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On the Genealogy of Economic Reason

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ABSTRACT OF THE DISSERTATION

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This dissertation is a contribution to a materialist history of economic thought. Rather than present the history of economic ideas as the discovery of an abstract and eternal economic reason, it demonstrates how economic reason emerged from the particular contradictions in the production and reproduction of societies. The aim is to interrogate the concept of the economic itself by situating it in specific social, material, and political settings. How can we explain the metamorphoses of political economy in the modern period? Why was this intellectual tradition replaced by a science representing the economic in

quantitative and mathematical terms? Why did quantification become so central to the functioning of the modern state in the first place? How did a certain economic change come to appear historically necessary, in the sense of inevitable? The basis for a radical reinterpretation: the economic was associated with the use of quantification as a way to express relations of necessity about economic matters. The dissertation juxtaposes political, scholarly, and administrative sources, drawing mainly from cases in Europe and the United States of America from 1789 to 1975. What emerges is a genealogy of a new kind of way for thinking about, and administering, the social and natural world. Economists produced the now-familiar representations of economic life not because of an inherently scientific drive towards modeling or idealization, but as tools that worked to tame subjectivity in policy-making. These representations were materialized—given real efficacy—through the paper technologies, calculations, and institutions of the modern state, and they provided the conditions of possibility for the categories of modern political reason. The philosopher Michel Foucault famously argued that the organizing principle of modern "liberal" society was expressed by Bentham's panopticon. Developing a critical and systematic counterpoise to this view, this dissertation proposes the figure of the "aeolian harp" as a more pertinent metaphor for the politics of capitalist liberalism.

The dissertation of Hippolyte Albert Goux is approved.

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CHAPTER 1:

INTRODUCTION

To assert that there is no such thing as a market is neither controversial, nor especially original. So long as market is taken to meet the stringent conditions of perfect competition, most orthodox economists have had few illusions about this. More to the point, the concept of market is so invested with a surplus of ethical and political significance that it can be said to contain as much imaginary as real. This banal observation invites a naïve question, which has surprisingly not yet attracted enough attention: If there is no such thing as a market, how are we to explain belief in this entity? A standard answer to this question has been to appeal to the scientific virtues of idealization and abstraction. Economists produce market models to approximate the workings of real exchange, in order to isolate regularities. According to this explanation, scientists doing what they naturally do produced the science of economy, essentially by applying the methods of science to a given part of the world. I claim this explanation essentially misses the social significance of economic reason—and history can posit proper understanding.

A certain economic worldview now in wide currency would have it that certain economic laws organize the world of human activity. Economics has gradually discovered these laws. Does such an ontological picture hold water? In a now classic work, the philosopher of science Nancy Cartwright showed that the laws of physics do not state the facts. For Cartwright, the equations of physicist's theories should not be considered expressions of deeper more fundamental laws at work in the physical world, but rather as representations which must be connected to phenomena through a process of approximation involving multiple and often inconsistent intermediary calculations. Having superseded the idea that economics produce models merely because they are "a proper science," we are still left with the initial question: why model? Why represent a sector of human activity as governed by a particular kind of necessity?

My answer is that market models—or more rigorously, the practices of the market imaginary, as I term them—are an answer to a political problem. Rational economic man is a spectral abstraction not so much of the trading room floor, but more so the administrative offices of the capitalism state. Economics produces imaginary worlds not because of an inherently scientific drive towards modeling or idealization, but as social representations which function to tame subjectivity in policy-making in favor of a kind of economic objectivity.

This answer owes a great deal to Ted Porter's research on the history of social numbers; its insights put us on the track to understand the most peculiar human sciences: those of the economic realm. Porter overturned the generally accepted idea that the use of the language of numbers in political life was an emulation of scientific practice. To the contrary, scientific communities—in the Kuhnian sense: small, esoteric—can avoid the thinning of their activity to quantitative reduction. In fact—as Cartwright shows—they must do so in practice, and without endangering their claims to knowledge. At the risk of platitude: scientific knowledge is thus a complex activity, the production of cognitive selves anything but the application of a procedural objectivity. It is for this reason, among others, that something like a problem of scientific expertise even exists, to the extent that science must remain incarnated, judgment irreducible to a procedure. Instead, the reliance on numbers as social and political tools takes root in situations where decisions must appear as dissociated from persons. Then, numbers can exact a discipline or provide a medium for controlling or monitoring dispersed actors.

These insights about quantification and science hold the key to understanding modern representations of the economy and the modern concept of "the economic" itself. Put simply, economics can be understood as developing as a set of procedures to make decisions about economic matters of political concern.

The modern idea of the economic was coeval, historically, with the use of quantification as a way to express *relations of necessity* about economic matters. Numbers are so useful as social tools of discipline—administrative and political—because they allow a certain view of the world to be implemented. It is in this sense; they produce a kind of necessity.

Cartwright's insight was part of a wider turn towards practice in the philosophy of science. The techniques used by physicists to get a theory to explain a specific given phenomena are equally important as theories taken abstractly. For their part, historians of science have now produced a remarkable sequence of studies on the practices of the natural science. Yet the models of economics and of physics are not the same. For knowledge about the economy, things are different if only because it is not a practice of scientists working in the relatively cloistered spaces of the laboratory. A genuinely externalist history of economic science cannot stop at studying the practices of economists, it must determine the social conditions by which such a science even becomes possible.

Modern consciousness is haunted by twin figures of the economic. According to the first, there exists an autonomous sphere of production and exchange ruled by seemingly trans-historical laws of supply and demand. For the second, the economic is a general propensity, inhabiting each human subject as a

proper rationality, even if waiting to be uncovered under the right circumstances. This work attempts an account of the practices that have produced these figures of consciousness. Such a history will contribute both to the history of economic science and understanding the genesis and structure of the capitalist state.

It is a remarkable that only capitalist societies have the perception of an independent economic sphere as a fact of their constitutive ontology. This fact would seem to inform the naturalization of economy, exemplified by the two figures of economism defined above. The history of strictly economic facts is till poorly understood, if only because studies on the question have tended to either take for granted the existence, limits and determinations of this sphere, or alternatively because the history of economy is understood as the history of an idea. Intellectual histories of political economy have generally only a distant link to the real social transformations that made possible such new conceptualizations. Many critics of economic reason write as if economic ideas were first invented, and only then put into practice. The two figures of economism would thus be nothing more than *intellectual* errors.

Economism in its varied forms is characterized by a naturalization of either the economy as a social sphere or economic activity as a kind of action. Historians of economics have with great difficulty, and only rarely, escaped an attitude by which the writings of past authors are telescoped to today's most

widely accepted economic theories. Under such an approach, the bounds of the science are determined, as historical object of study, by the content of modern economic science. This shortcoming in the history of economic science finds a symmetrical error by economic history whenever it has used today's widely accepted economic theories as basis for explaining historical processes in the past. With this approach, economic rationality is naturalized and postulated as an unmediated economic force in shaping social organizations, or shaping history. This is exemplified a certain economic anthropology which evaluated the customs of non-capitalist societies by the standards of a maximizing individual. Similarly, a certain economic sociology explains appearance of what it calls economic "institutions" as various stable strategies to reduced transaction cost. Such explanations might appear to denaturalize the market, but only by naturalizing economic behavior.

On the other hand, the nature of economy has been just as shrouded by various new idealisms. One thesis that has become surprisingly popular is that the economy is a discursive object, born only in the late 1920s—a discursive object which requires no extra-discursive origins. Similarly, economic science is now sometimes described in a specialist and technical literature as "performative." The idea is that economic science shapes reality so that reality looks more like economic theories.

Traditional Marxism has hardly fared better at explaining the peculiar existence of the economic sphere in capitalist societies. Marxist philosophy tended to reify the concept of base and superstructure, relegating economic activity to the base, while treating institutions as growing out organically from these. Given such a reading of Marx, it is not surprising that a significant number of self-style Marxists fell into economism—as if Marx had written a new political economy rather than a *critique* of political economy. Under such a view, it follows that economic science would be considered as "ideological" in a crude sense: a false representation sitting upon real practices, rather than a constitutive part of social reality. One aim of the work below is to build on the revitalized readings of Marx that followed the widespread publication and diffusion of the notebook called the *Grundrisse*, in the early 1970s. The upshot was that capitalism should not be understood as fundamentally characterized by market exchange or even by private ownership of means of production. Rather, it is a historically specific form of mediation where individuals in a society relate to each other primarily through the activity of labor, and through the exchange of labor time.

The aim of this work is to grasp the role of economic science in the production of the abstraction called economy, putatively the purview of an economic science. The thesis of this study is that the development of economic science can be understood

Hence, I consider the practices of economic knowing to be acting like one of the mental components of the relations of production; that is, of those social relations which organize and justify access to the forces of production and to the use values produced. The economic sphere must instead be understood as a real abstraction. That is to say, a social practice with both subjective and objective reality.

The aim of the work below is to study economic science as a kind of social technology. The market—and more generally the economic—can be understood as an administrative representation growing out of administrative practices. This practice itself was made possible and necessary by the extension of capitalist relations. Such a history of economics and economy avoids a different yet equally unsatisfactory explanation about the durability of the market ideal: namely, the answer satisfied with considering economic theories as mere ideological fantasies, speculatively-produced ideological productions with no connection to reality. While economy theories always have political implications, their genesis, function, and imbrication within capitalist social formations is the object of this study.

A word is needed about the unorthodox articulation of this research: It is not fundamentally motivated by a particular geographical boundary or temporality, although it is restricted to the place and time of the development of capitalist economy. Nor does it focus on any kind of entity easily found in a

historian's common ontological catalogue. Rather, the organizing principle is to track the production of the economy as an administrative fiction growing out of administrative practice, and the political constraints of that practice. The point is to show how the development of this practice itself is made possible and necessary by the extension of capitalist relations. It follows that in a sense this is a history of the capitalist state, which must be considered not as a monolithic "bourgeois" state but as a site which expresses and attempts to control the contradictions produced by the extension of capitalist relations throughout the social formation, of the "value-form" as increasingly dominant social mediation.

Chapter 2:

Quantification and the Value-Form

Most mysterious of modern ontological items, the market comes to be invoked in popular and semi-scholarly discourse as enjoying both autonomy and a kind of agency, in which case it has the unfortunate effect of masking, even if unintentionally, the confrontation of interests at the heart of modern societies. To abandon the great majority of economic and social phenomena to the conceptual arena market is to paralyze critique, to shut the sphere of possible action, to curtail historical understanding.

No less a social theorist than Jurgen Habermas solidifies the modern bifurcation, systematizing the economistic imaginary in ways that continue to enthrall liberal theorists. For Habermas, the market is a "block of more or less norm-free sociality."[1] In his terms, the history of modernity is told as the "colonization" of "the life-world"—where the life-world is the sphere of lived subjective and inter-subjective experience, as opposed to "sub-systems" ruled by

[1] Habermas, Jürgen. 1984. *The theory of communicative action*. 2 vols. Boston: Beacon Press.

"rationality," which is to say end-oriented action. In a telling equation, Habermas throughout his work uses interchangeably the term "market" with the terms "capitalist economy" and "the economy," conflating these into the same sphere, and seemingly holding the profit-motive as synonymous. The political, the sphere of "communicative action," stands apart from "the economy," and must act upon the latter as it can, limiting the destructive effects of colonization. In this way, Weber's notion of disenchantement of the world by rational systems, rationalization, is also supposed to replace class conflict over the production of value with the colonization of the life-world by the logic of profit.

Without on the one hand denying that bureaucratic systems, with their rule-bound decision-making, are indeed peculiar features of modern societies, on the other it makes no sense to define the economic, conceived here particularly as a capitalist "market" economy, as that sphere of sociality which is the paragon of rational activity. We will find that this view is precisely a feat of political imagination—the possibility of conceiving economy as distinct system is itself a form of normative sociality, and depends on other norms. Here Habermas appears as a magnifying glass to reveal a misinterpretation occupying entire intellectual traditions. Habermas constructed his theory on the autopoeitic sub-systems of Niklas Luhman and the social systems theory of Talcott Parsons.

For the latter, perhaps the most influential American sociologist of the 20th century, the challenge was to define the relation between the economic and the social in terms that would maintain the specificity of the economic. Saving the economic nature of the social meant for Parson, and later for Habermas, treating this sphere in a way consistent with the marginalist view of the economy, which conceived of the economy in terms of individuals seeking to maximize their want-satisfaction given scarce means. Such an intellectual commitment is no surprise given the popularity of the marginalist theorizing of Wilfredo Pareto in the American academy, and his extensive use by Parsons.[2]

At the time, proponents of economic anthropology noted that under the formalism of Parsons, the "economy as a social process is confounded or intentionally identified with the subject matter of economics as a discipline" such that society for Parsons "becomes little more than...metaphorical restatements, of the market economy's price-making process."[3] Sociological formalism thus projects the notion of market as field of rational behavior on the human activities of our societies, and then attempts to use the categories of the modern capitalist mode of production to understand non-capitalist societies. This double error

[2] Isaac, Joel. 2012. *Working Knowledge: making the human sciences from Parsons to Kuhn*. Cambridge, Mass.: Harvard University Press.
[3] Terence K. Hopkins, "Sociology and the substantive view of the economy" in Polanyi, Karl. 1957. *Trade and market in the early empires; economies in history and theory*. Glencoe, Ill.: Free Press. p. 274.

explains why the behavior of people in so-called primitive societies has so often been described as irrational, and the rise of modern economic institutions is seen as the unfolding of increased rationality: entirely consistent with the view of neoclassical economics which denies the social nature of production and the historicity of the institutions in which it exists, focusing exclusively on the circulation of goods and services. The market, in a sinister tautology perpetrated by social theorist against themselves—but to be found at least as early as the physiocrats—appears as the most rational organization because it happened to be that site which made human activity present in such a way as to be schematized as rational action.

