ by the employer—unless they commit crimes? Should they argue that people should not appropriate the fruits of their labor? The solution taken is the obvious one; just ignore all those ‘non-economic’ questions about property and contract. Work within the framing of the “problem of distribution” shared by the ‘serious’ progressive economists. And when it comes to ‘taking on the real opposition’, find the nearest Marxist to play the “useful fool” and give them a lecture on the problems in the labor theory of value and exploitation. Robert Solow’s review [Solow 2006] of Duncan Foley’s book, *Adam’s Fallacy* [Foley 2006] is an excellent example of this genre.

On the Theory of Marginal Productivity

Although economists may feign ignorance of the juridical principle of imputation, they have used, explicitly or implicitly, a metaphorical version of the principle in marginal productivity theory ever since the marginalist revolution at the beginning of the 20th century. As Milton Friedman put it, “To each according to what he and the instruments he owns produces.” [1962, pp. 161-2], or as Frank Knight put it, “what a man soweth that shall he also reap” [1956, p. 292]. However, this attempted application of the imputation principle is based on:

- a metaphor,
- a mistake, and
- a miracle.

The Metaphor: Treating Productive Services of Things like the Responsible Actions of Persons

The first and foremost problem is the neglect of the difference between responsible human actions and the non-responsible but causally efficacious (i.e., productive) services of things like a wrench, machine, or truck. This blind-spot does not differentiate orthodox from heterodox economics; heterodox economists have just as much trouble finding the R-word. This fundamental distinction between persons and things in terms of responsibility and imputation has long been part of standard jurisprudence—but is virtually unheard of in orthodox or heterodox economics.

“A *person* is the subject whose actions are susceptible to imputation. ... A *thing* is something that is not susceptible to imputation.” [Kant 1965 (1797), pp. 24-25]

Marx could not find the R-word from bourgeois jurisprudence, and economists cannot find the R-word on their own or in pathetic attempts to find some reasonable interpretation of Marx.

“Marx emphasized that labor is not the only useful factor of production. However, he did argue that it is the only useful factor of production contributed by *human society*. In this sense he considered it necessary to define all value and, therefore, all surplus value (profit, interest, and rent) as something that is produced by labor. [Baumol and Blinder 1982, p. 775]

The point of the value theory may than be summed up as follows: goods are indeed produced by labor and natural resources together. But the relevant *social* source of production is labor, not an inanimate “land.” [Baumol 1974, p. 59]

One form of the failure to differentiate is that human actions and the services of things are both treated simply as causally effective productive services. As usual, Knight expresses it best.

“We have insisted that the word “produce” in the sense of the specific [i.e., marginal] productivity theory of distribution, is used in precisely the same way as the word “cause” in scientific discourse in general.” [Knight 1965, p. 178]

“For “labor” we should now say “productive resources”.” [Knight 1956, p. 8]

Knight goes on to describe the distribution problem in those terms.

“Goods are typically produced by the co-operation of various kinds of productive services, and the special problem of distribution, in modern terms, is that of the division of this joint product among the different kinds of co-operating productive services and agents.” [Knight 1956, p. 21]

There is an old literary metaphor (a version of the pathetic fallacy) where natural forces are pictured in an animistic way as being “responsible” for certain consequences. Instead of Knight's down-grading responsible human actions to being just like the causally efficacious “productive services” of things, some economists use the opposite tactic as when an asset's services, natural forces, and human actions are all coupled together as if all were de facto responsible agents.¹⁶

“Together, the man and shovel can dig my cellar... . [L]and and labor together produce the corn harvest... .” [Samuelson 1976, pp. 536-537].

¹⁶ It is interesting that orthodox economics always treat human actions and the services of things both as being only “productive services” or both as being “responsible agents.” Economists seem to instinctively know that recognizing any fundamental difference between responsible human actions and the productive services of things in production can only lead to ‘trouble’ individually in the profession and collectively in fulfilling the social role of the profession.

However, since the demise of primitive animism, the law has only recognized persons as being responsible agents. If orthodox economists, such as Knight or Samuelson, were on jury duty for a murder trial, they would probably drop their learned ignorance of difference between the responsible actions of persons and the causally efficacious services of things. They would probably not wonder—or, at least, not out loud—how to effect the “division” of the joint responsibility “among the different kinds of co-operating productive services and agents.” They might even understand that the responsibility for the murder is imputed back through any gun or other weapon to the person using those instruments.

