

The Labor Theory of Property and Heterodox Economics

David Ellerman

University of California/Riverside

www.ellerman.org

Abstract

After Marx, dissenting economics almost always used "the labor theory" as a theory of *value*. This paper develops a modern treatment of the alternative labor theory *of property* that is essentially the property theoretic application of the juridical principle of responsibility: impute legal responsibility in accordance with who was in fact responsible. To understand descriptively how assets and liabilities are appropriated in normal production, a "fundamental myth" needs to be cleared away, and then the market mechanism of appropriation can be understood. The property-theoretic analysis at the firm level shows how the neoclassical (and much heterodox) analysis in terms of "distributive shares" wholly misframes the basic questions. Finally, the paper shows how the responsibility principle (modernized labor theory of property) is systematically violated in the present wage labor system of renting persons. The paper can be seen as taking up the recent challenge posed by Donald Katzner for a dialogue between neoclassical and heterodox microeconomics. Katzner argues that some of the non-property-theoretic heterodox critiques of neoclassical microeconomics are objectively invalid, but he ignores the property-theoretic analysis (e.g., the labor theory of property) which often seems to be as unknown to heterodox as to orthodox economics.

Keywords: labor theory of property, responsibility, imputation, appropriation, whole product, labor theory of value

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Introduction: LTP, the Path Not Taken

In the pre-Marxian period, there was a group of heterodox political economists, including Thomas Hodgskin [1973 (1832)] and Pierre-Joseph Proudhon [1970 (1840)], who tried to develop the inchoate in-the-air ideas about the unique and normatively-relevant role of labor (as opposed to the other "factors of production") into a labor theory of property (LTP) [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 [Ellerman 1983, 1992, 2010a] has made it the favorite foil of orthodox economics.

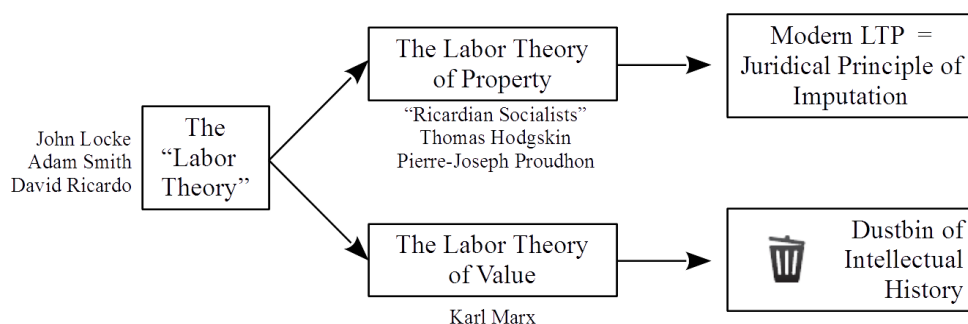


Figure 1: Fork in the Road: How to Develop the Theory about Labor

This paper outlines a modern attempt [Ellerman 1992, 2014b] to go back to that fork in the road and take the other path. This property-theoretic approach to the microeconomic (e.g., firm-level) questions, usually ill-posed as being only about theories of value and distribution, can also be seen a contributing to the dialogue proposed by Donald Katzner [2015] between neoclassical microeconomics and heterodox political economy.

The Conventional Neglect of the Question of Appropriation

The labor theory of property is a normative theory, but there is also a descriptive theory of property as to how property rights are actually created and terminated in a conventional private property market economy. Neoclassical microeconomics "neglects" that descriptive theory in favor of focusing on the distributive shares metaphor that "pictures" each party to production as getting a "share" so the only question to be addressed is the value-theoretic question about the size of the "shares."

In ordinary economic activity, property rights are being constantly created in production (the produced outputs) and they are constantly being terminated in consumption (consumption goods) as well as production activities (inputs consumed in production).¹ It is a remarkable fact—which itself calls for explanation—that the literature on the economics of property rights *does not even formulate the question* about the mechanism for the initiation and termination of property rights in these normal activities of production and consumption.

One reason for the neglect is that discussions of property creation tend to be restricted to a rather mythical state of nature [e.g., Locke 1960 (1690)] or original position, or to the "appropriation" of unclaimed or commonly owned natural goods [e.g., Cooter and Ulen 2004] rather than the everyday matters of production and consumption of commodities where property rights are constantly created and terminated. On the negative 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 [Calabresi 1970]. But what is the mechanism for assigning the liabilities for the production inputs and consumption goods that are used up or consumed in normal deliberate activities where legal trials are clearly not the mechanism for liability assignment?

The Fundamental Myth that Product Rights are Part of Capital Rights

In the case of production (leaving aside consumption for the moment), there is a reason—albeit a mistaken one—for not formulating the question of the mechanism for the appropriation of the assets and liabilities produced in normal production. It is rather commonly thought that the product rights are "attached to" or are "part and parcel of" some pre-existing property right such as the ownership of a capital asset, a production set, or, simply, the firm. This idea in various forms is so ubiquitous that it might be termed the "fundamental myth" about the current private property system.

¹ 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, 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."