Abandon hope, from this point of view, of forming a substantive rather than formal concept of the economic as object of study—that is, of forming exactly the concept of interest to the historian. Rational action is neither enough to defined the realm of the economic, nor is it present only in market-based exchange, or even just economic planning. As the anthropologist Maurice Godelier argues, "everything that we know of ethnology and history shows that, in all societies, individuals and groups have tried to maximize certain objectives, the content and order of priority of which expressed the dominance of certain social relations (kinship, religion) as compared with others, and were rooted in

the very structure of each type of society."[4] The prima facie irrational foraging behavior of the !Kung Bushman, for instance, reveals in truth what can be called an alternative "economic rationality": they act in a way that satisfies their own hierarchy of values based on their "complex representation" of resources.[5]

With this in mind, it becomes impossible to identify the spread of rationality with the capitalist market economy. To say, however, that end-directed activity, and even maximizing behavior, appears to be a general characteristic of human behavior does not imply that individualism can be the foundation for understanding.[6] Such a proposition alone tells us little unless the substrate of the activity is specified. An understanding of societies means identifying the cultural and social structures, to reveal their workings, and their historicity. "Analyzing the reason why one structure rather than another," Godelier continues, "should have been accorded this central importance means working towards the discovery of a 'social rationality' of which...economic rationality is only one aspect."[7]

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[4] Godelier, Maurice. 1972. *Rationality and irrationality in economics*. London. NLB. p.21.
[5] Richard Lee. 1979. The !Kung San: Men, Women and Work in a Foraging Society. Cambridge and New York: Cambridge University Press.
[6] Even Jon Elser with his "social mechanisms" has difficulty avoiding the reefs sketched above.
[7] Godelier, *Rationality and Irrationality in economics*. p.21.

Artificially separating the market as an independent sphere of activity, and worse still conflating it with the capitalist mode of production renders impossible an understanding of the role of the technical in the form of quantification and calculation. The studying the relationship between the social and the economic is, under the view I am criticizing, synonymous with revealing the factors "interfering" with the economy, disrupting the play of economic laws. The use of calculation, of objective representation using numerical quantification such as bookkeeping, presents no mystery since the freeing of the economy from traditional impediments is viewed as the spread of rationality. The socialist thinker Oscar Lange, as well, in his famous essays on the "Soviet calculation controversy" equates the historical development of capitalism with the historical development of rational action. The working of the modern economy, and the relationship it entertains with the rest of the social, becomes more, not less mysterious when we are freed from this view. The space for wonder has opened, the search for answers may begin.

I argue that we can gain a new understanding of the role of numerical quantification if we distinguish as a working hypothesis between the use of quantification as a force of production, and quantification as it comes about to function in the relations of productions. This means suspending for a moment the widespread view that there is a uniform, singular "rationalization" which has

spread throughout society, in the Habermasian mode. Without entering the debate about causal primacy, I nonetheless follow the work of economic anthropologists in saying that we consistently find in societies certain relations that determine the distribution of the use values produced by the society—these are the relations of production. Modifying Karl Polanyi's thesis that the project of economic liberalism was for markets to be "disembedded," it is possible to show that there was a displacement from certain social relations (e.g. the "moral economy" of the marketplace) as the market in fact became embedded, was produced, by the development of technical systems, of statistical systems, an avalanche of numbers. But the mediation by engineers and economists is itself a moral economy. Thus, quantification appears as an institution of value insofar as it determines what is worth, and who gets what. It takes the form of a social practice of objectivity, expressing a certain idea of justice.

Trade, Market, and Marketplace

Central to Marx's analysis, of course, is the role of commodity production and exchange using a general equivalent, money. Exchange on a marketplace has a certain role in the capitalist mode of production but, and this is important, it is not a sufficient condition. Here we are at the crux of the matter: When a good is

turned into money in exchange, the value is realized, along with the labor necessary to produce it—or to be precise, turning this labor into a monetary quantity which expresses value. This is a capitalist activity only insofar as the productive activity behind it was organized by social relations where individuals "sold" their labor-power to an owner of capital. It is clear that the attribution of a price to a commodity does not by itself make it a capitalist good, it only marks monetary exchange—almost a truism since price is the numerical expression of the amount of money. If goods did not have the ability to make this leap in the marketplace, salto mortal as Marx calls it, the owner of capital would not be able to fructify the means of production in which he is in a relation of lucrative property. So exchange is the means by which economic value is turned to monetary value, the goods are a portmanteau of use value and exchange value, but exchange value finds an expression as price.

So the exchange of goods itself does not signal the existence of a market, nor does the presence of a price. This point was made by the substantivist school of economic anthropology at Columbia University led by Karl Polanyi. Preferring economic anthropology to the formalism o f economists who projected onto other societies the economic categories of our own, they sought to recover the thickness of economic phenomena. The substantivists conceived of the economic

more broadly as those aspects of societies which insure the material basis of its reproduction.

As already suggested, the consequences of such formalism was the inability to accurately study societies where the economic does not appear as a distinct institution, where the economic seems not to exist. Polanyi warned historians against falling into an "inverted perspective," when they are "induced" into seeing "strikingly 'modern' phenomena in antiquity where in fact they were faced by typically primitive or archaic ones."[8] Projecting the existence, and so the mechanisms, of a "price-making" market onto all instance of trade would be just such an error. Polanyi shows, for instance, that in Hammurabi's time, Babylonian trading posts engaged in a "nonmarket" trade, where "prices took the form of equivalences established by authority of custom, state, or proclamation."[9] The trader's income was independent of prices at which he sold or bought.

Rosemary Arnold studied how the port of Whydah on the Guinean coast appears at first glance to have been, from the 17th to the 18th century, a center of "market" exchange when in reality it was an "administered trade." In this port city of the Dahomey kingdom, trade and market were physically and conceptually separated. Trade was for the state and aristocracy, its "equivalences

[8] Polanyi, Karl. 1957. *Trade and market in the early empires; economies in history and theory*. Glencoe, Ill.,: Free Press. p.15.
[9] Ibid.pg.20

were fixed by law and administered by the king's official residents at Whydah."[10] The price of items on the marketplace was set by enforced conventions, much the same as the French marketplace of the 18th century, which was often patrolled by royal police to enforce limits on bargaining, location, and time at which items could be sold.[11] But the normative sociality of the marketplace was not just enforced by the authority of the state. As E.P. Thompson showed in his classical study of 18th century English peasant revolts, acute shortages of food cannot fully explain peasant uprisings. Food riots were outraged reactions to violations of "moral assumptions" about matters of exchange. Hoarding grain, selling above or below the appropriate price, bargaining, where violations of "social norms and obligations of the proper economic functions of several parties within the community."[12]

Here we are far from the somewhat sterile debates on the presence of the "just price" in the medieval marketplace. This is not to deny that persons of the state sometimes made use of the juridical concepts of the scholastic just price to motivate and justify actions. But the opposition is not between a price forming

[10] Rosemary Arnold. In Polanyi, Karl. 1957. *Trade and market in the early empires; economies in history and theory*. Glencoe, Ill.,: Free Press. p.168
[11] Miller, Judith A. Mastering the Market : The State and the Grain Trade in Northern France, 1700-1860. Cambridge University Press, 1999.
[12] Thompson, E.P. (1971). "The Moral Economy of the English Crowd in the Eighteenth Century." Past & Present No. 50, pp. 76-136.

freely and one that is imposed. The parameters of exchange in a marketplace, not just the price, can be the object of convention, a question of mores. In the same way that one must have a shared mental representation of what is a marriage in order to be married, the confrontation of two people (the classical economist's "robinsonade") is not enough to make an exchange lived as fair, without knowing the parameters of exchange.[13] From our point of view, it is just as mysterious to speak of a market where prices form freely, freedom itself being a particular historical normative concept. The difficulties behind Polanyi's concept of a "disembedded" market become clear.

Now consider George Sturt's memories of life in a late 19th century Sussex wheelright's shop:

> I priced the work to my customers by my father's and my grandfather's charges, making schedules of figures from an old ledger...I doubt if there was a tradesman in the district—I am sure there was no wheelwright—who really knew what his output cost, or what his profits were, or if he was making money or losing it on any particular job.[14]

[13] It must be noted that the examples given above leave out the cases where this is even truer, and also more complex, in the societies where exchange is inseparable from symbolic meanings.

[14] Sturt, George. 1993. *The wheelwright's shop*. Canto ed. Cambridge ; New York, NY, USA: Cambridge University Press. pg.197.

Testimony in accord with the Weberian claim endorsed by Polanyi, that "for lack of a costing basis Western Capitalism would not have been possible but for the medieval network of statuated and regulated prices, customary rents...a legacy of gild and manor."[15] That prices could depend on tradition is in itself no great surprise to historians. But it does illustrate the importance of collective representations in exchange, and these examples contrast with the notion of self-regulating market often identified with the project of economic liberalism, at least insofar as it undermines one of its cardinal assumptions, the flexibility of prices.

Research by the anthropologists lead by Polanyi culminated with the chapter by Walter Neal, who contrasted a market and a marketplace. Following the substantivist approach to the economy, Neale does not want to deny that a communal and socially recognized "meeting place for the transfer of one kind of goods from one group to another" could be called a marketplace even if it does not involve a price—for instance, "the fish-yams exchange of the Trobriand Islanders" and the "meeting places of the Kula Ring" of these same islanders. Likewise, the medieval marketplace is a marketplace because it involves a price but is not a "self-regulating market system."

A market can take the form of a marketplace, but as Neal sees it, "a market need have no physical location." For example, "the Chicago Board of

[15] Pg. 269 Polanyi. *Trade in Early Empires*. "The Economy as Instituted Process."

Trade provides room for transactions in grain," yet "the international money market is a world-wide network of knowledge and communication between many centers and individuals."[16] In this case, the market appears most clearly as a technical feat, creating a common informational sphere to permit exchange. More doubtful is Neale's claim that a self-regulating market system "can be said to have existed in a workable approximation to the ideal type during the latter part of the nineteenth and the early part of the twentieth centuries."[17] The criterion for a self-regulated market, yet alone for a whole system to be self-regulating, are remarkably high because of the requirements they place on the actor's availability of information, on their motivations, and the shape of the social space. In The Great Transformation, Polanyi himself defined the self-regulating market as the aim of economic liberalism. But an impossible one since the state would have to intervene to create and maintain markets, and more fatal still, the three "fictitious commodities" of land, labor, and money would by nature resist integration into a self-regulating system.

The Mode of Production and the Market

[16] pg. 366 Neale. *Trade in Early Empires*. The emphasis is mine.
[17] Ibid. pg. 364. *Trade in Early Empires*. "The Market in Theory and History"

Mode of production as a notion is intended to be thick, not reductive, and is composed of two others: the mode of production is a nesting of forces of production and relations of production. The forces of production are the tools, techniques, practices, materials used to make use values, while the relations of production are those social and technical relations determining the distribution of use values. A mode of production comes through the imbrication of the relations of production with the productive forces, however the two cannot be conceived of independently. As such, it extends to much more than the sphere of the economic in the modern sense. For instance, historically we find agricultural activity within a feudal mode of production, or within a capitalist society. Marx wanted to capture the separation existing within modern societies between ownership of the productive tools at a factory, and the way the products of labor are then distributed.

The idea, then, is chiefly intended to capture the way members of a society are put to work, the relations which determine the way the tools necessary for work are available in a society. The relation of the peasant to the lord characterizes feudalism, either through the personal relationships of the manor, or sometimes through a kind of contractual obligation when it was settled as payments in kind. The social relations in place result in an appropriation of value. Within a capitalist mode of production, some are constrained to work by

virtue of the fact that they do not own the means to produce, but are in principle free of their persons, and so work in a relation of salaried labor.

In societies considered modern, these relations take the form of institutions, often clearly differentiated. Still, these analytical distinctions pick out functions, not necessarily institutions. This was particularly emphasized by Maurice Godelier, who argues that the notion of relation of production can be of use for understanding pre-capitalist societies. The problem of these categories appeared especially daunting for what were termed classless societies. For Godelier, it is mistaken to term these "kin-based" societies. Godelier observes first that humans, unlike other animals, make their the world they inhabit, reproduce the social, sustain themselves by a constant confrontation with nature, a transformation of nature which produces use values. Second, he argues, following Marx, that all societies have certain relations organizing how the use values, the concrete labor of its members, are distributed. But these functions can be carried by kinship, religion, politics to cite the three cases studied by him—and these functions are central insofar as they bear the function of relation of production. For our purposes, Godelier's innovation is of interest because it uses an empirical Marxism to break with the layer-cake model of infrastructure and superstructure which had developed from a kind of "vulgar" Marxism and the lofty theorizing of Althusser. Accordingly,

> The distinction between infrastructure and superstructure is neither a distinction of level or instances, or a distinction between institutions, even if it may present itself that way in certain cases. It is, in principle, a distinction of functions...A society has no top and bottom, and is not a system of superposed layers. It is a system of relations between humans, hierarchical only by the nature of their functions, functions which determine the respective weight of each of their activities on the reproduction of society." [18]

This allows us to see, first, that the notion of mode of production is precisely the opposite of an economistic determinism in that it seeks to integrate the whole of social organization, of social relations, to show their participation in the process of material reproduction, rather than postulating a priori the causal primacy of material conditions.[19]

Second, it becomes easier to see how shared mental representations, too, are constitutive of a mode of production. If we accept that the ideational is also constitutive of the real it becomes possible to solve some of the problems associated with the opposition between theory and practice, between ideology and reality. For the matter at hand, numerical representation is not a false representation sitting upon the real practices. If there are representations which

[18] Godelier, Maurice. 1984. *L'idéel et le matériel : pensée, économies, sociétés*. Paris: Fayard.
[19] Harribey, J-M. 2009. "La Luttes des classes hors sol?" Contretemps. n. 1.