The legally-trained Austrian economist, Friedrich von Wieser, could find the R-word.

“The judge ... who, in his narrowly-defined task, is only concerned with the *legal imputation*, confines himself to the discovery of the legally responsible factor, –that person, in fact, who is threatened with the legal punishment. On him will rightly be laid the whole burden of the consequences, although he could never by himself alone—without instruments and all the other conditions—have committed the crime. The imputation takes for granted physical causality. ... If it is the moral imputation that is in question, then certainly no one but the labourer could be named. Land and capital have no merit that they bring forth fruit; they are dead tools in the hand of man; and the man is responsible for the use he makes of them.” [Wieser 1889, pp. 76-79]

For instance, a non-animistic version of Samuelson's statements would be that a man is responsible both for using up the services of a shovel and for thereby digging a cellar, or that labor uses up the services of land in the production of the corn harvest.

In spite of the relative commonplace of the legal assignment of liabilities in a damage suit, economists (orthodox or heterodox) seem to be particularly baffled by the negative components in the whole product vector and the corresponding assignment of the input-liabilities as the bearing of costs. They seem to find it particularly difficult to understand the negative side of responsibility, e.g., the man is responsible for using the services of the shovel or the land, or, as Wieser put it, land and capital are but “dead tools in the hand of man; and the man is responsible for the use he makes of them.”

There is a common pose that orthodox economists are scientifically judging the existing human rental system according to some normative principles such as Pareto optimality. But the social role of “economics” suggests the opposite direction of causality. Normative principles are judged according to whether or not they align with the social role of orthodox economics in giving a “scientific account” of the existing or perhaps an idealized human rental system.

For instance, Wieser summarizes the essentials of the labor theory of property (juridical imputation principle) critique of the employment system—"Land and capital have no merit that they bring forth fruit; they are dead tools in the hand of man; and the man is responsible for the use he makes of them." But that gives Wieser no second thoughts about the system of renting human beings; it only shows that the usual moral or legal notions of imputation *obviously* do not apply! It would be a *reductio ad absurdum* to apply the usual moral/legal notion of imputation to production since it conflicts with the institution of renting human beings in the free market free enterprise system! The social role of economics in the human rental system demands a new notion of "economic imputation" in accordance with another new notion of "economic responsibility".

"In the division of the return from production, we have to deal similarly ... with an imputation, – save that it is from the economic, not the judicial point of view". [Wieser 1889, p. 76]

By defining "economic responsibility" in terms of the animistic version of marginal productivity, Wieser and later orthodox economists can finally draw the conclusion demanded by their professional vocation: to show that the competitive human rental system "economically" imputes the product in accordance with "economic" responsibility. But one should not think that orthodox economists are intellectual hirelings just because they ignore the usual legal or moral principle of imputation; they can be quite critical of the non-competitive aspects of the actual economy when workers are not paid rentals according to their "economic responsibility."

Thus we arrive at one of the highpoints of neoclassical microeconomics: trying to justify a metaphorical imputation of the product with a metaphorical notion of "responsibility."

In contrast, the modern treatment of the labor theory of property (i.e., based on the juridical imputation principle) deals with the imputation of the "return from production" precisely from the moral, legal, or "juridical point of view."

The Mistake: No Division of Actual Property Rights to the Product

"Now the riddle of the Sphinx—how to allocate among two (or more) cooperating factors the total product they *jointly* produce—can be solved by use of the marginal-product concept." [Samuelson 1976, p. 541]

But it's the wrong riddle of the Sphinx. The simple mistake involved in this interpretation of MP theory is that it does not deal with the actual appropriations addressed in the Question of Predistribution: "Who is to be the whole product appropriator—in the first place?"¹⁷ There is no property-theoretic riddle since in an enterprise, one legal party, typically the employer, legally appropriates the:

$$(Q, -K, -L) = (Q, 0, 0) + (0, -K, -L) \text{ or}$$

Whole product = Positive product + Negative product.