To see the fallacy, one only has to consider the result of renting the capital employed in production. 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 to whom the rent was being paid as one of the input costs. Since it is not a major intellectual feat to conceptually consider capital as being rented out, the persistence of the fundamental myth points to its ideological role on both the left and right.

The simplest version of this fundamental myth is the assumption that the bundle of rights that constitute ownership of an asset includes "a right of ownership-over-the-asset's-products, or *jus fruendi*" [Montias 1976, 116], the "right of usufruct [which] entitles the holder to the 'fruits' or 'produce' derived from an asset" [Furubotn and Richter 1998, 79], or simply "the right to the products of the asset" [Putterman 1996, 361]. Aside from being vulnerable to the "rent out the asset" argument given above, this idea of an "asset's product" has an antique flavor prior to the understanding (e.g., marginal productivity theory) that the services of *many* assets may be employed in the production and there are no grounds of unique *physical* causality to present the product as the "fruits" or "produce" of just one asset (e.g., the land) or service.

Perhaps the primary source of the fundamental myth is the confusion between owning a corporation and "owning" the productive opportunity that a corporation may or may undertake depending on its contracts. The line of reasoning is: "a corporation is an owned asset [true] and a corporation owns its products [by definition] so there is no need for some mechanism to account for the ownership of the product [false]—it's all part of the ownership of the corporation [false]." It is only a tautology to say that a corporation owns "its products"; the question is how did the products produced in a certain productive opportunity, perhaps using some of its assets, become "its products." For instance, must the Studebaker Corporation own the cars rolling off the end of the assembly line in the factory owned by Studebaker? Since Studebaker at one point leased its factory building to another automaker, the answer is "No." Those cars were 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 cars rolling off the end of the assembly line.

The simple fact is that the ownership of a corporation is the indirect ownership of the corporate assets (e.g., the Studebaker factory building) and the "rent the capital" argument still

applies to those assets (i.e., not to the corporation as a whole but to its assets). Whether or not the company owns the products produced using some of those assets depends on whether the company leases out those assets to some other party (who would then appropriate the product) or the company hires in a complementary set of inputs to undertake the production opportunity itself. 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). Since that party undertaking production is determined by who was the nexus of the hiring contracts (who hires or already owns what or whom), the rights to the product are not part of some prior bundle of rights to a capital asset or to a corporation. The grip of the fundamental myth in one form or another seems to account for the failure *to even formulate the question*, not to mention the mechanism, of the appropriation of the assets and liabilities that are created in normal production activities.

Origins of the Fundamental Myth

The intellectual space to ask the question of appropriation in production was opened up by the realization that product rights were not part of capital rights—the "fundamental myth." Whence the fundamental myth? The myth is not a point of contention between orthodox economics and its favorite foil, Marxian economics. Both agree product rights are attached to the "ownership of the means of production" but disagree about that ownership being private or public. Marx shares responsibility by having given his imprimatur but the idea goes back to older notions of land ownership. In feudal times, the governance of people living on land was taken as an attribute of the ownership of that land. The landlord was Lord of the land. As Otto von Gierke put it, "Rulership and Ownership were blent" [1958, 88]. Marx mistakenly carried over that idea to his analysis of capital in the system that he thus inappropriately named "capitalism." The command over the production process was taken as part of the bundle of capital ownership rights.

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 1967 (1867), 332]

Marx's use of the fundamental myth that governance and product rights were part of capital is one of many points of agreement between Marxism and orthodox economics [Ellerman 2010a].

In defense of Marx, by "capital" he did not simply mean financial or physical capital goods; he meant those goods used by wage labor with private ownership of the means of production. Otherwise, "capital" becomes just the "means of labor." In short,

Marx's capital* = Means of labor (capital) + contractual role of being the firm using wage labor.

If one wishes to use the word "capital*" in that Marxian sense, then one gives up being able to talk about the "*ownership* of capital" since there is no "ownership" of that extra contractual role. But Marx continued to talk about "capital" as being owned, a common fallacy of using the same word with different meanings at different places in an argument. Many versions of the fundamental myth take the same form of assuming that the capital owner has the contractual role of being the firm (i.e., capital*) and then taking all the property rights accruing to capital* as being part of the ownership of capital (sans asterisk *).

For instance, take the common notion of "owning a factory." There is the ownership of factory buildings (or 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" 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 is a contractual role, not an extra owned property right, a typical orthodox response is: "Yes, but it is that role which is called the 'ownership*' role." After thus redefining factory-ownership* to *include* the contractual role of residual claimancy, the semantics shifts back to conclude that "the product rights are part of the ownership of the factory" (meaning the ownership of the factory building). Such loose patterns of thought in neoclassical and Marxian economics allow the fundamental myth to persist.

The “Invisible Judge” Mechanism of Property Appropriation

Since Adam Smith, economic theory has worked to elucidate the invisible hand mechanism embodied in the price system that guides property rights towards an efficient allocation. However, the life-cycle of property rights includes not just transfers in the market but the initiation and termination of the property rights.