"mask" exploitation, it is not because they are merely phantasmagorial, they are constitutive of and participate as conditions in the reproduction of the relations themselves, they are used by people to recreate their material and social relations. The belief that the Inca, as sons of the sun, were vital to the "invisible forces that control the reproduction of the universe" functioned as real insofar as it organized and justified the demands made on subordinate groups within the empire. Thus, even domination could "be presented as an exchange and an exchange of services."[20]

The capitalist mode of production is characterized by lucrative property of the tools of production,[21] exploitation of a labor force on the basis of a labor market composed of laborers who are free of their persons, and the use of a service and commodity market which permits the tools of production and money to be used as capital, that is, to capture surplus value.[22] We can then define non-tautologically capitalism as those societies in which the capitalist mode of

[20] M. Godelier. *L'Ideel et le materiel*. pg.210.
[21] Godelier, Maurice. 1991. *Transitions et subordinations au capitalisme*. Paris: Editions de la Maison des sciences de l'homme. pg.25
[22] Bernard Friot develops the concept of "lucrative property" in order to distinguish it from use-property. An artisan own his tool and uses it in the process of making, or on the other hand, and artisan rents out his tool to be used by another. The latter is a case of lucrative property, but an even more paradigmatic example would be a stock holder who owns "part" of a company, and receives dividends, a levy on the added value produced by the company.

production dominates, in the sense that it is the predominant way by which the society answers its needs and so continues to create society.

Already this schema appears to highlight this institution called market, a concept that developed by metonymy of the marketplace, as I show in chapters 4 and 5. The typological definition sketched above should not blind us to the historicity of the idea of market, confusing its expression in orthodox economics with the historical reality of exchange. The rise of a putative self-regulating market system does not explain, among other facts, the so-called primitive accumulation—the material inequality which, when combined with juridical equality in principle yields the social relations at the basis of capitalism. The confrontation resulting from juridical and political equality coupled with material inequality wears the mantel of market, but if the latter is indeed the real site of social validation, it is also a charged imaginary, and comes to be as a normative ideality. Marx was well aware that the sphere of exchange was central to the "bourgeois" imaginary, that it was a political imaginary, and not just a sphere of exchange. For the 1867 publication of Capital he wrote, with characteristic irony:

> This sphere we are deserting, within whose boundaries the sale and purchase of labour-power goes on, is in fact a very Eden of the innate rights of man. There alone rule Freedom, Equality, Property, and Bentham. Freedom, because both buyer and seller of a commodity, say of labour power, are constrained only by

> their own free will. They contract, as free agents, and the agreement they come to is but the form in which they give legal expression to their common will. Equality, because each enters into relation with the other, as with a simple owner of commodities, and they exchange equivalent for equivalent. Property, because each disposes only what is his own. And Bentham, because each looks only to himself.[23]

For him, it was from this sphere that what he calls the "Free-Trader Vulgaris" took his concepts, rehearsing a well know criticism already sketched above. The labor market provides a special case of this imaginary. The story goes that worker and capitalist reach a kind of contract voluntarily and in a sphere where they are on equal footing. This account conceals the obvious asymmetry between the owner of capital and the one who owns only his person to secure livelihood. But the labor market is unique not just because it is at the center of the relations of the capitalist mode of production, but also because it posits a market for something that is not produced. In this sense labor is not a commodity, and we see easily why Polanyi termed labor a "fictitious commodity" along with land and money—more precisely, something which had been treated as a commodity in order to create a market for it.

[23] Capital, Vol 1. Part II, pg. 176.

Regarding the transition from feudalism to capitalism, a common view holds that what took place was the expansion of a labor market. That the wage relation expanded is clear, but we might cast doubt on the formation of a genuine market for labor. William Reddy speaks of the rise of a "market culture" in 19th century France. He observes that while political economists spoke of society in market terms, it is much less clear that such markets existed. According to Reddy, textile workers in France failed to behave as would be expected in a labor market: "The sinking wage of the handloom weaver failed to redistribute his energies; the low wage of the child was dictated by expectation rather than demand" and "children displaced adults because each was failing to calculate how to maximize his monetary income."[24]

As in E.P. Thompson's study of the English handloom weavers, where concerns about status outweighed response to wages,[25] "for textile trade, the evidence is in fact overwhelming that nonmarket factors—family survival, political and patriarchal authority, control of the workplace, the desire for independence—continued to play a determining role."[26] In late 19th century France, the strike activity of the textile weavers, which had appeared "as

[24] Reddy, William M. 1984. *The rise of market culture : the textile trade and French society, 1750-1900*. Cambridge. pg.10
[25] E.P. Thompson. 1966. *The Making of the English working class*.
[26] Reddy, pg. 226

irrational and immature," was only so "if one assumes that open-market exchange was the defining element in the wage relationship." The wage relation might have played out between the weaver and the owner of the textile mills, but we are to conclude that neither a local nor certainly a national "market" was responsible for the level of wages. With the flow of data about the level of prices, carried by periodicals that something like a market began to emerge. In 1830 to 1840, average daily wages in the form of published reports began to circulate, which seems to have altered the behavior of workers.[27] The market as an ideality became sensible to the laborers as market data.

Whether the level of wages served as the main motivation is not ultimately the question. The circulation of numbers, along with changes in culture and behavior, and perhaps the concomitant rise of class-consciousness, may have produced something like a market. Sources make this difficult to ascertain, as Reddy concedes. Of interest to a structural account is the fictitious nature of the labor market, which opens two possibilities to explain the level of wages. The wage can be thought of on the one hand as corresponding to the basket of goods necessary for the material reproduction of the worker. On the other hand, the wage level arises from the "balance of power" within a society, of the quantity of surplus

[27] Reddy, pg.157

value the capitalist is constrained to cede.[28] Both the necessary basket of goods and the balance of power between classes are socially determined, and depend on particular historical conjunctures, and of course these change over time.

Both have been focal points of social conflict. In France, this involved the search, beginning at the dawn of the long19th century, for a "vital minimum," which enrolled inter alia the sciences of physiology, agronomy, and statistics. Dana Simmons illuminates this search for technical solutions to the tension inherent the wage relation. She also shows the duality of the vital minimum: If workers sometimes saw it as a defensive tool, others recognized in it a limit of moral and social existence, especially since it distinguished between needs and luxuries.[29] In the United States, the basket-of-goods approach, consistent with treating labor as a commodity, was systematized by the consumer price index. Thomas Stapleford shows how the development of statistical systems during the first world war led to the possibility of "a national, rationalized approach to industrial relations," governed by the cost-of-living measurements. [30]

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[28] Harribey, Jean-Marie. 2013. *La richesse, la valeur et l'inestimable fondements d'une critique socio-écologique de l'économie capitaliste*. [Paris]: Éd. les Liens qui libèrent.
[29] Simmons, Dana. 2015. *Vital minimum : need, science, and politics in modern France*. Chicago ; London: University of Chicago Press.
[30] Thomas Stapleford. 2009. *The Cost of Living in America: A Political History of Economic Statistics, 1880-2000*.

The Market as an "Institution" of Economic Value

In complex societies, the category of economic value arises since exchange uses the medium of money and the social relations determining value take the form of institutions—in large part they end up determining the distribution of use values. These we may call institutions of value. Only the presence of such institutions can explain why the same concrete activity is given economic value, rewarded monetarily, in some cases and not in others. If a parent drives children to school, they are not producing economic value, although their activity has use value (it is useful). If a hired caretaker drives the same children to school, economic value is being produced, along with the same utility. Similar is the common example that by marrying their housekeeper someone decreases gross domestic product, the measure of added value expressed monetarily. Much of the ritual handwringing over GDP as a poor indicator of wealth strangely ignores the institution of value at work in the foreground, which it merely reflects. In this context, we begin to see how deeply problematic are efforts to produce measures of GDP which give "fuller" account of national wealth and well-being.[31]

By all appearances, under the capitalist mode of production only labor producing surplus value for capital is considered to produce economic value. In

[31] Matthias Schmelzer. 2016. The Hegemony of Growth: The OECD and the Making of the Economic Growth Paradigm.

reality, other institutions of value have coexisted, or currently do coexist, within societies where the capitalist mode predominates. Public functionaries receive a monetary salary for labor productive of use values (education, security, etc.), but which is not productive of surplus value for capital. Individual producers who own their means of work produce goods for exchange, again without producing surplus value for capital. It is telling that the eradication of these independent producers is characteristic of the early history of capitalism in England, and later elsewhere.

We could consider other cases. Bernard Friot argues that the establishment of the general regime of social security by the CNR in France in 1946 was the creation of a new institution of value. While it gained control of only less than a third of the value produced by the French economy, Friot argues that the regime should be read not as intergenerational solidarity, or as a necessity willed by fordist capitalists as some historians have done, but as an institution of extended salary, built on the mutualisation of added value.[32] Friot invites us to consider that a salary could just as well be a political right tied to persons for life, recognizing their contribution to total value produced by society, so long as political institutions of social recognition existed, but that it is illusory

[32] Friot, Bernard. 1998. *Puissances du salariat emploi et protection sociale à la française*. Paris: la Dispute.

to think monetary remuneration is by necessity tied to a position rather than a person. Friot points out that such a disposition would not eliminate the market for goods and services.[33]

Marx himself had imagined that in the society to replace capitalism, the tools of counting, presumably numerical, would not disappear. Marx writes that "after the abolition of the capitalist mode of production, the social character of labor being maintained, the determination of value will prevail in the sense that it will be more essential than ever to measure labor time and the distribution of social labor between different groups and, finally, to keep count of all of this." In this regard, he was at odds with a lineage of utopian thinking that longed for a society of pure "transparency" of use values, without mediation. The temple of Thomas More's Utopia is empty and his society free of representations.

While the existence of the market form, especially for labor, is a necessary condition of capitalism, exchange on a marketplace is not by itself indication of a capitalist mode of production, that particular imbrication of social relations which developed a few centuries ago. Nonetheless, the rise of capitalism was concomitant with more generalized exchange using the monetary medium. Exchange would then take the form of a political institution called market.

[33] Friot, Bernard. 2014. *Emanciper le Travail: Entretiens avec Patrick Zech*.

In what sense is the market a generalized site of social validation? In his re-evaluation of Marx's theory of value, Jean-Marie Harribey points out that Marx did not think value was produced before, or we should say value does not appear before, exchange. It is misleading, therefore, to say use values are "given" an exchange value when they reach the market, and incorrect to conclude that they contain a "substance" which is "value." There is no ricardian incorporation. In other words, exchange, within the capitalism mode of production, is the site of "social validation" of labor—of the labor required, but not as concrete labor, as abstract unit of labor. Indeed, we can speak of concrete versus abstract labor, the latter being not the specific activity of making use values but the total sum of social labor contributing to value. Or as Isaac Rubin writes, "abstract labor is not a physiological category, but a social and historical category," abstract labor coming about by the "equalization of all the forms of labor within the frame of multilateral exchange of the products of labor."[34] According to Harribey, we can then use a three-pronged concept of value: use value, economic value (the necessary fraction of social labor), and exchange value, which in monetary exchange will take the form of a money amount as price.[35]

[34] Issac Rubin. *Essai sur la theorie de la valeur de Marx*. pg.193. My translation.
[35] Harribey. La Richesse , la Valeur, et L'Inestimable. pg.126.

Still, we should be cautious of assuming that the supposed impersonality of modern economic relations, often extended to society more widely, can be attributed only to the spread of money as general equivalent. As Marshal Sahlins notes, echoing research by Maurice Bloch and Jonathan Parry, indigenous cultures can show a remarkable degree of resilience to the introduction of the money form and to contact with outside exchange, provided other structures remain stable. Their research aims to undermine the view that "money was of major significance for the development of the cognitive world we now inhabit," supposedly helping "to promote rational calculation in social life and encourage the rationalization of modern society," a view they attribute principally to Simmel.[36] Contrary to what Marx suggested in his more youthful work, in particular the Manuscript of 1844, the presence of a general equivalent of exchange is probably not enough to "objectify" social relations. As Bloch and Parry argue, the role taken by money within a society depends just as much on a the "transactional order" of that society, "informed by the wider symbolic and social orders."[37]

If the general equivalent is not enough to somehow permit the objective determination of exchange value, then we might think that the site of exchange,

[36] Bloch and Parry. "Money and the Morality of Exchange." (1989). pg.4
[37] Bloch and Parry, pg.28

as the site of social validation, poses acutely the social question of authority and objectivity. Anthropological and historical research shows that social practices, customs, or norms could give the exchanges at the site of validation different forms. If the marketplace was such a charged site of moral expectation, as Thompson and others have described, it is because the price was the expression of recognition of economic value within a society, the recognition of social labor. However, at the sites of exchange, the marketplace as site of validation took the form of personal, or at least local, and usually face-to-face contact. Even the extended trade networks described by Braudel could reduce to individual negotiation, and may not even have resembled a market.

In the early decades of the 19th century in France, the local and perhaps affective exchange of the marketplace was now being radically altered by numerical data. France was divided into a large number of local marketplaces, whose prices where monitored by the prefects through undercover police indicators, a system already present in the ancient régime. The creation of a national market meant the dissemination of printed numbers, but also the widespread collection of trade data. The project of market objectivity meant the creation of a new ideational reality, The Market, consisting of the overlapping informational glazes of the actors, the arena where prices were to be same.

The market as collective ideality became sensible to farmers selling grain, to workers selling their labor time, in the form of numerical data beginning to circulate more widely. They were governed by the "impersonal information of uniform price." To be sure, insofar as it affected prices throughout France, the market was real. The rise of market data was concomitant with a quantitative and totalizing representation of it in the political sphere of the nation-state. Statecraft, Polanyi reminds us, contributed to the rise of the market as "disembedded" institution, and now decisions about the market would have effect on prices throughout.

These were decisions of a political order—trade tariffs, limits on hoarding, regulations on labor, standards for grain, etc. Before, if these might have been settled by the authority of tradition, or the fiat of the prince, now the world of juridical equality in principle—and in the realm of ideas the rising liberal ideal of rule free of arbitrary—would necessarily make these decision contentious. It is not surprising, then, that with regards to these arenas we find a turn to technical objectivity, the "structured and rule bound" practices of quantification which Ted Porter describes as "technologies of distance," typically emerging in situations of distrust to keep out probing outsiders.[38]

[38] Porter, Theodore M. 1995. *Trust in numbers : the pursuit of objectivity in science and public life*. Princeton, N.J.: Princeton University Press. pg.ix.