There is no actual division of the property rights to the product. In order to address that question about the actual appropriation of the assets and liabilities created in production, one needs a theory of property, whereas marginal productivity theory is actually only a theory of the derived demand for inputs.¹⁸

It might be also noted that there is a dual metaphor that can be used to provide an ideological interpretation of marginal cost theory. Instead of metaphorically picturing all the inputs as responsible agents producing the positive product, one could picture the outputs as responsible agents using up the inputs (i.e., producing the negative product). Instead of imputing to each input "what it produces," impute or charge to each output "what it uses up." That is, in addition to saying that "an individual deserves what is produced by the resources he owns" [Friedman 1976, p. 199], one might say "an individual deserves the liabilities produced by the outputs he owns." In value terms, each buyer of a unit of the output would be charged the marginal cost and, indeed in competitive equilibrium, the price of the output is equal to marginal cost ($P = MC$).

This dual metaphor is faulty for the same reasons as the original metaphor. Outputs are not responsible for using up the inputs; the people who work in the firm are the ones who perform the responsible human actions that use up the inputs in the course of producing the outputs. And the legal liabilities for the used up inputs are not assigned to the purchasers of the outputs. By the market mechanism of appropriation, those liabilities are laissez-faire appropriated by the last owner of the used up inputs—all of which is a technical way of saying the costs lay where

¹⁷ Much ink has been spilt by Knight [1965] and others on the near-tautology that the party who "bears the risks" (i.e., appropriates the negative product) should also appropriate the positive product. Of course, *one* party appropriates the *whole* product (i.e., both the positive and negative products). The real question is: who is to be that one party?

¹⁸ The juridical principle of imputation provides no normative critique of treating genuine commodities (i.e., things) as things. Maximizing an objective function requires valuing things at their marginal contribution to the objective as indicated by the Lagrange multipliers in the mathematics of constrained optimization [Ellerman 1984, 1990b].

they fall unless a court reassigns them. The last-owner of the inputs thereby gets the legally defensible claim on the appropriable outputs which, in turn, are sold to the output buyers. Thus the actual non-metaphorical legal facts are that there is one legal party who stands between the input suppliers and the output buyers, and that one party legally appropriates the whole product, i.e., both the input-liabilities and the output-assets.

The Miracle: Each Factor's Immaculate Production of its Marginal Product

The whole picture of each unit of a factor producing its marginal product is not even remotely plausible in the first place since production requires other inputs! Each (marginal) unit of the labor L cannot “immaculately” produce *ex nihilo* its marginal product $MP_L = \Delta Q/\Delta L$ of so many widgets without using up some other services of capital and other intermediate goods summarized in K .

What technically counts as the marginal product of labor? Given an increase in labor of ΔL , the usual computation of the marginal product of labor $\Delta Q/\Delta L$ involves a shift to a slightly more labor-intensive production process so that ΔQ extra product is produced with no change in the other factors, i.e., $\Delta K = 0$. But that nominal shift in general would violate the cost-minimization assumption that requires expansion along the least-cost expansion path. Thus the ΔL would typically require an increase in the other inputs K in order to produce some extra output ΔQ at minimum costs. Hence in place of the usual scalar notion of MP_L , the neoclassical assumptions themselves require a vector notion of marginal product to account for those changes in the other inputs necessary to stay on the least-cost expansion path. Hence the *vector marginal product* of the extra labor ΔL would be a vector $MP_L = (\Delta Q, -\Delta K, 0)$. And since labor is the only de facto responsible factor, the *total* labor L would be de facto responsible for the sum (or integral in technical terms) of the vectorial marginal products of labor from 0 to L which is exactly what we previous termed:¹⁹Labor's product = $(Q, -K, 0)$.

Of course, the same mathematical calculations can be made for the causally efficacious but non-responsible inputs K (e.g., capital), but since non-responsible things do not qualify for imputation, that calculation has no normative significance.

Thus redoing the MP theory taking account of the non-metaphorical fact that in terms of legal or moral imputation “no one but the labourer could be named,” we are taken right back to the

¹⁹ The mathematics of vectorial marginal productivity theory was worked out a couple of decades ago in Chapter 5 entitled “Are Marginal Products Created *Ex Nihilo*?” of Ellerman [1995].

property-theoretic application of the juridical principle of imputation, historically known as the “labor theory of property.”