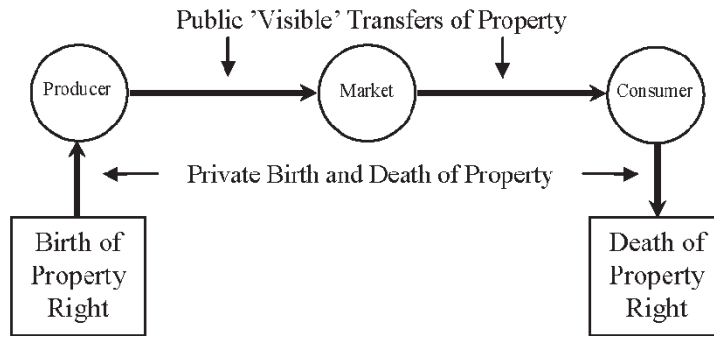


Figure 2: Life-cycle of a Property Right

The market also embodies an invisible hand mechanism that governs the initiation and termination of property rights—but this mechanism seems to have been truly invisible to both orthodox and heterodox economists due to the many forms of the fundamental myth that the product rights are already included in pre-existing capital rights.

There is a *visible*-hand mechanism of appropriation used when the legal system intervenes into the market. The prime example is a civil or criminal trial to assign the legal liability for property that has been destroyed. Such a trial also illustrates the underlying *juridical principle of imputation*: assign the de jure or legal responsibility to the person or persons who were actually de facto responsible for destroying the property.

The *invisible* hand mechanism for the legal assignment of initial and terminal rights comes into play when there is no explicit trial—when the visible hand of the legal authorities does not intervene and when it thus, in effect, renders the *laissez faire* judgment of "let it be." Using the Smithian metaphor, we might conceptualize "non-action" on the part of the legal authorities as the ruling of the "Invisible Judge" who always rules "let it be."

There are two types of contracts where the role of the Invisible Judge is particularly important, namely, the first and last transfer contracts in the life-cycle of a commodity.² When a newly produced commodity is first sold and the Invisible Judge lets it be, then the first property right was, in effect, assigned to the first seller. Conversely, when a purchased commodity is subsequently consumed, used up, or destroyed and the Invisible Judge lets it be, then the liability was, in effect, assigned to the last buyer. Thus we have the:

² Our focus is on commodities, rivalrous and excludable private goods that are produced and consumed as a part of deliberate human activity—even though in the distant past there may have been endowments of unproduced goods.

Market mechanism of appropriation:

The property rights (or liabilities) to newly produced (respectively, finally used-up) commodities are assigned by the Invisible Judge to the first seller (respectively, last buyer) of the commodities.

The application to normal consumption is straightforward. When a commodity is consumed and the Invisible Judge lets it be, then the liability for the using up or consumption of the commodity is imputed to the last buyer.

The most important and consequential application of the market mechanism of appropriation is to normal production activities. Abstractly considered, one legal party purchases (or already owns from past purchases or activities) all the "inputs" to be used up in the production process. When those inputs are used up and new products or "outputs" are produced, then the last buyer of the inputs is in a legally defensible position to be the first seller of the outputs unless the legal authorities would intervene to overturn both sets of contracts. Hence when no such intervention takes places—as in normal production—then that one legal party in effect legally appropriates a bundle of both legal liabilities and ownership rights, the input liabilities and the output assets.

The recognition of the market mechanism of appropriation shows that the market has an under-appreciated role in the property system. The market is not just for rearranging existing property rights. In view of the widespread belief in some form of the fundamental myth, many supporters and critics of the current private property system have misplaced their focus. The pattern of appropriation is conceptually defined not by the ownership of property but by the pattern of contracts (although the ownership of property obviously plays an indirect role in the bargaining power to make contracts one way rather than another). When the legal system validates or invalidates certain contracts, the property system is also transformed. We turn now to some of the microeconomic mistakes ultimately due to the fundamental myth and thus exposed by the market mechanism of appropriation.

Some Descriptive Property-Theoretic Implications for Microeconomics

Implications for Capital Theory

The fundamental myth is embedded in some of the basic definitions of capital theory and thus in corporate finance theory in a way wholly missed by *both* sides in the previous "capital theory

controversies" [e.g., Harcourt 1972] between Cambridge MA and Cambridge UK. We need to introduce some more notation and terminology to express the problems in terms familiar in economics.

If a production opportunity during a certain time period were described by a production function $Q = f(K,L)$, then the "inputs" would be the flow of capital services K (shorthand for all non-human inputs) and the flow of labor services L (shorthand for all the de facto responsible human activities of production in a given production opportunity or "firm"), and the outputs Q produced during the period. The last buyer of the inputs would receive the *laissez faire* assignment or "imputation" of the liabilities for those used-up inputs which can be represented by the negative quantities $-K$ and $-L$. Hence that party would have the legally defensible claim on the outputs (in the absence of any overturning of the input contracts) and thus the Invisible Judge would also let stand that party's first sale of the output assets $+Q$. Putting the bundle of assets and liabilities that were thus appropriated together in one list or "vector" yields $(Q,-K,-L)$. This is sometimes called the "production vector" or "input-output vector" but for historical reasons, I will call it the *whole product* vector.³

Ordinarily, "product" just refers to the outputs Q but the whole product also includes the liabilities for the used-up inputs. While prices play no essential role in property theory, they will be used here to relate property theoretic notions back to economic theory. If p , r , and w are the unit prices of the outputs, capital services, and labor services respectively, then the value of the whole product is the *profits* $\pi = pQ - rK - wL$. Both the prices and services could be shorthand for price and quantity vectors, which emphasizes the point that this analysis has nothing to do with aggregation problems (e.g., treating capital as a scalar quantity).