In practice, within the market as institution of value, exchange value and price are not identical. Through processes of supply and demand, mimetic behavior, the dis-synchrony between sectors of the economy, or between national economies, prices may be at a level where they do not permit a seller to meet their costs of production.[39] Contrary to what is sometimes said about the theory of value, Marx showed an awareness of this. For example, he wrote that "the dependence of the cultivation of particular agricultural products upon the fluctuations of market-prices, and the continual changes in this cultivation with these price fluctuations...are in contradiction to agriculture, which has to minister to the entire range of permanent necessities of life required by the chain of successive generations."[40]

The intuition is confirmed when we considered the way the Agricultural Adjustment Act of 1933 turned to a statistical indicator as to remedy the serious drop in agricultural prices, the decline of farmer's income through the 1920s resulting in part from rising industrial prices. The act was designed to implement programs seeking to maintain prices at parity 100—meaning that farmers would have the same purchasing power as they had on average during 1909 to 1914. Parity price was to be achieved through control of the amount of crops produced

[39] Andre Orlean. L'Empire de la Valeur: refonder l'economie. (2011).
[40] Capital. Vol 3. Part vi, chapter xxxvii.

per year, storage of surplus crops, dumping of surpluses on foreign markets, or compensating farmers not to produce certain years.

I advance the following hypothesis: The specificity of modern societies is numerical quantification as a social relation—which is to say, objectivity as a form of social practice central to the relations of production. The liberal project contained a tension—precisely the tension which led to the rise of technical objectivity as a relation of production: the market, much like a certain idea of technical objectivity in science, was conceived as the evacuation of subjectivity, the taming of arbitrary decisions about what is termed economic. But the market was not self-sustaining, and in no case could it exist as a sphere of norm-free sociality, which would necessitate meeting the ideal of mechanical objectivity, an ideal which appears, as a matter of historical and sociological reality, "never fully attainable."[41] To understand the market as an institution of value and a technical project is to see that its implementation produces by necessity a situation of distrust, because decisions about this sphere of activity determine economic value, in the form of the price. As the market was disembedded from tradition social relations, it became embedded in technical systems, which are inescapably political upon scrutiny. In a sense, this story is also a generative account of the

[41] Porter. Op.cit. pg.7.

general political organization, arising after the French Revolution, often called liberalism.

Quantification as Force of Production versus as Relation of Production

Few questions have spilled more ink that the interdependence of the productive forces and the relations of production. How does the technological change in the way a society reproduces its material conditions of existence affect the kind and complexity of social relations, activities, and representations, how society reproduces itself in its generality? Attempts have been made to understand how technological development may have led to alternations in social relations and in culture. Conversely, changes in social relations can no doubt affect technological development, the forces of production. The question poses itself with even greater problematic force when we consider the practices of objectivity as tools on the one hand and on the other as technical manifestation of social relations. Quantification and calculative practices can appear as representations of the world, in such as way as to aid the process of production, the transformation of nature. In this case, numbers stand in relations of representation to the world. The role of quantification within the forces of

production, the consubstantial development of these, has been brilliantly studied by Norton Wise and colleagues.[42]

Still, we see that the numbers of public life form distinct category at the level of social analysis. In some respects, they have only have in common employing a numerical quantitative representation. That is not say a history of these forms is not deeply informative, tracing how tools moved from one kind of use to another, and thereby no doubt altering the practices in question. Nonetheless, when analyzed from the point of view of social relations, we do not see in the spread of quantitative tools the replacement of customary control with instrumental control; and in this sense, it is not a process of rationalization. Progress by historians of science and technology now makes it possible to grasp the now seemingly obvious fact that the use of quantitative tools does to not exclude judgment, that the work mathematicians is not the result of rule-following. "Modern society" is not the application of these rational systems to society.

I have tried to suggest how a certain anthropology can help us understand the rise of numbers in public life. We might suspect that there can be no general history of "numbers." Of interest is the specificity to that which it represents, in

[42] M. Norton Wise. ed. 1995. The Values of Precision.; Crosbie Smith and Norton Wise. Energy and Empire: A Biographical Study of Lord Kelvin. (1989).

this case, which it counts. Because numbers can act de facto as relations of production, they not only represent but also can take the form of a relation. In other words, it exists as representation, so that a history of economic numbers must also necessarily be a history of the political and scientific systems in which it works. What is certain, there cannot be an "origin" to the quantitative age—at least not if by origin we mean the setting in motion of an autonomous force with a certain resilience of its own. Indeed, only a description of the structural conditions which promote quantitative discourse can explain its persistent ubiquity in modern societies. Such an account will not have an origin as cause, but will describe the origin of causes. Otherwise, the best that can be done is to say, at this specific time, in this context, this form of quantitative argument flourished.

Even accounting and bookkeeping, which has fascinated as the apparent paragon of "capitalist rationality," functions more closely like a force of production than a genuine case of relation of production such as I describe above. Naturally, technics of keeping books are not unique to capitalism. According to Polanyi, "even branch banking reached a high development in Ptolemaic Egypt, where it served as a means of running an advanced planned economy in kind, without markets or money as a means of exchange." But "fifteen hundred years prior" to this system, Assyrian trade was using "the clearing of obligations

between traders' accounts" even in the "absence not only of price-making markets, but even of coined money."[43] Still, accounting presents a difficult topic because of the variety of practices included under the term. The moneylender balancing accounts, the merchant using double-entry bookkeeping, the commissaire-priseur evaluating an auction, are all said to be accounting.

Carruthers and Espeland argue that the spread of accounting was not so much a tool of rationality, but a rhetoric of legitimacy. Still, they concede that bookkeeping makes it possible for individuals "to evaluate rationally the consequences of their past decisions" and to "calculate exactly the resources currently available to them."[44] Undoubtedly, accounting can be used to convince other members of your moral and ethical standing, of the honesty of your practices, but it is difficult to deny its function as tool within the household or firm to in fact reach ends with more success. We begin to see the relative futility of debates that have tried to determine whether American farmers acted in a "capitalist way" by using their use of bookkeeping as evidence.[45] Such studies fall prey to the mythology that we are all little capitalists, no matter one's location

[43] Polanyi. *Trade and Markets in early Empires*. pg.14.
[44] Carruthers, Bruce and Wendy Espeland. 1991. "Accounting for Rationality: Double-Entry bookkeeping and the Rhetoric of Economic Rationality." Cf. Chiapello, Eve. "Accounting and the Birth of the Notion of Capitalism." CMS3, 7: Critical Accounting.
[45] For a summary of these debates see: Naomi Lamoreaux. 2003. "Rethinking the Transition to Capitalism in the Early American Northeast." The Journal of American History. Vol. 90, No. 2

within the social space. It makes relatively little sense to oppose customary to instrumental behavior, and to identify the later, especially when used by an independent producer, as evidence of capitalist activity.

It is clear enough that a kind of economic quantification is present as early as Aristotle, is present in the treatises of Roman agronomists, and the treatises of English agronomists in the 13th century. It's also arguable that calculation, although not quantitative calculation, is present non-capitalist and pre capitalist societies. But in the case of agronomy, they serve to aid the forces of production—Aristotle speaks of wise management of the household, the oikos. What is new with capitalist relations of production and the closely related market imaginary we call economic liberalism is that now numbers functions as relations of production. Perhaps idols still haunt us, but in a different form. Still, the claim that quantification acts as a social relation is only tenable if we read it with a grain of salt, not to ignore that rule by the numbers is always somewhat illusory.

FIGURE 1

From: Anonymous. *De l'échelle mobile. Mémoire adressé à M. le Président du Conseil agricole.* Dentu: 1858.

Chaque classe désignée dans ce tableau est formée par les départements suivants :

1re classe : Algérie, Aude, Bouches-du-Rhône, Corse, Gard, Hérault, Pyrénées-Orientales, Var.

2e classe : Ariège, Ain, Alpes (Hautes-), Alpes (Basses-), Doubs, Garonne (Haute-), Gironde, Isère, Jura, Landes, Pyrénées (Hautes-), Pyrénées (Basses-).

3e classe : Calvados, Charente-Inférieure, Eure, Loire-Inférieure, Nord, Pas-de-Calais, Rhin (Haut-), Rhin (Bas-), Seine-Inférieure, Somme, Vendée.

4e classe : Aisne, Ardennes, Côtes-du-Nord, Finistère, Ille-et-Vilaine, Meuse, Moselle, Manche, Morbihan.

TABLEAU DES DROITS D'IMPORTATION ET D'EXPORTATION DES GRAINS ET FARINES, *suivant la loi de l'échelle mobile du 15 avril 1832.*

PRIX MOYENS RÉGULATEURS DU FROMENT.				BLÉS.		FARINE.		SEIGLE.		MAÏS.		SARRASIN.		AVOINE.	
1re classe.	2e classe.	3e classe.	4e classe.	Entrée	Sortie.	Entrée	Sortie.	Entrée	Sortie.	Entrée.	Sortie.	Entrée	Sortie.	Entrée.	Sortie.
26 à 25 01	24 à 23 01	22 à 21 01	20 à 19 01	1 25	2 »	3 50	4 »	» 75	1 20	» 68 3/4	1 10	» 50	» 80	» 43 3/4	» 70 3/4
25 24 01	23 22 01	21 20 01	19 18 01	2 25	» 25	6 50	» 50	1 35	» 15	1 23 3/4	» 13 3/4	» 90	» 10	» 78 3/4	» 08 3/4
24 23 01	22 21 01	20 19 01	18 17 01	3 25	» 25	9 50	» 50	1 95	» 15	1 78 3/4	» 13 3/4	1 30	» 10	1 43 3/4	» 08 3/4
23 22 01	21 20 01	19 18 01	17 16 01	4 75	» 25	14 »	» 50	2 85	» 15	2 61 1/4	» 13 3/4	1 90	» 10	1 66 1/4	» 08 3/4
22 21 01	20 19 01	18 17 01	16 15 01	6 25	» 25	18 50	» 50	3 75	» 15	3 43 3/4	» 13 3/4	2 50	» 10	2 48 3/4	» 08 3/4
21 20 01	19 18 01	17 16 01	15 14 01	7 75	» 25	23 »	» 50	4 65	» 15	4 26 1/4	» 13 3/4	3 10	» 10	2 71 1/4	» 08 3/4
20 19 01	18 17 01	16 15 01	14 13 01	9 25	» 25	27 50	» 50	5 55	» 15	5 08 3/4	» 13 3/4	3 70	» 10	3 23 3/4	» 08 3/4
19 18 01	17 16 01	15 14 01	13 12 01	10 75	» 25	32 »	» 50	6 45	» 15	5 91 1/4	» 13 3/4	4 30	» 10	3 76 1/4	» 08 3/4
18 17 01	16 15 01	14 13 01	12 11 01	12 25	» 25	36 50	» 50	7 35	» 15	6 73 3/4	» 13 3/4	4 90	» 10	4 28 3/4	» 08 3/4
17 16 01	15 14 01	13 12 01	11 10 01	13 75	» 25	41 »	» 50	8 25	» 15	7 56 1/4	» 13 3/4	5 50	» 10	4 81 1/4	» 08 3/4

A tous les droits perçus par hectolitre pour les grains, et par 100 kilog. pour les farines, il faut ajouter le décime.

Au-dessus des limites supérieures du tableau des prix régulateurs publié ci-dessus, savoir :

1re classe,	26 »	3e classe,	22 »
2e classe,	24 »	4e classe,	20 »

les droits de sortie augmentent par chaque franc de hausse, comme suit :

Froment,	2 »	par hectol.;	sa farine,	4 »	par 100 kilog.
Seigle,	1 20	—	—	2 60	—
Maïs,	1 10	—	—	2 40	—
Orge,	1 »	—	—	2 40	—
Sarrasin,	» 80	—	—	2 »	—
Avoine,	» 70	—	—	2 20	—

Au-dessous des limites inférieures de ce même tableau, c'est-à-dire :

1re classe,	16 01	3e classe,	12 01
2e classe,	14 01	4e classe,	10 01

les droits d'entrée augmentent par chaque franc de baisse, savoir :

Froment,	1 50	par hectol.;	sa farine,	4 50	par 100 kilog.
Seigle,	» 70	—	—	2 92 1/2	—
Maïs,	» 82 1/2	—	—	2 70	—
Orge,	» 75	—	—	2 70	—
Sarrasin,	» 60	—	—	2 25	—
Avoine,	» 52 1/2	—	—	2 47 1/2	—

Chapter 3:

Substitutes of Politics

Disentangling Political Economy, Liberalism, and "Biopolitics"

For Michel Foucault, the development of liberalism as a political and economic practice was closely tied to what he called biopolitics, the state adopting a form of government to manage the biological dimension of human populations, and the productive capacities of a territory. In his later lectures, extending his concept of biopower, he appeared to postulate a common origin to biopolitics, political economy, and liberalism. The last term of this trio was characterized, he argued, by the increasing external self-limitation of Raison D'Etat, a transformation for which political economy was the vector.

Foucault identified liberalism with a new form of governmental limitation, not merely an extension of the already existing limits, juridical and legal. "The theory of natural law and the assertion of imprescriptible natural rights that a sovereign may not transgress under any circumstances" are to be understood as forms of resistance, reactions to absolutist royal power. If the juridical

institutions in question were "intrinsic to the development of royal power," they now are co-opted as "extrinsic." In France and in England, "the oppositions"—bourgeoisie in England, "parlements, protestants, and the nobility in France—"always makes a legal objection to Raison D'Etat and consequently uses juridical reflection, legal rules, and legal authority against it."[1] The distinction has plausibility for Foucault insofar as he wanted to theorize the power of the state as expansive and far-reaching until checked. It would be more accurate to speak of power of the sovereign, since in any rigorous sense of the early modern state, the judicial institutions are a part as well.

Setting the stage in this way, Foucault can pose the problem: "What is this new type of rationality in the art of governmental reason, this new type of calculation that consists in saying and telling government: I accept, wish, plan calculate that all this should be left alone?" His answer: "this is broadly what is called 'liberalism'." However, he also postulates "that the type of calculation or form of rationality that made possible the self-limitation of governmental reason was not law...obviously, it [was] political economy."[2]

What is at stake when identifying political economy with liberalism? To begin, for Foucault, political economy is taken as an understanding of the

[1] Foucault, Michel. The Birth of Biopolitics: Lectures at the Collège De France, 1978-79. Basingstoke England ; New York: Palgrave Macmillan, 2008. pg.9
[2] Ibid. pg.13

voluntary and involuntary mechanisms at play within the social and biological realm, more broadly within nature (indeed, he later writes that liberalism is a "naturalism.") The triple equation of biopolitics, political economy, and liberalism has considerable implications—a point which appears to escape some who insist on using Foucault's categories. The central point I wish to dispute is that liberalism had its origin as "security mechanism"—or to put it more precisely, I show what this covers up and misses the point.