This raises the question of why doesn't neoclassical economics follow out its own assumptions by using the vector marginal products taken along the least-cost expansion path instead of the notional (immaculate) marginal products off that path? On this matter, is it science or ideology that is ‘in the saddle’? The answer seems to be that only the immaculate marginal products gives the “distribution of the product” or “distributive shares” picture (with the “exhaustion of the product” under constant returns to scale)—which can then be combined with the pseudo-application of the imputation principle to show that the competitive employment system satisfies “the ethical proposition that an individual deserves what is produced by the resources he owns.” [Friedman 1976, p. 199]

Conclusion

If the modest neo-abolitionist proposal [Ellerman 2015] were accepted that the contract for the renting of human beings be recognized as invalid and abolished, then production could only be organized on the basis of the people working in a firm (jointly) hiring or already owning the capital and other inputs they use in production. Then the *laissez-faire* market mechanism of appropriation would correctly impute the legal responsibility to the *de facto* responsible party.²⁰ The legal members of the firm as a legal party would be the people working in the firm. As the Conservative thinker, Lord Eustace Percy (1887-1958), put it:

“Here is the most urgent challenge to political invention ever offered to the jurist and the statesman. The human association which in fact produces and distributes wealth, the association of workmen, managers, technicians and directors, is not an association recognised by the law. The association which the law does recognise—the association of shareholders, creditors and directors—is incapable of production and is not expected by the law to perform these functions. We have to give law to the real association, and to withdraw meaningless privilege from the imaginary one.” [Percy 1944, p. 38; quoted in: Goyder 1961, p. 57]

²⁰ See the fundamental theorem of property theory in Ellerman [2014].

Such a firm is a *democratic firm* and the private property market economy of such firms is an *economic democracy*.²¹ The interesting implication is that, notwithstanding over two centuries of economic theorizing, the current system is not the “natural system of private property and contract” any more than would be a private property system where longer-term voluntary contracts in human capital (e.g., self-sale or voluntary slavery contracts) were legally valid.²² The natural system of private property and (non-fraudulent) contracts is one where the owner-operated proprietorship and the family farm generalize to democratic firms of any size where people are jointly working for themselves.²³

Moreover, the system of economic democracy finally resolves the long-standing conflict between being a citizen whose inalienable rights are recognized in the political sphere and being a rented “employee” in the workplace. As the visionary corporate leader (founder of RCA, President and Chairman of General Electric, and Time magazine Man of the Year for 1929), Owen D. Young (1874-1962), put it:

“Perhaps someday we may be able to organize the human beings engaged in a particular undertaking so that they truly will be the employer buying capital as a commodity in the market at the lowest price.... If that is realized, the human beings will then be entitled to all the profits over the cost of capital. I hope the day may come when these great business organizations will truly belong to the men who are giving their lives and their efforts to them, I care not in what capacity. Then they will use capital truly as a tool and they will be all interested in working it to the highest economic advantage. ... Then we shall dispose, once and for all, of the charge that in industry organizations are autocratic and not democratic. Then we shall have all the opportunities for a cultural wage which the business can provide. Then, in a word, men will be

²¹ See, for example, Robert Dahl [1985] and particularly the “Sketch of an Alternative” [p. 91]. The best examples today are probably the Mondragon industrial cooperatives in the Basque region of Spain [see Oakeshott 1978, 2000; Whyte and Whyte 1991]. Employee stock ownership plans (ESOPs) and codetermination arrangements are steps in the same direction.

²² Actually, the orthodox “fundamental theorem” that a competitive equilibrium is Pareto optimal must assume full futures markets in all commodities including labor so that theorem actually assumes long-term contracts in human capital. This is, of course, not stated in any elementary or advanced economics text but in an apparent outburst of clarity and honesty, an orthodox economist did state this in no less a forum than Congressional testimony. “Now it is time to state the conditions under which private property and free contract will lead to an optimal allocation of resources.... The institution of private property and free contract as we know it is modified to permit individuals to sell or mortgage their persons in return for present and/or future benefits.” [Christ 1975, p. 334]

²³ The legal appropriation of the output-assets and input-liabilities is, of course, not done individually but jointly in the democratic company as the “human association which in fact produces and distributes wealth.” How the net value-added is allocated between the members is part of what has to be democratically decided by the members of the company [Ellerman 1990a]—not unlike the way a democratic polity has to decide how the joint net liabilities of the government are allocated between the citizens as taxes.