One form of the fundamental myth is the idea that the "product rights" are part of the ownership of the capital asset, say a widget-maker machine, from which the capital services K flow. Let us suppose that the capital asset, for the sake of simplicity, would yield the capital services K without diminution for n years and then has no salvage value. The asset owner has the property right to the stream of capital services K or, in vectorial terms, $(0,K,0)$ each year for n years. But if the asset owner also has the contractual role of "being the firm" or residual claimant

³ I have used the "whole product" phrase to recognize the labor theory of property tradition summarized by Carl Menger's jurisprudential brother, Anton Menger [1899].

in that production opportunity for the n years, then that party will additionally appropriate the whole products (Q,-K,-L) which sum to the stream of net ownership vectors (Q,0,-L) for n years [the first row plus the second row equals the bottom row in the following table 1].

Table 1	Year 1	Year 2	...	Year n
Property vector owned by asset owner.	(0,K,0)	(0,K,0)	...	(0,K,0)
+ Property vector appropriated by last owner of inputs (residual claimant).	+ (Q,-K,-L)	+ (Q,-K,-L)	...	+ (Q,-K,-L)
= Net property vector accruing to asset owner who is <i>also</i> the residual claimant.	= (Q,0,-L)	= (Q,0,-L)	...	= (Q,0,-L)

Analysis of what asset-owner owns or appropriates depending on contractual role

Orthodox capital theory then discounts the value of the net vectors (Q,0,-L) [bottom row in table 1], sometime called the "quasi-rent earned by the machine" [Stonier and Hague 1973, 328], back to the present to arrive as the "capitalized value of the asset" as if the right to the whole products [second row] had been part of the ownership of the assets.

When a man buys an investment or capital-asset, he purchases the right to the series of prospective returns, which he expects to obtain from selling its output, after deducting the running expenses of obtaining that output, during the life of the asset. [Keynes 1936, 135]

But the appropriation of the whole products is contingent on a certain contractual fact-pattern, and it is not a violation of the ownership rights of the asset owner for the asset to be hired out instead of labor being hired in. Thus the value of the whole products ("profits") might or might not go to the asset owner depending on the future pattern of the input contracts. The "capitalized value of the asset" is actually the value of the asset [discounted value of the (0,K,0) stream in the first row] plus the "goodwill" which is the discounted value of the stream of whole products [discounted value of the (Q,-K,-L) stream in the second row]—where the latter may or may not accrue to the asset owner.

Implications for Corporate Finance Theory

Pace the fundamental myth, there is no legal necessity that the owner of the widget machine be the residual claimant (with respect to the widget making process), and the same holds when the

machine-owner is a corporation. Yet corporate finance theory carries over the same capital-theoretic fallacy of interpreting the whole product as part of asset ownership. For instance, the discounted cash flow method of valuation routinely assigns to the corporation the present value of the net cash flows [e.g., from $(Q,0,-L)$ on the bottom row of Table 1] from production rather than the present value of the cash flows from the services of the underlying corporate assets [e.g., from $(0,K,0)$ on the top row].

There, in valuing any specific machine we discount at the market rate of interest the stream of cash receipts generated by the machine; plus any scrap or terminal value of the machine; and minus the stream of cash outlays for direct labor, materials, repairs, and capital additions. The same approach, of course, can also be applied to the firm as a whole which may be thought of in this context as simply a large, composite machine. [Miller and Modigliani 1961, 415]

But in order to plausibly count the future whole products as part of the present property rights of the corporation, all the future input contracts would have to be made in favor of the corporation at the present time. Moreover, since contracts are generally not enforceable until one side performs, the corporation would have to have paid all future input contracts at the present time. Only then could the corporation have a plausible claim on the future whole products. Since those conditions would hardly be fulfilled, the usual discounted cash flow method of valuation does *not* value the property rights "of the corporation."

Corporate valuation theory takes the future whole products and their value, the future profits—with "goodwill" as the discounted value—as part of bundle of ownership rights in a corporation—as if corporations "owned" the entire future pattern of contracts. Buyers of corporate shares might assume that future contracts will be written in the same way but no *property right* backs up that expectation.⁴

Normative Property Theory of Appropriation and Transfers

The fundamental theorem for the competitive *price* mechanism proves a correspondence between the descriptive or positive notion of a competitive equilibrium and the normative notion

⁴ The idea that a corporation "owns" an assumed pattern of future contracts is not only fundamental to corporate finance theory and capital theory; it is behind the idea of regulatory "takings" [see Epstein 1985] and the attempt to enshrine "compensation" for such "takings" in international trade agreements.

of Pareto efficiency. The fundamental theorem for the Invisible Judge market mechanism of appropriation has the same logical form of a correspondence between a descriptive situation and a normative principle of appropriation.