The 18th century, then, is putatively "the irruption of the market as site of veridiction," rather than as site of "justice":

> On the one hand, the market appeared as something that obeyed and had to obey "natural", that is to say, spontaneous mechanisms. Even if it is not possible to grasp these mechanisms in their complexity, their spontaneity is such that attempts to modify them will only impair and distort them. On the other hand—and this is the second sense in which the market becomes a site of truth—not only does it allow natural mechanisms to appear, but when you allow these natural mechanisms to function, they permit the formation of a certain price that Boisguilbert will call the "natural" price, the physiocrats will call the "good price" and that will later be called the "normal price," that is to say, a certain price—natural good, normal, it's not important—which will

> adequately express the relationship, a definite, adequate relationship between the cost of production and the extent of demand.[3]

This description parallels the distinction made consistently by Foucault between mechanisms of discipline and those of security. In his 1977-78 lectures, he had already suggested, relying heavily on the writings of the grain merchant L-P Abeille, that political economy, putatively based on the idea of the market, was an "anti-famine mechanism."

There are problems. As I see it, Foucault projects a notion of the market that was absent, and as a result does not capture the relevant transformations, the real forces leading to a separation of politics and economy. In this sense, Foucault has perhaps rightly been accused of harboring a neoliberal orientation.[4] While I would not go so far, for he does keep a critical distance to liberalism and neoliberalism throughout, it is nonetheless true that at the time Foucault aligned himself with some of the more reactionary elements of the French intelligentsia. This may explain why his reading of the origin of economic liberalism seeks to liquidate any Marxist explanation. Symptoms: explanations take place at the level of discourse, subjectivities are uprooted from objective material

[3] Ibid. pg. 31

[4] Zamora, Daniel. 2004. Critiquer Foucault: les Années 1980 et la Tentation Néolibérale. [Bruxelles]: Éditions Aden. Cf. Grenier, Jean-Yves, and André Orléan. 2007. "Michel Foucault, L'économie Politique et le Libéralisme." Annales. Histoire, Sciences Sociales 62, no. 5.

determinants structuring the historical transformation in question, class antagonisms (the question of the relations of production) are replaced by "regimes of power," enters also the questionable opposition between state and society. As a result, biopolitical explanations consistently occlude, and to this day more than ever, the relevant dynamic at work in capitalist society—namely, that of capital. The reader will understand why I am so keen to develop an alternative account grounded in the transformation of the relations of production. Still, if I use Foucault first as looking glass, then as foil, it is because his work had the virtue of asking what it means to think of liberalism as a practice engaging relations of power.

We are to believe the transformation of economic relations resulted from new ways of conceptualizing the underlying, natural, economic phenomena. Foucault clearly states that there can be no outside explanation: "I do not think we can find the cause of the constitution of the market as an agency of veridiction."[5] According to him, certain economic developments made the "irruption of the market as site of veridiction" possible, but it "would be futile, anyway," to show that "it was necessary." The explanation, then, amounts to a slight of hand that assimilates biopolitics to liberalism. The "intellectual instrument", political economy, springs as from the head of Athena. I ask: what

[5] Foucault, *Biopolitics*. p.33.

are the conditions of possibility for the practice of liberalism? Can it be explained by the contradictions at work in the mode of production? To the latter, I answer in the affirmative.

It seems fantastical to think that Foucault actually believed that with the new tools of political economy, agents of the state were now respecting the signals of prices, and managing, bio politically, the affairs of the state. The natural order invoked by the physiocrats was, it seems now too obvious to state, more imagined than real.[6] To be sure, Foucault was lucid on this front, to the extent that he considers that liberalism is also a "consumer of liberty." The implication is that there are nonetheless disciplinary mechanisms necessary to enforce the market-situation. Still, it would lead us astray to follow Foucault in thinking that economic liberalism was a practice that gives free play to actors and adjusts government accordingly. It is not hard to see why this led him, or more precisely his neoliberal followers, to imagine that liberalism had finally discovered a disciplinary mechanism functioning without coercion.

This is the result of ignoring material conditions in the basis of society and historical change (nota bene: these include the mental as part of the material). The problem of power is reduced to a question of discursive regimes. Since this

[6] Harcourt, Bernard E. 2011. The Illusion of Free Markets: Punishment and the Myth of Natural Order. Cambridge, Mass.: Harvard University Press.

approach makes no attempt to pierce the level of appearances to elucidate the underlying logic within which the so-called discursive regimes sit, history is seen as a sequence of regimes of power impinging to a greater or lesser degree on individual subjectivities. While the early Foucault might have thought his project a critique of the institutions of bourgeois repression, by ignoring the question of value, the structuring role of the material production and reproduction of societies, he would later celebrate a kind of liberal-libertarian society, to use Michel Clouscard's apt phrase[7].

In order to see clearly, it is necessary to disassemble the three concepts (liberalism, physiocracy, political economy) Foucault joined together under the umbrella of biopolitics. Only in this way will the path be open to a proper understanding of the relations between quantification, economy, and liberalism.

The market is not present as an organizing force, or for that matter as a central concept, in the writings of the two authors often called the "fathers of political economy," Adam Smith (1723-1790) and Francois Quesnay (1694-1774). Even the most cursory reading of Smith reveals nothing of the embalmed centaur erected by the ideologues of capital in the 20th century, strangely as a counter-figure to Marx, and where the infamous "invisible hand" is equated with market

[7] Clouscard, Michel. 1985. *De La Modernité, Rousseau Ou Sartre*.[in fre]. Théorie. Paris: Messidor-Éd. sociales.

mechanisms. It is well known that Smith speaks of an "invisible hand" only three times, and in none of these cases does it refer to market exchange.[8] For Smith, the origin of economic value is labor time. The place of exchange, the marketplace, registers a price composed of the costs of production.

Quesnay, perhaps the founder of a French form of political economy, wrote the Tableau Economique, to which he owed much of his fame, in 1758. For him, quantitative calculation assured the demonstrative character of his philosophy. His fellow physiocrat Mirabeau would write that with Quesnay's Tableau, "the source, march, and effects of circulation" are made "the base of economic science, and the compass for the government of state."[9] For Mirabeau, calculation was the key to the scientific character of physiocracy, a term that signifies, it should be recalled, the rule of nature.

Has this anything to do with the market as "site of veridiction?" No, and the market plays surprisingly little role in the theories of Quesnay. Quesnay was deeply rooted in court life of Versailles, interested in founding scientific governance, and also a system of public accounting. Physiocracy was a doctrine of state intervention, in the interest of specific social groups, but which purported

[8] Cf. Emma Rotschild. 2001. *Economic Sentiments: Adam Smith, Condorcet and the Enlightenment*. Harvard University Press. The invention of a "neo-classical" Smith could be, in itself, subject of an illuminating study.
[9] Cited by Steiner, Philippe. 1998. *La science nouvelle de l'économie politique*, Philosophies. Paris: PUF.

precisely to act on the basis of natural processes of economic and social life.[10] Already it was a kind of repression of the overt authority of state—if not in practice, then in representations (this is the paradox, I think, which so interested Foucault).

If the physiocrats claimed to be responsive to social processes, what fact of nature had such normative force? Quesnay's Tableau sought to depict the material reproduction of a society by tracking the flow of money and material between classes and branches of production, thinking of it as a circuit. The numbers used by him were fictional—a method also used by his fellow physiocrat Butré [11]—such that this representation had a demonstrative character, rather than a kind of empirical bureaucratic practice. A central tenet of physiocracy was that only agricultural production could be the source of wealth, so that within the economic circuit, the only source of growth, anything greater than simple reproduction, would require an increase of the material surplus of agriculture. If agriculture had to be encouraged for national wealth to grow, it follows that physiocracy presented itself as an enlightened despotism with the aim of

[10] Théré, Christine and Loïc Charles. 2007. "François Quesnay: A "Rural Socrates" in Versailles?" History of Political Economy, Duke University Press, vol. 39(5).
[11] Charles, Loïc and Christine Théré. "In the Shadow of François Quesnay: The Political Economy of Charles Richard de Butré," Economix Working Papers 2013-32, University of Paris Nanterre. 2013.

governing in a way favorable to large-scale farming and by implication the landed proprietors who collected rents from farmers.

Arguments for the free circulation of grain were not motivated by a general belief in the truth of markets, rather, the policy of opening boarders to grain exports should be understood narrowly as a way to grow agricultural production by increasing the return on outlays of the agricultural capitalists. Issak Rubin, author of a unique history of economic thought published in 1922, would go so far as to observe: "it was Quesnay's view that free importation could only be allowed in years when the harvest had been bad...advocating free trade mainly to the extent that the interests of agriculture demanded it." For this reason, Rubin sees in the physiocrats a foil to the "classical economists" such as Smith, the former expressing the interests of agricultural capitalists, while the latter those of the industrial capitalist class. Rubin concludes in a way that turns Foucault's new "governmentality" from its head onto its feet:

> Just as the physiocrats economic theory aimed to discover the laws of capitalist reproduction, so their economic policy had to assure that this process of reproduction proceeded normally...the physiocrats took the laws of capitalist reproduction that they had discovered to be eternal and immutable 'natural laws.' It is therefore understandable that they passed off their principles of economic policy as being commanded by natural law. They declared free trade

> to be a 'sacred freedom, which can be looked upon as a summary of all the rights of man,' in exactly the same way as taxation is subordinated by the Creator of nature to a definite social order,' prescribed by natural laws and coinciding with the taxation policy of the physiocrats.[12]

The rationality provided by economic exchange as restraint on state power was not so exogenous to natural right, as the arguments for the mobility of grain where more often than not couched in the language of natural rights, right to dispose freely of one's property, favoring British authors (i.e. Locke). This must be understood, narrowly again, as a claim in favor of the ability of merchants to dispose of their grain. In the famous anecdote, after all, the merchant LeGendre did not tell Colbert to "laissez-faire", rather, his retort was "laissez-nous faire"—let us do, rather than let do.[13]

Exchange Value and marketplace in early political economy

The term political economy encompassed a multiplicity of exercises, and Foucault was keenly aware of this. Moreover, the term would not have necessarily implied a strict distinction between what is considered a question of justice and what was seen as instrumentally prudent. In his 1755 Discourse on

[12] Rubin, Isaac. 1989 (1929). A History of Economic Thought. Pluto Press. pg. 145.
[13] And this anecdote is reported in an article by a grain merchant: L-P Abeille, Lettre d'un negociant sur la nature du commerce des grains (Marseille, 1763).

political economy, published in the fifth tome of the Encyclopedie, Jean-Jacques Rousseau uses the terms economie politiques and economie publiques interchangeably. Rousseau states that if in Greek oikonomia meant the wise management of the household, when applied to "a general, or political economy" as opposed to a "domestic, or particular" one, the problem becomes the government of a state, which can in no way resemble the household because the state must express the general will and act for the good of the people, the latter two being inseparable throughout his political thinking. Rousseau describes the creation of institutions promoting public virtue as the basis of a wise political economy, so that citizens may govern themselves, and have neither representatives nor rulers. The institutions of public virtue resemble the leggi and ordini described by the republican Machiavelli, who he cites—so that the exercise seems to inherit more, if anything, from the mirror of princes genre, with the radical twist that the general will is the sovereign, replacing the prince. For Rousseau, questions of production and distribution are subordinated to general will, and their functioning relies, at base, not on self-interest but on virtue. In this sense, the distinction between the economic and political is absent.

Etienne Bonnot de Condillac is often cited as among the first to defend the notion that utility is the source of value. The editors of Foucault (Ewald and Fontana) convene Condillac to support Foucault's claim that the market

becomes a "site of veridiction" towards the end of the 18th century. Indeed, Condillac wrote that "the value of things is founded on the need we have of them," but plainly value here does not imply the realm of prices, since the price, for Condillac, appears as a ratio of things which happen to have value, but the magnitude of value only indirectly translates to prices. In between, the realm of opinion intervenes and is, for Condillac, anything but source of truth. "Just as we flatter ourselves during abundance, during famines we fear," such that opinions alters the value of things even when the utility they procure remains the same. Condillac gives the example of water, which is very useful, but so abundant "it appears to have no value at all."[14]

Much is made of Condillac's statement that "prices can only be regulated in markets, because it is only there that the gathered citizens, by comparing their interests in exchanging, can judge the value of things relative to their needs."[15] Read in context, however, this phrase does not impute the market with the metaphysical powers moderns see in it, since Condillac invokes the most rustic tale of two buyers attempting to exchange: "First it will often happen that they do not run into each other for the one we are seeking will have gone to another,

[14] Condillac, Étienne Bonnot de. 1776. Le Commerce et le gouvernement considérés relativement l'un à l'autre, ouvrage élémentaire, par M. l'abbé de Condillac. Amsterdam ; et Paris: Jombert et Cellot. pg 12-14.
[15] Foucault, *Biopolitics* p.49.

or even to the place of those who are looking for him. They lose much time in these errands." For this reason, "sooner or later, experience will make them realize this inconvenience. So they will seek, a more or less in the center of town, a place were they will agree to meet...on marked days, and where wares will be brought for exchange. This concourse and place will be called market."[16]

This description is consistent with the 18th century marketplace, where the exchange of goods was, especially for grain, legally required to pass through the marketplace with restriction of time and place. It seems inappropriate, then, to use Condillac as evidence of the market as site of veridiction, when his position is instead the expression of a social organization where the marketplace was organized as site of justice. Still, Condillac did argue that with the liberty of commerce, the suppression of monopolies, grain would find what he called its "real price." Foucault's keen insight was not mistaken on this point, that the thinkers he associates with the origin of liberalism often postulated the virtue of non-interference. Yet paradoxically, Foucault was insufficiently attentive that this itself was a political and moral claim erected on the grounds of an imagined natural order. Foucault's lecture earned lasting and justified renown for the way it illuminated a transition in the self-reflexive justification of government which began to take the appearance, during the 18th century, of a calculative

[16] Condillac. pg. 30

rationality. Left unaddressed, however, is why these new forms of justification coincided with the rise of capitalism, and new social forms of substitution and repression. These questions will be the subject of this chapter.