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as free in cooperative undertakings and subject only to the same limitations and chances as men in individual businesses. 'Then we shall have no hired men.' [Young 1927, p. 392]

Yes, then we shall have no rented people.

References

- Adelman, Jeremy. 2013. *Worldly Philosopher: The Odyssey of Albert O. Hirschman*. Princeton NJ: Princeton University Press.
- Anderson, Elizabeth. 2017. *Private Government: How Employers Rule Our Lives (and Why We Don't Talk About It)*. Princeton NJ: Princeton University Press.
- Barzel, Yoram 1989. *Economic Analysis of Property Rights*. New York: Cambridge University Press.
- Batt, Francis. 1967. *The Law of Master and Servant*. 5th ed. London: Pitman.
- Baty, Thomas. 1918. *Loan and Hire: Notes on the English Law on Lending and Hiring*. London: Sweet and Maxwell.
- Baumol, William. 1974. "The Transformation of Values: What Marx 'Really' Meant (An Interpretation)." *Journal of Economic Literature* XII (March 1974): 51–62.
- Baumol, William, and Alan Blinder. 1982. *Economics*. 2nd ed. New York: Harcourt Brace Jovanovich.
- Begg, David, Stanley Fischer, and Rudiger Dornbusch. 1997. *Economics (Fifth Ed.)*. London: McGraw-Hill Co.
- Black, Henry C. 1968. *Black's Law Dictionary*. St. Paul: West Publishing.
- Blaug, Mark. 1958. *Ricardian Economics*. New Haven: Yale University Press.
- Calabresi, Guido. 1970. *The Costs of Accidents: A Legal and Economic Analysis*. New Haven: Yale University Press.
- Catlett, George, and Norman Olson. 1968. *ARS No.10: Accounting for Goodwill*. New York: American Institute of Certified Public Accountants.
- Christ, Carl F. 1975. "The Competitive Market and Optimal Allocative Efficiency." In *Competing Philosophies in American Political Economics*, edited by John Elliott and John Cownie, 332–38. Pacific Palisades, CA: Goodyear.
- Clark, John Bates. 1899. *The Distribution of Wealth*. New York: Macmillan.
- Cooter, Robert, and Thomas Ulen. 2004. *Law and Economics (4th Ed.)*. Boston: Pearson Addison-Wesley.
- Dahl, Robert 1985. *Preface to Economic Democracy*. Berkeley: University of California Press.
- Ellerman, David 1980a. Property Theory and Orthodox Economics. In *Growth, Profits and Property: Essays in the Revival of Political Economy*. Ed. by E. J. Nell. Cambridge: Cambridge University Press: 250-263. All my citations are available at: www.ellerman.org.
- Ellerman, David. 1980b. "On Property Theory and Value Theory." *Economic Analysis and Workers' Management* 14 (1): 105–26.