The modern treatment of the labor theory of property is based on interpreting it as the property-theoretic application of the usual juridical responsibility principle: assign de jure (or legal) responsibility in accordance with de facto (or factual) responsibility. Since this principle is used in the interventions of the visible hand of the law, i.e., legal trials, it is natural to see under what conditions the invisible hand mechanism of the property system follows the same principle.

There is an old literary metaphor (a version of the pathetic fallacy) where natural forces are pictured as being "responsible" for certain consequences. Economists sometimes indulge these picturesque images as when an asset is imagined as producing a (marginal) product⁵ or when natural forces and human actions are coupled together as if both were de facto responsible. "Together, the man and shovel can dig my cellar" and "land and labor together produce the corn harvest" [Samuelson 1976, 536-537]. However since the demise of primitive animism, the law has only recognized persons as being capable of being responsible. As the legally-trained Austrian economist, Friedrich von Wieser, put it:

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, 76-79]

The responsibility for the results of using tools or assets is imputed back through the things to the human users. For instance, a description without the pathetic fallacy would be that a man is

⁵ For instance, "To each according to what he and the instruments he owns produces." [Friedman 1962, 161-162]

responsible both for using up the services of a shovel and for thereby digging a cellar (note the positive and negative side of responsibility)—or that labor uses up the services of land in the production of the corn harvest.

There is a common pose that orthodox economists are judging the existing system according to some normative principles but the causality seems to be the reverse. 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 system. For instance, Wieser summarizes the essence 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 moral or legal notions of imputation do not apply! The social role of economics requires 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, 76]

By defining "economic responsibility" in terms of the animistic version of marginal productivity, Wieser could finally draw the conclusion demanded by his calling: to show that the competitive employment system "economically" imputes the product in accordance with "economic" responsibility. Thus we arrive at one of the highpoints of neoclassical microeconomics: trying to justify a metaphorical "division" of the product with a metaphorical notion of "responsibility."⁶

There is also a certain ambivalence, if not incoherence, in conventional neoclassical economics between the treatment of human preferences and the human actions. Human

⁶ This property-theoretic analysis might be compared to one popular heterodox "debunking" of the neoclassical result "to each according to his contribution" in competitive equilibrium which argues not that the whole setup is bogus but merely that labor supply or demand curves may not have the assumed slope, that these markets are not typically competitive, that there are problems in measurement and aggregation, and other similar observations that neoclassical microeconomic models are unrealistic and idealized! [Keen 2011, Chapter 6] It is at this level of supply and demand analysis of price determination that Katzner [2015] engages the type of value-theoretic heterodox economics that is equally devoid of property-theoretic concepts like appropriation (of the whole product) or the legal/moral notion of responsibility that applies, as noted even by Wieser, only to the actions of persons and not to the causally efficacious services of things.

preferences are singled out over the revealed preferences of animals and things for special treatment in normative economics. Anyone who defined Pareto efficiency using a vector ordering that included the (revealed) preferences of rats and insects as well as persons would be considered somewhat daft. Yet the standard practice in orthodox economics is to list the services of things and animals along side responsible human actions in an undifferentiated list of "inputs" as in the generic production function $y = f(x_1, x_2, \dots, x_n)$.⁷



Figure 3: Animals as responsible agents

Any prosecutor who hauled the instruments of a crime into court along with the alleged perpetrator and charged them all with the crime—would also be considered daft or perhaps as having taken too many economics courses. In any case, the responsibility principle in jurisprudence (i.e., the LTP) singles out persons as being the sole source of responsibility—as noted by Wieser (and never repeated, to my knowledge, in later economics books all of which learned to use input-animism/pathetic-fallacy coupled with the distributive shares metaphor).

The Paretian criterion of efficiency does not involve interpersonal comparisons of individual welfare. But "welfare economics" tries to go further. For instance, one standard path beyond the Paretian criterion is to use the Kaldor-Hicks criterion (a potential Pareto improvement where the gainers could but don't necessarily compensate the losers) to modernize the Marshall-Pigou

⁷ Of course, notation such as $Q = f(K,L)$ is also used but with L treated as any other input. See "Chapter 5: Are Marginal Products Created *ex Nihilo*?" in Ellerman [1995] on how the mathematics would be different if responsible human actions were treated differently from causally efficacious but non-responsible services. That automatically requires taking into account the negative product and thus sets aside the neoclassical distributive shares metaphor in favor of an accurate description of the flows of property assets and liabilities in production.

tradition of welfare economics. A proposed social change satisfying the KH criterion is parsed into an increase in a monetized social pie ("social wealth") and a redistribution of the pie. The welfare economist can supposedly recommend the increase in "social wealth" as an increase in "efficiency" while the redistributive part of the change is a separate question of "equity" outside of the bailiwick of the professional economist. This methodology is the basis for the orthodox economic treatment of the law (Chicago wealth-maximization school of law and economics) and for cost-benefit analysis.