Contradictions of the capitalist value-form and their social expression

Fully developed capitalist society has the particularity that the social life of its members is mediated by a system of objects, in motion, through which people exchange quantities of their labor time. When abstract labor emerges, human productive activity no longer functions only to produce concrete use values, it now becomes a way for individuals, the majority, who only have their labor power to sustain their existence, to sell their labor power, and for the possessors of capital to amass wealth through the valorization of value. It is in this sense that commodities have a dual nature as "coarsely sensuous" physical objects, as far as they are use-values, while as values—which is to say, as forms of social mediation— "not an atom of matter enters."[17] In this way, abstract

[17] Marx, Capital Vol. I.

labor is different from concrete labor (activity) insofar as it functions primarily as a "socially mediating activity".[18]

The rise of abstract labor is not merely coincidental, but co-extensive with the erosion of feudal structures that determined exchange and prices, and their replacement by different structures in which money, as general equivalent, plays a central mediating role. While money plays a key role, as Moishe Postone notes, "Marx's analysis of the commodity is not an examination of a product that happens to be exchanged regardless of the society in which that takes place." I follow Postone in thinking that "value is not essentially a market category."[19] The implication, as I see it, is that it would be misleading to identify capitalism with the market, and moreover, unnecessary to identify it with generalized market dependence. The key concept here is Marx's distinction between formal and real subsumption. Under formal subsumption, the earlier, traditional production methods of artisans, weavers, farmers, etc. remained yet unchanged while the social mode of production took a capitalist form, which is to say, it relies on labor free of their person, but removed from the legal possession of their means of production—and it passes by the monetary equivalent to valorize capital. This introduced contradictions with the inherited work-processes, contradictions

[18] Postone, Moishe. *Time, Labor, and Social Domination : A Reinterpretation of Marx's Critical Theory*. Cambridge University Press, 1993. p.150.
[19] Ibid. pg.123.

leading to a transformation of these ways of working. Under real subsumption, then, the capitalist mode of production transformed the base of work processes on which it relied—but it also transformed other social institutions. The problem posed by conceptualizing this process, which I take as my own, is to "make apparent the laws of correspondence between a mode of production and other forms of social practice"[20] and to examine specifically the "new modes of social existence and thought engendered by the development of the capitalist mode of production."[21]

Just as the social mode of production entails a secular transformation in the process of concrete activity, the dynamic of capital accumulation and the tendential laws imposed by the value-form drive an expansion of what Marx termed the "world-market," which means not just geographical expansion but the commodification of increasing areas of human activity. To say this in no way implies that strictly "economic" considerations now prevail (unless the economic is properly understood—which will be our task). Rather, in this process, the actions of the dominant class—but not just the dominant class—are formed by the representations of the modes of appropriation of nature and of human activity, and fetishized social relations. Suffice it to say that the real historical

[20] Godelier, Maurice. 1990."La Theorie de la transition chez Marx." Sociologie et Societies. Vol. XXII n.1. pg.57
[21] Ibid. pg.56

development involves the co-evolution of several social institutions, and the contradictions generated.

In this perspective, the contradictions emerging from the expansion of the social forms of exchange entailed by the capitalist mode of production hold the key to a history of the economic and political as separate spheres, and the representations of these social spheres.

None of the four constitutive elements of the capitalist mode of production (described in the previous chapter) begin their existence only in capitalism, and this is also true for money. There is some agreement that money had its origin as a precious object with sacred associations or functions, which moved into relations where these objects could be alienated in impersonal, as opposed to gift-like, exchanges. Thus, it was integrated into other institutions, the state, bearing the stamp of authority, of the polis, of the prince, etc.[22] Primitive monies do not have the same function as in modern societies: these generally cannot be exchanged for everything, they are not general equivalents. Within modern society, money also comes to assume several other functions.

With the rise of capitalism, money becomes the incarnation of abstract labor, value. As such, it plays an important role in the subsumption of feudal and

[22] Godelier, Maurice. 1996. L'énigme du don. Paris: Fayard.
Cf. Servet, Jean-Michel. 1979. Essai sur les Origines des Monnaies. Lyon: Institut des études économiques.

manorial relations, and is co-extensive with the expansion of the "sphere of exchange," a motive element in my account of the rise of quantitative objectivity. Feudal relations kept producers tied to the land, and, as Perry Anderson puts it, "feudalism as a mode of production was originally defined by an organic unity of economy and polity," where "the institution of serfdom as a mechanism of surplus extraction fused economic exploitation and politico-legal coercion at the molecular level of the village." Thus, "with the generalized commutation of dues into money rents, the cellular unity of political and economic oppression of the peasantry was gravely weakened, and threatened to become dissociated (the end of this road was 'free-labor' and the wage contract)."[23] In modern economic terms, the result would be a market for labor-power. For Anderson, this weakening of domination at the local level along with the expansion of commodity relations led to the projection of control onto "the Royal apex" of the absolutist state, creating also the conditions for the doctrines of mercantilism. Under feudal circumstances, it is no surprise that there could be no representational separation between the economic and the political.

While the commutation to money rents cooperated in weakening links of personal dependence and domination, it did not suffice to transform a mode of production, nor did the conditions for abstract labor exist just yet. In Marx's

[23] Anderson, Perry. 1974. Lineages of the Absolutist State. London: N.L.B. pg.15-21.

account, often nuanced and critiqued, the latter required the expansion of commerce on the base of feudal production, such that individuals were dispensed of their direct connections to the means of production and the traditional structures sustaining these—enclosure for agriculture, replacement of the corporations as locus of control of the work-process for artisanal and industrial production.

Marx's genealogy was only a sketch focusing on 16th and 17th century England. In France, the process of subsumption would take place later, as many of the structures of the Ancient Regime remained in place until the last quarter of the 18th century, and many until the revolution. What matters for the present argument is that these structures precluded the existence of a "market" in the sense that the word seems to be heard today, and as a shared mental representation, too, the concept was absent.

Part of the reason for this was the nature of artisanal production, and the corporations in which it took place. The corporations (also called guilds) had a political dimension within the town (they were a body-politic, hence the name), and determined the price of products, which master artisans could not alter, just

as they could not invest in commerce, and could only take a limited number of journeymen.[24]

Within this society, the merchant had little involvement in the work process. Even with the development of manufactures, the prices, exchange values, could not be described as resulting from a market. The merchant relied on printed guides and commercial dictionaries to locate a good within the hierarchy of products and ascertain the price; for example, the Dictionaire des Manufactures, Arts, et Metiers (1785) by Roland de la Platiere. For this reason, J-Y Grenier speaks of a "reference price", an observation congruent with Max Weber's often cited observation that without the reference prices of traditional exchange, capitalist exchange would have had a difficulty "finding" its prices. Grenier concludes that, overall, in the exchanges of old-regime France, "demand thus does not create a hierarchy through prices, it is determined by an order from the time of production."[25] The king is seen as the guarantor of harmony through good political administration[26]; the relatively strict hierarchy of goods

[24] Godelier, Maurice. "La Theorie de la transition chez Marx." Op.cit.
[25] Grenier, Jean-Yves. 1996. L'économie d'Ancien Régime. A. Michel.
[26] On this point, Grenier cites Montchretien.

corresponds to the imaginary of a society where each has a determinate place within the order.[27]

Surveying requests by iron merchants in 1724, silk merchants of Toulouse in 1754, and the edicts of the Conseil D'Etat of 1714, 1715, and 1718 concerning glasswork—to cite a few examples from his sweeping study of the old regime economy—Grenier concludes that there existed a tacit expectation, including from the manufacturers themselves, that the state, incarnation of royal power, would have a direct role in setting prices. Even when edicts were not respected, these functioned as points of reference. For the claimants, the expectation was "less that [the conseil d'etat] assure the equity of exchange, but instead a just distribution of incomes...the idea that competition will lead to this result on its own was absent."[28]

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[27] While agreeing with Grenier here, I do not follow him when he defends the idea that only when price and value coincide are there "objectified" capitalist relations, and even more mistaken, that only then exist relations of production. To the contrary, there is no special problem of the ancient regime economy. What Marx produced was an immanent critique of the concept of value, revealing that goods are not merely use values and exchange values, but forms of social mediation. The same was true during the old-regime, without to be sure the generalized conditions for the law of value to emerge. Several relations of production coexisted during the period of the old-regime, and before, including thesorization of economic value through the selling of goods for money. Just as Marx could see that feudal ground-rent was a form of appropriation of value (i.e. alienated human labor), an anthropological theory of relations of production requires attention to the fluid forms of appropriation of human activity in the production and reproduction of society. Resulting from the different forms of appropriation, the structuring contradictions of class conflict are still present, but take different forms.

[28] Grenier, pg.98.

Mental structures of exchange in 18TH century France

If these were the mental structures within which non-subsistence goods were produced and distributed, the exchange value of subsistence goods, especially grain and bread, had long been determined by vernacular and administrative norms. According to Miller, "throughout France, since the late medieval period, bread prices were set by municipal authorities, generally the police officials." Many of these inherited from medieval prohibitions, for example, the traditional prohibition that had long been in place stating that grain could only be sold at the marketplace, not at farms, was formalized by an edict of 1723 applying in the major markets throughout the realm of France.[29]

Moreover, whether or not civic authorities enforced anything like a "just price," there is much evidence that normative expectation was always present. Nicolas Bourguinat describes how in cases of rarity, 18th and 19th century France often saw "consumers raise up against" the hoarders of grain "and want to appropriate it" for the good of the community. This could take the form either of interception or of forcing unreasonable sellers into the marketplace with real or implied violence. It is this substrate of normative expectation during exchange

[29] Miller, Judith A. Mastering the Market : The State and the Grain Trade in Northern France, 1700-1860. Cambridge University Press, 1999. pg.28

that E.P. Thompson was expressing with his haphazard term "moral economy." He showed how the rise of a capitalist economy collided with these fragile structures that had been stabilizing the latent contradictions of exchange value.

Just as important to recall, before the 19th century, France was mainly composed of disconnected, small, local markets. As late as 1852, many areas still escaped the generalization of the grain trade. In the inland Mediterranean region, grain was produced mainly for domestic consumption. The region of Autun would not have a local market until the mid 1830s—as grain was concerned, it was self-sufficient.[30] With the rise of absolutism, the parcelized local sovereignties became integrated into a structure where the state at the level of the realm enforced the rules of the grain trade. The marketplace could be described as the site of enforced justice par excellence: police often patrolled it on horseback, and informants monitored transactions and reported to prefects.

Let us leave aside from the start the historiography tending to portray the relation between trade and state as a growing understanding of already existing market forces. Likewise misleading, but closer to the mark, is the putative opposition between regulated exchange and free exchange, supposedly contained in two different ways of seeing the world. Steven Kaplan, leading historical

[30] Bourguinat, Nicolas. 2001. Les grains du désordre l'État face aux violences frumentaires dans la première moitié du XIXe siècle, Civilisations et sociétés. Paris: EHESS.

authority on the grain trade, structures his major treatise on 18th century France around the unfortunate opposition between a "police principle" and a "market principle." The formulation suggests that the history of the grain trade is the history "of the shifting relationship between two theories and two (or more) realities," so that the officials responsible had to find "the proper dosage."[31] Under this view, the "marketplace" is the location of the "police principle," while the "market principle" was sale independently of the temporal and physical requirements exercised by the police principle—so that, paradoxically perhaps, market was opposed to marketplace.

While this last characterization seems accurate enough, the problem begins when Kaplan saddles the postulated "market principle" with the character that it was understood as "endless self-adjustment, so that interference of any sort would shatter its coherence."[32] There is a problem in opposing the market principle to the "marketplace," where the latter is said to be the realm of the police, of the police principle, because, by his own definition (which he explicitly borrows from Polanyi), in order to have a price-fixing system, there must be some mechanism for individuals to compare price and supply at once, which, at the time, required exchange to happen in a common physical space. The real historical solution to

[31] Kaplan, Steven L. 1984. Provisioning Paris : Merchants and Millers in the Grain and Flour Trade During the Eighteenth Century. Ithaca: Cornell University Press. pg.31
[32] Ibid. pg.25

this apparent contradiction is that no such market principle existed, or more precisely, the market principle was the relatively weak claim that merchants should be able to dispose of their grain as they pleased. In other words, it was a principle about property, perhaps along with the relatively weak general claim by some authors that individual vice (profit-seeking) may yield public benefit, a topos dating to at least Bernard Mandeville.

The considerable documentation Kaplan has developed lends itself to another reading, which he suggests also. The tension, in fact, was not between marketplace and market principle—I argue the two were inseparable—or between "police principle" and "marketplace," but the constant balancing act of the officials, tension between the needs and demands of the population against the profit-seeking practices, the appropriation of the grain trade. The traders mobilized a juridical argument, to be sure—but they could also wield the real or implicit threat of constraining the flow of grain if the officials were too heavy-handed. On the other hand, allowing prices to be increased too much, or grain supply to narrow, could result in civil unrest. There was often, in addition, complicity between merchants and officials. Kaplan notes with some irony: "government intervention did not contravene the market principle, in the eyes of

the merchants, so long as it favored their commercial interests."[33] At the least, the merchants sometimes saw actions of the regulators as generating something like fairness, as required for trade, such that liberty, like the truth of prices, was not produced by mere absence.