- Ellerman, David. 1983. "Marxian Exploitation Theory: A Brief Exposition, Analysis and Critique." *Philosophical Forum* XIV (Spring-Summer 1983): 315–33.
- Ellerman, David. 1984. "Arbitrage Theory: A Mathematical Introduction." *Society for Industrial and Applied Mathematics (SIAM) Review* 26 (April): 241–61.
- Ellerman, David. 1985. On the Labor Theory of Property. *Philosophical Forum*. XVI (Summer 1985): 293–326.
- Ellerman, David. 1990a. *The Democratic Worker-Owned Firm*. London: Unwin-Hyman Academic.
- Ellerman, David. 1990b. "An Arbitrage Interpretation of Classical Optimization." *Metroeconomica* 41 (3 Oct.): 259–76.
- Ellerman, David. 1993. *Property & Contract in Economics: The Case for Economic Democracy*. Cambridge MA: Blackwell.
- Ellerman, David. 1995. *Intellectual Trespassing as a Way of Life: Essays in Philosophy, Economics, and Mathematics*. Lanham MD: Rowman & Littlefield.
- Ellerman, David. 2010. "Marxism as a Capitalist Tool." *Journal of Socio-Economics* 39 (6 December): 696–700.
- Ellerman, David. 2014. "On Property Theory." *Journal of Economic Issues* XLVIII (3 Sept.): 601–24.
- Ellerman, David. 2015. "On the Renting of Persons: The Neo-Abolitionist Case Against Today's Peculiar Institution." *Economic Thought* 4 (1): 1–20.
- Fairchild, Henry Pratt. 1916. *Outline of Applied Sociology*. New York: Macmillan.
- Faust, Drew Gilpin, ed. 1981. *The Ideology of Slavery: Proslavery Thought in the Antebellum South, 1830-1860*. Baton Rouge: Louisiana State University Press.
- Finkelman, Paul. 2003. *Defending Slavery: Proslavery Thought in the Old South: A Brief History with Documents*. Boston: Bedford / St. Martin's.
- Fischer, Stanley, Rudiger Dornbusch, and Richard Schmalensee. 1988. *Economics*. New York: McGraw-Hill Co.
- Foley, Duncan K. 2006. *Adam's Fallacy: A Guide to Economic Theology*. Cambridge MA: Belknap Press.
- Friedman, Milton. 1962. *Capitalism and Freedom*. Chicago: University of Chicago Press.
- Friedman, Milton. 1976. *Price Theory*. Chicago: Aldine.
- Furubotn, Eirik, and Svetozar Pejovich, eds. 1974. *The Economics of Property Rights*. Cambridge: Ballinger Publishing Company.
- Furubotn, Eirik and Rudolf Richter 1998. *Institutions and Economic Theory: The Contributions of the New Institutional Economics*. Ann Arbor: University of Michigan.
- Galbraith, James K. 2012. *Income and Instability*. New York: Oxford University Press.

- Gierke, Otto von 1958. *Political Theories of the Middle Age*. Trans. F. Maitland. Boston: Beacon.
- Goyder, George. 1961. *The Responsible Company*. Oxford: Basil Blackwell.
- Harcourt, G. C. 1972. *Some Cambridge Controversies in the Theory of Capital*. Cambridge: Cambridge University Press.
- Hart, H. L. A. 1968. *Punishment and Responsibility: Essays in the Philosophy of Law*. New York: Oxford University Press.
- Hodgskin, Thomas. 1973 (1832). *The Natural and Artificial Right of Property Contrasted*. Clifton NJ: Augustus M. Kelley.
- Holmstrom, Bengt, and Jean Tirole. 1989. "The Theory of the Firm." In *Handbook of Industrial Organization*, edited by Richard Schmalensee and Robert Willig, I:61–133. Amsterdam: North-Holland.
- Kant, Immanuel. 1965 (1797). *The Metaphysical Elements of Justice: Part I of The Metaphysics of Morals*. Translated by John Ladd. Indianapolis: Bobbs-Merrill.
- Keen, Steve. 2011. *Debunking Economics—Revised and Expanded Edition: The Naked Emperor Dethroned?*. London: Zed Books.
- Knight, Frank H. 1956. *On the History and Method of Economics*. Chicago: Phoenix Books.
- Knight, Frank H. 1965 (1921). *Risk, Uncertainty and Profit*. New York: Harper Torchbooks.
- Knight, Frank H. 1969. *The Ethics of Competition and Other Essays*. Freeport NY: Books for Libraries Press.
- Linder, Marc, and Ingrid Nygaard. 1998. *Void Where Prohibited: Rest Breaks and the Right to Urinate on Company Time*. Ithaca NY: Cornell University Press.
- Locke, John. 1960 (1690). *Two Treatises of Government*. Edited with notes by Peter Laslett. New York: New American Library.
- Maitland, Frederic W. 1960. *Frederic William Maitland: Historian*. Edited by R. L. Schuyler. Berkeley: University of California Press.
- Marx, Karl. 1977 (1867). *Capital (Volume I)*. Trans. by Benjamin Fowkes. New York: Vintage Books.
- McKittrick, Eric. 1963. *Slavery Defended: The Views of the Old South*. Englewood Cliffs NJ: Prentice-Hall.
- Menger, Anton. 1899. *The Right to the Whole Produce of Labour: The Origin and Development of the Theory of Labour's Claim to the Whole Product of Industry*. Translated by M.E. Tanner. London: Macmillan and Co. Reprinted by Augustus Kelly 1970.
- Miceli, Thomas J. 1999. Property. In *The Elgar Companion to Law and Economics*. Ed. by J. Backhaus. Cheltenham UK: Edward Elgar: 121-35.
- Mill, James. 1826. *Elements of Political Economy*. 3rd ed. London.