However, the author [2009, 2014a] has elsewhere shown that this attempt to travel the road beyond the Paretian criterion in the direction of welfare economics falls apart under a simple numeraire-reversing redescription of the proposed change. That redescription of exactly the same proposed change reverses the "efficiency" part and the "equity" part of the Marshall-Pigou-Kaldor-Hicks analysis—so any "professional" economic policy recommendation based on that faulty logic would also be reversed and is thus incoherent.

The alternative and less traveled road beyond the Paretian criterion is a rights-based theory that takes seriously the Kantian incommensurability of persons [Ellerman 1988] and that eschews any normative notion of social welfare. The normative property theory developed here takes the rights-based path. The labor theory of property moves beyond the Paretian criterion by applying the usual juridical responsibility principle—impute de jure responsibility in accordance with de facto responsibility—to the question of the appropriation of the assets and liabilities created in normal production (and consumption) activities.⁸

If the responsibility principle governs the appropriation of assets and liabilities—the beginning and end points in the life cycle of a property right—then what is the principle to govern the transfers in between? That question is relatively uncontroversial: the principle of consent. The legally permitted transfers in property rights of a person are to be those that have the consent of the owner. "Consent is the moral component that distinguishes valid from invalid transfers of alienable rights." [Barnett 1986, 270] The key word here is "alienable"; see the later section on

⁸ "[This] is itself a principle about natural responsibility, and so, as a guide for adjudication, unites adjudication and private morality and permits the claim that a decision in a hard case, assigning responsibility to some party, simply recognizes that party's moral responsibility." [Dworkin 1985, 288] See also Perry [1997].

the analysis of the employment contract for the argument about the de facto inalienability of responsible human actions, a.k.a., labor services.

The Fundamental Theorem for the Property Mechanism

Property theory as modeled here is about the appropriation and transfers of property in production and consumption in an on-going market economy. The theory is silent on any initial endowment of property rights. The Lockean idea that one should appropriate the fruits of one's labor applied to the commons is an application of the responsibility principle. But one's labor also had the negative fruits of using up some portion of the commons and the same principle implies that one ought to hold that liability. The question of endowment is only about to whom that liability for using up the fruits of nature should be owed. Is it "society" as organized in the state? Is it some version of past, present, and future humanity? Is it humanity in one's own person so that no external liability is owed? The normative theory given here does not specify an endowment point; it simply assumes one so that we may model the appropriations and transfers *in the normal production and consumption activities of a private property market economy*.

There are two ways⁹ in which property transfers might go wrong: 1) if a property transfer was made without any voluntary legal contract, which will be called a "property externality" or simply an *externality*, or 2) if a legal contract was not fulfilled by the actual transfers, namely, a *breach*.

In this simple model of the property system, the legal system has two normative tasks: to implement the responsibility principle in the production and consumption activities of the parties, and to implement the consent principle in the transfers between parties. The responsibility principle is concerned with the internal activities of the parties whereas the transfer contracts deal with the external relationships between parties. But in a market system, the two tasks are related. The key result, the fundamental theorem, is that if the legal authorities just ensure that the contractual machinery works correctly in the external relationships between parties—no externalities and no breaches—then the market mechanism of appropriation will indeed satisfy the responsibility principle in the internal activities of the parties.

⁹ Whenever two things are to be matched, there are always two ways it can go wrong, like type 1 and type 2 errors in statistics.

It may (or may not) be useful to put historical tags on the external condition about transfers and on the internal condition about appropriation. The conditions on transfer—no externalities and no breaches—might be called "Hume's conditions" because of his emphasis on "*transference by consent, and of the performance of promises.*" [Hume 1978 (1739), Book III, Part II, Section VI, 526]. The responsibility principle concerning appropriation will be called "Locke's principle."¹⁰ The fundamental theorem then takes the form: "Hume implies Locke."

Fundamental theorem for the property mechanism ("Hume implies Locke"):

If there are no breaches and no externalities in the market contractual mechanism of transfers, then the market mechanism of appropriation imputes legal responsibility in accordance with de facto responsibility, i.e., operates correctly in terms of the responsibility principle.¹¹

Enforce the contractual rules between the parties and then the Invisible Judge will make the right imputations to the parties. In the contrapositive form (Not-Locke implies Not-Hume), the theorem states that if there was a misimputation by the Invisible Judge in production, then it would have to show up publicly as a property externality or a breached contract. This is the property-theoretic refutation of Marx's charge that there could be exploitation in the "hidden abode of production" while the sphere of exchange "is in fact a very Eden of the innate rights of man" [Marx 1967 (1867), 176].