The grain exchange had all the trappings of what Polanyi's school would have called an "instituted process." A defining feature of this exchange structure was a certain form of authority, residing in the officials and their incarnation of royal power. Insofar as the mental is part of the material practices of exchange, the so-called "moral economy," if this term means anything, is one constitutive element of the relations of production. The overarching authority exercised locally in these local contexts constituted also these relations that sustained a society. This is not to say that a so-called moral economy is any less alienated: The personal domination of feudal relations can appear to individuals as just, or at least necessary. Likewise, in the sphere of exchange-value—even in Thompson's moral economy—there is something that escapes humans, in other words, exchange introduces certain contradictions. The fetishism of commodities involves also a fetishism of the market, where the exchange value appears to reside in the objects themselves, and not in the social structure that give these value.

[33] Ibid. pg.183.

Until the revolution of 1789, holders of a venal office called the measurers oversaw the marketplace. In his Treatise on Police, published in 1729, the jurist and administrator Nicolas Delamare described the role of measurers: They are to "supervise the opening of the market, make open the [grain] bags at precisely eight o'clock in the morning, record the price from the sale of all grain accurately and without conniving, so that through them a report can be made..."[34] Delamare explicitly situates the measurer in the lineage of the Roman censor, figure of judgment and valuation, magistrate responsible for public morality and financial order in the Roman Republic, and holder of considerable auctoritas.

In reality, the measurers of old regime France did more than just record prices, as figures of authority they also played an active role in shaping grain prices: They interacted with buyers and sellers so as to encourage openness in negotiations, and could pressure one side or the other when prices where too low or too high, in order to prevent "speculative" or "artificial" prices.[35] The normative role of the measurers was also central in that they were responsible for recording the prices published in the mercuriale, the barometer of prices circulated throughout France, serving as reference for other administrators and

[34] La Mare, Nicolas de. 1729 *Traité de la police, où l'on trouvera l'histoire de son établissement, les fonctions et les prérogatives de ses magistrats, toutes les loix et tous les réglemens qui la concernent*. Seconde édition augmentée ed. Amsterdam. pg.122.
[35] Kaplan, op.cit. pg.547.

measurers. In recording representative prices, measurers could exercise considerable judgment by disregarding high or low prices, a judgment that was also political and could imply a question of distributive justice, since they were sometimes called to testify on the "reasonableness" of grain prices.[36]

The apodictic social function of circulating quantitative data was already present, yet exchange perceived as fair was still plainly secured by an overt figure of authority. The marketplace was still explicitly and implicitly, still a site of justice, in the Foucaldian sense. It should be noted, as well, that the authority of the mercurial was linked, underwritten in a sense, by its authors, by the auctoritas of the measurers.

The échelle mobile as substitute of politics

The collection of data on prices existed, then, well before the advent of the French republic. This network of data collection would grow quickly in the decades after the revolution.[37] Let us turn now more specifically to the question of the import and export of grain, the problem which so animated the

[36] Ibid. pg.548

[37] Bourguet, Marie-Noëlle. 1989. Déchiffrer la France la statistique départementale à l'époque napoléonienne, Ordres sociaux. Paris: Éd. des Archives contemporaines. Cf. Yücel Kaya, Alp. 2013."Le Bureau de la statistique générale de France et l'institutionnalisation des statistiques agricoles : l'Enquête agricole de 1836," OEconomia.

physiocrats. The era of bourgeois politics, and specifically the form it took in parliamentary representation, provides a striking contrast in the role quantification assumed. Beginning in 1816, a system called the "échelle mobile," or mobile scale, was introduced to regulate the trade of grain across boarders. The scale acted as a kind of rule-bound decision making system stipulating the exit and entry tariffs to be collected at each location. The departments were separated into classes, and a list of price ranges was provided for each class, corresponding to a precise entry or exit tariff. In addition, specific price offsets where provided for different types of grain: rye, corn, barley, buckwheat, etc. For instance, looking at figure 1, the échelle mobile passed by law on April 15, 1832, we see that for class 2, which included inter alia Ariege, Ain, and Jura, an observed price between 20 and 19,01 franc would require an exit tax of 3.75 franc for rye.

The first mobile scale system was adopted in 1816, but an early form of the idea was suggested as early as 1793 by a deputy of the Convention Nationale. On May 2nd of that year, the Convention debated the "question of subsistence goods," seeking to find a solution to the high prices and shortages of grain that were the cause of unrest. The options considered by the Deputé were mostly not new. Deputé Devars defended the traditional view that grain should only be traded on a specific market at definite times. "If you want to calm people," he

argued, "you must show that them what is quantity of grain available." Moreover, he proposed "to render the price level of the markets so prolific that the price of grain in all of the Republic can be known at each instant by each citizen."

The fault-line in the debate was between the members who defended the merchants and those who sought more radical economic justice. The former conceded, given the abnormal circumstances, to restrain the location of exchange, but they opposed a fixed maximum. For deputies of the later view, a maximum was necessary because, as Devars proclaimed, "it is up to the rich to come to the aide of the unfortunate"—but also because, it was argued, even in regions where grain was plentiful, speculation and appropriation was used to raise prices as a way "to make war to the Revolution."

In this context, Génissieu's proposal of the "echelle mobile" seemed to provide a way to safeguard the bouregois, capitalist, relations of production while still appeasing the masses with more controlled grain prices. "I ask for a mobile scale," said Génissieu, "since the right of the producer must not be infringed by seeking to relieve the indigent class. While seeking to prevent malevolence, we must not be unjust to the farmer."[38] The proposal stood in contrast to more

[38] Archives parlementaires de 1787 à 1860: recueil complet des débats législatifs et politiques des chambres françaises. pg.15.

menacing measures, such as that of Deputé Thirion to suppress large grain dealers in favor of smaller local ones. The masses, for their part, were overwhelmingly in favor of the maximum.[39] The Convention would go on to adopt a monthly decreasing maximum, the exact "quantum or degree" of which was to be determined by committee.

At this moment begin to align the apodicity of political quantification with a conception of the market as free from political arbitrary. This explains what might appear a paradox: the deputies, for instance Vigee, in favor of the maximum were against the rule that all transactions must occur at a defined marketplace. "We must never abandon" according to Vigee, "such an essential part of the political economy to the hazards of a market."[40] In other words, applying a maximum would supposedly annul the need for a common, monitored location of exchange.

Debates of the convention confirm one of Foucault's observations: The management of the political economy, achieved through the laws, often turns into an explicit effort to anticipate the play of actors. Not merely—no longer, Foucault would say—does one seek to rule, but to generate wellbeing through the

[39] Soboul, Albert. 1976. Problèmes paysans de la Révolution : 1789-1848 : études d'histoire révolutionnaire, Textes à l'appui : Série Histoire contemporaine. Paris: Maspero. Cf. Simmons, Dana. 2015. *Vital Minimum : Need, Science, and Politics in Modern France*. University of Chicago Press.
[40] Archives parlementaires de 1787 à 1860. pg.11

wise management of subjectivities. Still, this has little to do with liberalism or the market. Rather, if a "liberal" regime—which need denote nothing more than the politics of the incipient bourgeois society—can imagine economy to be autonomous, it is because of quantitative objectivity as a social practice.

After the fall of Napoleon, agriculture protested that it was being left at a disadvantage since grain was coming in from outside during the years of shortages, but they could not export during years when prices where higher. With the end of the war, the problem became more pronounced. In July 1814, the Restauration government authorized the exportation of grain. In part, the aim of the legislator was to keep the price of wheat similar to the price in Britain, but this proved difficult and was a source of perennial conflict. The mobile scale was stipulated then abolished on and off several times, from 1816 to 1885.[41] This was a period of constitutional, parliamentary monarchy, with approximately 200,000 electors under the restoration, and 30,000 under Louis-Philippe. Large proprietors and industrialist electors voted, by virtue of the cens, a system of suffrage based on a tax threshold.[42] The bourgeoisie was in power.

[41] Denais, Édouard. 1901. Université de Paris, and Faculté de droit et des sciences économiques. Université de Paris. Faculté de droit. Histoire de l'échelle mobile des céréales en France, par Édouard Denais,... Thèse pour le doctorat. Paris: L. Larose.
[42] Levasseur, Émile. 1900. Histoire des classes ouvrières et de l'industrie en France avant 1789. 2e édition (entièrement refondue) ed. Paris: A. Rousseau.

In 1848, the question of the mobile scale was once against debated. The infamous liberal statesman Adolphe Thiers came to its defense in the Assemblée Nationale. Some called for the abolition of all tariffs, calling for France to follow the example of Robert Peel in Britain—another symptom of the enduring fascination Britain inspired the French capitalist class. Thiers, although putatively a liberal, assured the mobile scale was necessary because agricultural production, unlike industry, could not achieve a "correction, in successive years, through internal competition."[43] Thiers was identifying one of the contradictions of exchange value. The sphere of exchange, often depicted as a mechanism of coordination, by which a society represents and acts on its productive forces, is more so a contradiction in motion. Concerning the policies of Peel, Thiers retorted: "Do you know what the men who honor Mr. Peel honor him for? As the chief of the aristocracy who said to the aristocracy and the royalty: We must make sacrifices. I conceive this in Britain, where the aristocracy only sustains itself by the sacrifices it cleverly makes." In France, Thiers concluded, there is no aristocracy, and no need to make such sacrifices.[44]

A recurring theme in the arguments was that the mobile scale served to eliminate legislative and local arbitrary.

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[43] Compte rendu des séances de l'Assemblée nationale législative. 28 mai 1849. Panckouck: Paris: 1851. pg.211.
[44] Ibid. pg.213.

In 1859, the minister of agriculture Casimir-Perier argued that England was in a different situation than that of France—Britain had benefited precisely from its protectionist measures within the imperial system. Britain, Casimir-Perier continued with an example, would never have allowed itself to become dependent on another nation for its coal or iron. Regulation was necessary, but it would have to achieve an impartial application. To this end, in the debates, de Montreuil insisted, "the mobile scale is of a nature to reassure the farmer against arbitrary, error, or interests other than those of agriculture."[45]

Having surveyed the way authorities of the royal state organized exchanged before the Revolution, the contrast brings the new function of quantification into high-relief. In the medieval period, the authorities at whichever level had as something of a specific obligation the self-sufficiency of their region in terms of grain. They acted to keep grain from leaving (which would have happened through exports), while allowing it to come in. Thus, according to the jurist Denais, "during the middle ages," the question was "much more simple for the legislator," unlike during the 19th century, when "the development of economic ideas has made understood the complexity of the problem." How so? The complexity in question, continues Denais, is that "there are present two interests, in appearance opposed, yet in fact linked indissolubly."

[45] Denais, pg.132.

[46] How were decisions about exports made prior? "Under Francois II, a bureau of eight commissaries was responsible for granting or refusing pass-ports authorizing the exports of grain [from the kingdom], depending on the state of the harvest." In practice, the decision to allow exports in certain years appears to have been motivated when producers were forced to sell grain so cheaply that they could not afford to pay the royal tax, the *taille*. Sovereign judgment and authority appeared, unconcealed.

The new system implied a transformation of relations at two levels. At the national level, once the tariffs and prices were set, this sphere of action was withdrawn for a certain time from further political decisions. The case-by-case decisions of the royal bureau of commissaries exemplify the personal relations of the Ancien Régime—personal in the sense that they required acquaintance and local knowledge. The échelle mobile was a way to control state officials dispersed out at the local level in different regions. The local authority of the measurers was thus greatly reduced. To be sure, the decisions concerning the level of the scales still drew on knowledge of conditions in each department, in each region, on a few regulating markets.

Below the sea-foam of parliamentary arguments was an architectonic shift: Before, traditional forms of authority had guaranteed the site of exchange, as a

[46] Denais, pg.3.

site of latent conflict. The rise of capitalism, of abstract labor, of the sphere of monetary exchange was an erosion of these traditional forms; a process often described. In this way, the conditions of abstract labor within a society produce a kind of anthropological under-determination, which was filled by the apodicticity of quantification. The ideal of impartiality preceded the market. Foucault produced an accurate but incomplete analysis by distinguishing between the market as site first of justice and then of veridiction. Accurate because the practice of economic liberalism rests precisely on rendering economic relations such that they are subjectively lived as "objective." In this sense, the problem came to be perceived as more one of truth than of justice. The "naturalism" detected by Foucault in liberalism is indeed there: it consists in, paradoxically, the way a sphere of necessity is wrested from the sphere of society. In other words, the conflicts produced by economic transformation were annulled through a substitution, a transfer of impartiality to the apparently neutral language of quantification.

The circulating numbers of the mobile scale become substitutes of politics. Just as the flow of data was important in creating the experience of a unified "labor market" for the weavers of 19th century France, the numbers of the tableau indicateur in some ways replace local politics—the market becomes sensible as a reality which, I emphasize, is just as imaginary as it is real. In this sense,

quantification—understood in the rich sense of social numbers—becomes a relation of production.

Behind the rise of political numbers is something deeper than parliamentary politics. The practices of quantification are practices of objectivity, are inseparable from the social structures in which they assume certain functions, the institutions of the state among these. These material and mental relations generate the subjective experience of two domains, the economic and the political. This is not to say that the economic removed from the sphere of the political a part of the social which was formerly political. Rather, the development of capitalism generated the political and the economic as two apparently independent entities through a process of mutual exclusion.

Chapter 4:

From Public Utility to the Rational Subject

Standard histories of economics identify Jean-Baptiste Say as the origin of a truly "modern" economic theory, and perhaps even a neoclassical one. Say came close to achieving a proper view of economics but, it is said, he fell short because he did not have a theory of prices founded on marginal utility. Such historical reconstructions tell us more about recent economists who emit them than about Say. It would not be until the 20th century that economists called "Say's Law" the principle that production creates its own demand—an idea which thus became Say's most remembered claim.

During the 19th century, however, Say was regarded as the founder of the "liberal school" in France, for he shared some of the liberal propensities of the physiocrats, while abandoning their idea that agricultural production was the ultimate source of wealth. He was also one of the foremost disseminators of Adam Smith's ideas in France. If his own theory of value differed from Smith's, Say also wrote of something like natural price determined by costs-of-production. An important innovation, however, was his theory that capital and land are also

productive, in addition to labor. This idea was particularly popular as a defense of the possessing classes: many French liberals would use it in his wake, and a similar idea is expressed in neoclassical economics as the "production function" to which various "factors" contribute, including labor. From Smith, Say took the celebration of merchants and its laissez-faire correlates. Published in 1803, Say's major work inaugurated the bourgeois century, but many of his polemics wre still aimed at finally eradicating all remnants of Ancient Regime impediments to capitalism. This determined the extent of Say's theorizing concerning the distinction between the economic and the political.