- Oakeshott, Robert 1978. *The Case for Workers' Co-ops*. London: Routledge and Kegan Paul.
- Oakeshott, Robert 2000. *Jobs and Fairness: The Logic and Experience of Employee Ownership*. Norwich UK: Michael Russell.
- Pateman, Carole. 1988. *The Sexual Contract*. Stanford: Stanford University Press.
- Percy, Eustace. 1944. *The Unknown State: 16th Riddell Memorial Lectures*. London: Oxford University Press.
- Perry, Stephen. 1997. "Libertarianism, Entitlement, and Responsibility." *Philosophy & Public Affairs* 26 (4 (Fall)): 351–96.
- Piketty, Thomas. 2014. *Capital in the Twenty-First Century*. Trans. Arthur Goldhammer. Cambridge MA: Harvard University Press.
- Proudhon, P. -J. 1970 (1840). *What Is Property?: An Inquiry into the Principle of Right and of Government*. New York: Dover.
- Putterman, Louis, and Randall S. Kroszner. 1996. *The Economic Nature of the Firm*. 2nd ed. Cambridge: Cambridge University Press.
- Quirk, J., and R. Saposnik. 1968. *Introduction to General Equilibrium Theory and Welfare Economics*. New York: McGraw-Hill.
- Rawls, John. 1999. *A Theory of Justice (Revised Ed.)*. Cambridge MA: Belknap Press.
- Roberts, William Clare. 2017. *Marx's Inferno: The Political Theory of Capital*. Princeton NJ: Princeton University Press.
- Rothstein, Bo. 1992. "Social Justice and State Capacity." *Politics & Society* 20 (1): 101–26.
- Rothstein, Bo. 2011. *The Quality of Government: Corruption, Social Trust, and Inequality in International Perspective*. Chicago: University of Chicago Press.
- Samuelson, Paul A. 1976. *Economics (10th ed.)*. New York: McGraw-Hill.
- Schlatter, Richard. 1951. *Private Property: The History of an Idea*. New Brunswick: Rutgers University Press.
- Seabury, Samuel. 1969 (1861). *American Slavery Justified by the Law of Nature*. Miami: Mnemosyne Publishing Company.
- Solow, Robert M. 2006. "How to Understand the Economy. A Review of Adam's Fallacy: A Guide to Economic Theology, by Duncan K. Foley." *New York Review of Books*, 53 (18), November 16.
- Stiglitz, Joseph. 2012. *The Price of Inequality: How Today's Divided Society Endangers Our Future*. New York: W.W. Norton.
- Thurow, Lester. 1975. *Generating Inequality: Mechanisms of Distribution in the U.S. Economy*. New York: Basic Books.
- Tuck, Richard. 1979. *Natural Rights Theories*. Cambridge: Cambridge University Press.

Umbeck, John. 1981. "Might Makes Right: A Theory of the Formation and Initial Distribution of Property Rights." *Economic Inquiry* 19 (1): 38–59.

Varian, Hal. 1992. *Microeconomic Analysis*. 3rd ed. New York: W.W. Norton.

Whyte, William Foote, and Kathleen King Whyte. 1991. *Making Mondragon*. 2nd ed. revised. Ithaca: ILR Press.

Wieser, Friedrich von. 1930 (1889). *Natural Value*. Translated by C. A. Malloch. New York: G.E. Stechert and Company.

Wigforss, Ernst. 1923. *Den Industriella Demokratiens Problem 1*. Stockholm: A.-B. Hasse W. Tullbergs boktryckeri.

Young, Owen D. 1927. "Dedication Address." *Harvard Business Review* V (4 July): 385–94.