Analysis of the Employment Contract

The property theoretic question is *not* about the value-theoretic notion of "distributive shares" since in fact the various input-suppliers do not appropriate shares in the *positive product* Q . That whole distributive shares analysis is only a metaphor from the property-theoretic viewpoint. There is also a dual metaphor about the output-demanders using up the inputs and thus having shares in the *negative product* $(0, -K, -L)$ as claims against them. The dual metaphor tells a "story" about marginal cost pricing of outputs just as the usual "story" leads to the marginal productivity costing of inputs. But these dual metaphors duel only with each other.

¹⁰ These historical tags are not intended as an explication of Hume's or Locke's thought. Indeed, I have argued elsewhere [1992] that Locke is not a "Lockean" in the sense of adhering to the responsibility principle.

¹¹ See Ellerman 2014b for an informal development and proof of this theorem (easily formalized using vector flows on graphs).

There is in fact no legal imputation of the positive product to the input suppliers (i.e., input suppliers do not in fact sell outputs) and no imputation of the negative product to the output demanders (i.e., customers do not in fact pay off production liabilities by purchasing inputs). Moving beyond the "deep" metaphors of neoclassical value theory to the "shallow" legal facts, the whole product (positive plus negative products) is in fact legally appropriated by *one legal party*, the party who stands between the input suppliers and output demanders, and who pays for all the inputs and sells all the outputs of production.

The simple legal fact that one legal party legally appropriates all the positive product (produced outputs) and legally bears all the negative product (input liabilities) is not really controversial—although neoclassical theory has learned to always redirect attention from that total asymmetry to the symmetrical "picture" of the distributive shares metaphor. Just as neoclassical theorists have learned never to repeat Wieser's simple observation that "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", so one has to go back to the pre-neoclassical period to find economists stating the simple legal fact that one party appropriates the whole product (i.e., bears 100% of the input liabilities and owns 100% of the product). For instance, James Mill states the basic facts with some force.

The owner of the slave purchases, at once, the whole of the labour, which the man can ever perform: he, who pays wages, purchases only so much of a man's labour as he can perform in a day, or any other stipulated time. 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.

[James Mill 1826, Chapter I, section II]

The property-theoretic description of production changes the focus of normative questions from the value-theoretic "distributive shares" questions to the basic property-theoretic question of

"Who is to be the whole product appropriator?" or "Who is to be the firm?", e.g., Capital, Labor, or the State.¹²

Since all who work in a production opportunity ("Labor") are de facto responsible for using up the inputs K to produce the outputs Q, i.e., for producing *Labor's product* (Q,-K,0), but only legally appropriate (0,0,L) in the employment system, Labor is de facto responsible for but does not appropriate the difference which is the whole product: ¹³ (Q,-K,0) - (0,0,L) = (Q,-K,-L).

Table 2

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

Responsibility Principle Violation under the Employment System

The legal party who has the contractual role of being the last buyer of all the inputs consumed in production would "swallow" the input liabilities -K and -L and thus would have the legally defensible claim on the outputs Q. In this manner, the employer would legally appropriate the whole product (Q,-K,-L). Since Labor was de facto responsible for the whole product, the responsibility principle was violated by the employer's appropriation of the whole product.

Since "Not-Locke implies Not-Hume," the violation of the responsibility principle in production in the employment or wage-labor system means that there must have been some violation of the no-externality or no-breach conditions in the sphere of exchange.

It is the no-breach condition that is violated by the employment contract. The basic fact that connects the contractual mechanism and the imputation mechanism is that *things* (as opposed to persons) can, in fact, be transferred from the factual possession and control of one party to another. Person A might rent a van (i.e., sell some of the van's services) to another person B. To fulfill the contract, the van would be factually transferred from A to B so that B can then use the

¹² Note that the question is *not* whether or not the positive product is to be imputed to that same party who appropriates the negative product; of course, *one* party appropriates the whole product (positive + negative product). The question is: who is to be that one party?

¹³ This provides the modern reconstruction of the old slogan: "Labour's claim to the whole product" put forward by the "band" of classical laborists such as Thomas Hodgskin and William Thompson. For the history of that school, see Anton Menger [1899] and particularly the Introduction by Foxwell [1899] as well as Lowenthal [1972] and Stark [1943]. Although the classical laborists would hardly expect some other party to pay the costs of production in a cooperative or labor-managed enterprise, they were not clear that the negative product (0, -K, -L) must always be included along with the positive product (Q,0,0) in making "Labour's claim to the whole product" (Q, -K, -L).

van (i.e., use up the van services) independently of A and be solely de facto responsible for the results obtained by using up the services of the van. As per the Fundamental Theorem, the contractual mechanism functions correctly when legal title to those services stays coordinated with the factual possession and use of the services. Then the legal imputation of the Invisible Judge to B for using up the van's services according to the last-buyer contract will be in accordance with de facto responsibility of B for the use of those services.

But this mechanism breaks down when person A (an "employee") tries to rent his or her self (i.e., sells his or her own services) to person B (the "employer").¹⁴ There is no voluntary action to fulfill an employment contract so that the employer can "employ" the employee and be solely de facto responsible for the "employment" of those services. What actually happens to "fulfill" the employment contract is that the employee agrees to co-operate with the employer in a certain activity. But unlike the van case, there is no voluntary transfer of de facto responsibility. Both the employee and the working employer are jointly de facto responsible for the fruits of their joint activity. The employee's responsible agency is inherently inalienable [Ellerman 2010b, 2015].

When the legal authorities accept (NB: "accept" in the *laissez faire* sense of taking no action) the de facto responsible co-operation of the employee as "fulfilling" the labor contract for the sale of labor services from the employee to the employer, then the Invisible Judge mistakenly imputes all the legal responsibility to the employer for the using up of the "input" labor services and for the other positive and negative fruits of their joint activity.

The legal authorities take no action to declare that the employees are "non-responsible" or to declare that the employer is solely de facto responsible for the positive and negative product of the joint activity. And that is just the point; an Invisible Hand or laissez-faire mechanism works by non-action. The mis-imputation of the Invisible Judge is based simply on the legal authorities not rejecting the employees' responsible co-operation as "fulfilling" the legal transfer so that there *seems* to be no breach to give grounds for intervention.

¹⁴ This may seem an unusual use of "rent" but "hiring a car" in the U.K. and "renting a car" in the U.S. are the same thing. As Paul Samuelson explains:

One can even say that wages are the rentals paid for the use of a man's personal services for a day or a week or a year. This may seem a strange use of terms, but on second thought, one recognizes that every agreement to hire labor is really for some limited period of time. By outright purchase, you might avoid ever renting any kind of land. But in our society, labor is one of the few productive factors that cannot legally be bought outright. Labor can only be rented, and the wage rate is really a rental. [1976, p. 569]

The underlying facts of workers' de facto responsibility are not controversial. This is easily seen by considering the rather different reaction of the legal authorities when the employer and employee, or "master and servant" in the old-speak of agency law, co-operate together in the commission of a crime. The Invisible Judge becomes a visible judge; the servant in work becomes the partner 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, 612]

When the venture being "jointly carried out" is non-criminous, the workers do not suddenly become non-persons, robots, or automatons being "employed" by the "employer." This is why the de facto responsibility of the employees' human actions is another topic that neoclassical theory cannot even talk about (save Wieser blurting out the simple facts). The facts about de facto responsible co-operation remain the same.¹⁵ It is the reaction of the legal system that changes when no legal wrong is recognized. Then legal authorities accept the employees' co-responsible cooperation as "fulfilling" the human rental contract, the Invisible Judge rules "let it be" and the contractual pattern imputes the whole product to the employer.

Instead of the factual transfer of labor services between parties, there is only de facto responsible co-operation. In terms of the contractual machinery, the employment contract is impossible to actually fulfill with the transfer of responsible actions from the seller (employee) to the buyer (employer). Thus the employment contract systematically violates the no-breach requirement. In what might be taken as a fraud on an institutional scale, "an institutional robbery—a legally established violation of the principle on which property is supposed to rest" [Clark 1899, 9] or as Proudhon put it simply "property is theft," the responsible co-operation of the "employees" is taken by the legal authorities as "fulfilling" (i.e., not breaching) the labor contract which allows the employer to take the contractual position of the whole product

¹⁵ Of course, a contract involving a crime is null and void. But the worker is not de facto responsible for the crime because he 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).

appropriator—all of which is hardly the "very Eden of the innate rights of man" [Marx]. That is *the basic trick* in the employment system of renting human beings.

Since the contract for renting people is impossible to fulfill, it is invalid for the same reasons that a voluntary self-sale contract (to essentially take on the full-time role of a non-responsible instrument) is already recognized as being invalid.¹⁶

Clearly this property-theoretic analysis of the employment contract has *nothing*—repeat *nothing*—to do with the size of the wage payment (which was never used in the analysis) so it is totally independent of the superficial exploitation theories of the neoclassical variety (paying less than the value of the marginal productivity of labor) or the Marxian variety (extracting more labor time than is embodied in the wages). The whole employment system of renting persons is a *property* system based on "a legally established violation of the principle on which property is supposed to rest" that is established by virtue of the employment contract. It takes a property theory to critique a property system, not a value theory which at best may show that "wages are too damn low"—but which would thus not even be a critique of wage labor *per se*.

If the modest proposal were accepted that the contract for the renting of human beings be recognized as invalid and be abolished, then production could only be organized on the basis of the people working in production (jointly) hiring or already owning the capital and other inputs they use in production. The market mechanism of appropriation would *then* correctly impute the legal responsibility to the de facto responsible party. The conservative thinker, Lord Eustace Percy, singled out that de facto responsible party in 1944:

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, 38; quoted in Goyder 1961, 57]

¹⁶ "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." [Samuelson 1976, 52 (his italics)]

The legal members of the firm as a legal party would then be the people working in the firm. Such a firm is a *democratic firm* and the private property market economy of such firms is an *economic democracy*.¹⁷

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¹⁷ See, for example, Dahl 1985. The best examples today are probably the Mondragón industrial cooperatives in the Basque region of Spain [see Oakeshott 1978; Ellerman 1984; Whyte and Whyte 1991; Cheney 1999; or Lutz 1999].

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