Given the lightness of Say's theorizing compared, for instance, to the British political economists, and his straightforward apologetics of the bourgeois order, it is hardly surprising that a few decades later Marxist commentators would refer to Say as inaugurating "vulgar economy." Such a qualification has meaning only when considering the observation that Say gave expression to views "in total harmony with the commonplace 'vulgar' ideas that reigned within entrepreneurial circles and amongst the general public, which confined itself to the superficial observation of economic phenomena," in the words of Isaac Rubin.[1] In what sense did Say merely express the appearance of social phenomena? To take a telling example, for Say the value of a product is an addition of the

[1] Rubin, Isaac. 1989 (1929). A History of Economic Thought. Pluto Press. p.301

productivity of land, wages, and capital, such that the cost of production determines the magnitude of value. Thus, Say makes no distinction between value and wealth (a distinction which both Smith and Ricardo made earlier, and which Marx radicalized into an immanent critique of the capitalist value-form itself).

Even more than the physiocrats before him, Say emphasized the harmony of producers and consumers in capitalism. This is one way to interpret his famous (and infamous) theory later called Say's Law, stating that overproduction is impossible because increased production increases demand.

While Say is often assumed to inaugurate a modern form of political economy, his writings are more reminiscent of the 18^{th} century, characterized as they are by polemics against the fetters on the free exercise and growth of capital. They also prolong the advocacy for the right of private property as central to the social order. Throughout, Say criticized the purely "philanthropic" arguments of his contemporaries. He wrote forcefully against Sismondi who wanted to hold employers responsible for the well-being of their workers, or against the opponents of slavery who claimed to prove that slavery was in fact more costly than wage labor. Against the former, he brandished the right to property, and condemned anything he perceived as state interference against this

right—which amounted, needless to say, to a defense of the domination of the possessing classes.

What matters for my argument is that the market as normative concept does not sit at the center of Say's reasoning, when it exists at all. The right to dispose of one's property and opposition to state involvement are more important. It is worth noting that Say was not even an unconditional advocate of laissez faire in the case of the grain market, and for the trade on subsistence goods more generally. He considered the market for grain to be different than for other goods, in part because he thought the availability of grain determined the growth of the population, but also because it would not be prudent for a country to draw its main means of subsistence from too far, to grow dependent on outside sources for subsistence. Say defended a system like the échelle mobile, where tariffs would be used to prevent or modulate aberrant prices. He wrote: "When the price of grain comes to exceed a certain fixed level, we would do well to prevent export, or at least to submit it to a rather strong tariff." To justify this, he continued:

> Laws prohibiting the import of grain to protect the interests of the farmer at the expense of the manufacturer are unfortunate laws, I concede it, but excessive taxes, debts, diplomacy, a court...weight on the farmer too...it is necessary to reestablish, by an abuse, the natural equilibrium broken by other abuses,

> otherwise all farmers would turn to artisans, and the existence of the social body would become too precarious.[2]

For the famous liberal, the state still had a regrettable but unavoidable role in establishing an inscrutable natural balance.

The measurement of the useful and its social conditions

For political economists prior to the 1820s, utility was synonymous with use value, qualitative more than quantitative. Some did write of an object or commodity being more or less useful, of magnitude, but the idea of quantifying utility was absent. Some authors did propose general principles, for example: more useful things tend to have a higher exchange value. Rarity was seen as a confounding factor; they recognized that a very useful thing could indeed be made at very low cost, with a correspondingly low exchange value. Still, until the mid-19th century the question of utility was not exclusively, not even primarily, a concern for political economy.

The Enlightenment celebrated the useful as moral value, opposed to the frivolity of the Old Regime and to the primacy of social hierarchy within it. "The useful circumscribes everything," wrote Diderot in 1754. Similarly, Rousseau

[2] Say, Jean-Baptiste. 1803. *Traité D'économie Politique, Ou Simple Exposition de la Manière dont se Forment, se distribuent et se Consomment les Richesses*. Paris: Deterville. P.135.

lauded the usefulness of the worker and the craftsman, their activities virtuous and conducive to good character, in contrast to the otiose and lazy estates. According to Antoine Picon, "for people of 18th century, whether philosophers or engineers, utility possessed foremost a moral signification."[3] For the members of the royal corps of engineers, the canals, roads, and bridges they were called to build were seen as facilitators of commerce, but also as ways for the king to project his magnificence, and to centralize France. For the engineers of the Ancient Regime, writes Picon, "the economies brought about by the realization of a project, and its later profitability were not really measured."[4]

To account for the passing away of this "monumental conception," Picon suggests two factors. The post-revolutionary parliamentary regimes brought state projects under more pluralistic and divergent scrutiny. After the Restauration, the budget for projects of the state *Corps des Ponts et Chaussees* had to be approved by vote. Second, much of this scrutiny came from liberals who often pushed against the control by the state of public works, and the discretion enjoyed by the state engineers over these matters. The British system was left up to private companies, but a distinct French system emerged: The state engineers

[3] Antoine Picon. 1992. "De l'utilité des travaux publics en France au XIXe siècle", Culture Technique, n° 26, p.122.
[4] Ibid., 126.

constructed and ran the projects, but funds came from capitalists.[5] Thus, the French rail system was funded largely with private funds—although it was up to the *Ponts* engineers to approve the projects and decide parameters such as the location.[6]

The critique of state control was inscribed in the logic of developing capital. For capital, any ownership by the state represented so many lost opportunities to continue to valorize itself. Driven by the progressive and sequential saturation of industries and the resulting tendential decline in the rate of profit, capital had to constantly find new fields in which to valorize. The liberals in the mold of Say still established the exclusion of the state based on a theory of property, not yet on anything resembling a rigorous theory on the grounds of superior utility. Say was fighting last century's battle. The liberals of the early 19th century represented a capitalism still moving towards fully realized subsumption—a condition asymptotically approached but never reached, in part due to the rise of a distinct and opposing class for-itself. The state apparatus was not fully reshaped in the service of capital. Contradictions within the state apparatus persisted. A consequence of this was criticism and disdain of the liberal political economists for the state *Ponts* engineers.

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[5] Etner, François. 1987. *Histoire du calcul économique en France*. Paris: Economica.
[6] Porter, Theodore M. 1995. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton University Press.

Still, the developing relations between industry, politics, and state engineers were not as simple as just portrayed in broad strokes. As we have seen, even Say did not exclude the usefulness of state action. Moreover, the idea of utility was one of *public* utility, firmly rooted in the ethos of service to the common good, an ethos central to the *esprit de corps* of the engineering school and to the Saint-Simonien sect in which many of the engineers took part. In 1814, the Council of the Ecole Polytechnique called on engineers to master "arithmetique sociale" which was to "evaluate the utility or inconvenience, whether local or general, of each enterprise."[7] The *Corps des Ponts et Chaussees* prided itself precisely, according to one of its engineers, L.M.H. Navier, on selecting projects which served the public interest, rather than merely projects which would return a profit, which was often the case of British roads and canals.[8] Navier was also one of the first to propose a method of calculation for public utility.

These facts aid greatly an understanding of the conditions in which quantitative measured of utility. To make a minimal claim, post-revolutionary France was more susceptible to debates about the usefulness of any particular project, rail line, canal, or the like. More precisely, decisions about these projects

[7] Porter, Theodore. 1991. "Objectivity and Authority: How French Engineers Reduced Public Utility to Numbers." *Poetics Today*, Vol. 12 , p.256.
[8] Ibid.

were mediated less through personal relations or clienteleism, had to take place through intermediary social bodies. Under these conditions, the power of the state confronts the problems of social action, in a way analogous and related to the situation of the échelle mobile and the grain markets. These social conditions, the existence of the state in the first place, but also the modalities in which it acted, constituted the conditions of possibility to ask what is the public utility of a given project.

Exchange value and utility: confrontation and convergence

The technical journals of the *Ponts* engineers periodically featured debates on the calculation of utility. Testimony to their concern for the new fashions in political economy, many took as starting point the views of J-B Say on utility. Say considered exchange value the expression of utility, yet used the production and maintenance costs of a given project to calculate the monetary expression of that utility. Jules Dupuit considered this to be contradictory, resulting in an erroneous measure of utility.

Citing engineer Guillaume Comoy's use of Say's method to evaluate the public benefits of canals in 1847, Dupuit argued this method of calculation could yield absurd results. Comoy measured the utility of a canal by dividing the

annual cost of maintenance and the reimbursement of construction by the number of tons the canal would allow to transport, giving a "value of the unit of wealth produced by the canal." Dupuit pointed out that if an able engineer lowered construction or maintenance costs through more efficient methods, fewer wealth-units would supposedly be produced, by virtue of those lower costs. In this calculation, the denominator remains the same number of shipped tons as before, but the numerator is now smaller, yielding a smaller wealth-unit per ton.[9]

In his argument with fellow engineer Louis Bordas, Dupuit defended the ideas he had original published in a 1844 article on public utility in the *Annals of the Ponts et Chaussees*. The center of the debate was defining utility itself. Bordas proposed that all things satisfying needs have utility, but only those that can be exchanged for other commodities have value. For him, value can be measured, but utility cannot. Here he was again following J-B Say, who wrote that the study of political economy had to be restrained to those useful things produced through human modification—which for him essentially meant commodities. Dupuit's idea was that each individual expects a different amount of utility, a quantity thereby determining how much they are disposed to

[9] Dupuit, Jules. 1849. "De l'influence des péages sur l'utilité des voies de communication." *Annales des Ponts et Chaussées*. I, XVII; Bordas, Louis. 1847,"De la mesure de l'utilité des travaux publics," Annales des Ponts et Chaussées II, XIII; Dupuit, Jules. 1933. *De L'utilité Et De Sa Mesure. Écrits Choisis Et Republiés*. Torino (Italie), impr. Pozzo Fratelli.

consume. Bordas objected to Dupuit's notion of utility, considered that it amounted to excluding it from political economy. Bordas, again using J-B Say as magister, held that since commodities present the same utility for all, if some no longer purchase a given commodity when the price rises, it is simply because they cannot.

Replying to Bordas, Dupuit deployed arguments to amalgamate exchange value and utility, to make *the sphere of exchange the entity telling utility.* Against Bordas, who had written "utility is not susceptible to be measured," Dupuit cited Destutt de Tracy, who had adapted the sensualist ideas of Helvetius to the project of forging what he called a new "ideology" for the modern age, for the new bourgeois civilization. For Destutt de Tracy the whole of society was a series of exchanges—a view in keeping with the sensualist idea that language, vision, commerce, are all based on exchange. Specifically, Dupuit cited this statement from Destutt de Tracy:

> ...the real or supposed measure of utility of a thing is the vivacity with which it is generally desired. Still, how can something so inappreciable as the vivacity of our desires be fixed? We have nonetheless a very sure way of doing so: observing the sacrifices determined by these desires.[10]

[10] Ibid.

Reading the sections of Destutt de Tracy's *Treatise of Political Economy*, from which Dupuit takes this citation, it is clear that he did not necessarily associate this principle with the marketplace. Before this general principle of human existence even reached the workings of a political economy, it was mediated by human activity. Soon after this passage, Destutt de Tracy proposes that what gives commodities their value is not inherent, but determined by the quantity of work needed in the process of their "appropriation." He did not view these two assertions as contradictory, since the labor-time itself represented a sacrifice, proportioned to a certain desire. Destutt de Tracy thus subsumed a quasi-classical labor theory of value under his principle of pleasures and pains.[11] This reveals the extent to which Dupuit's move was novel; co-opting liberal thinkers in order to turn monetary exchange into a measure of utility. Contrary to hasty summaries of Dupuit's work, this was however not yet *the market*.

Dupuit's theory allowed him to reason using tabular representations. Starting from the assumptions that some individuals are willing to pay more to, say, use a bridge, Dupuit wrote a "law of consumption." He proposed that each good has its own law of consumption, a reality that cannot be derived, but must be observed; still, the general behaviors of these laws appeared to him relatively

[11] Destutt de Tracy, Antoine-Louis-Claude. 1822. *Traité D'économie Politique,* Paris: Mmes Bouguet et Lévi.

consistent and could be grasped through this tabular reason. Using his tabulations of utility, Dupuit noted that different tolls produced very different "distributions" of the utility from the bridge. He considered that the increased tolls resulted in decreased crossing, meaning a loss of utility for consumers, but at one point, an equal increase in income for the owner of the bridge. This income from tolls he also called "utility"—that of the producer as opposed to the consumers.

On these grounds, Dupuit explained that these works used by the citizenry would provide more utility if owned by the state: Private companies are motivated by profit, whereas the state can satisfy itself with a smaller fixed sum, enough to pay off costs and maintenance. Of the two solution producing the same total utility, private companies will chose the one giving them a larger share of the utility, while the state could choose the other toll rate. It is perhaps an irony; the engineer which neoclassical economists see as their precursor devised something like marginal analysis in order to defend state power from radical liberals. To be sure, during the course of his life, Dupuit became more closely associated with the liberal groups. Still, he continued to defend the view that monopolistic public works should be held by the state.[12]

[12] Etner, op.cit.

These later developments in his career may have led to the mistaken interpretation that the whole of Dupuit's calculative efforts were motivated at demonstrating the political ideas of the liberals. A careful reading of Dupuit's later writings on political economy shows they are often wholly divorced from the calculative methods of his studies on public works. Some economists, rummaging through the past in a quixotic search for precursors, assessing past theories by the level of congruence with modern neoclassical economics, have imagined Dupuit was developing a theory of "market valuation of goods and services...economic exchange as a process of welfare maximization."[13] My objection is not the simplistic one that these concepts did not yet exist; rather that it is pure projection to think these engineers were even trying to develop these concepts. Was Dupuit interested in illustrating a market at all? Only when considering that he imagined the way individuals might go about using the public works. The aim of his effort was to say something about the distribution of publicly provided utility, and the monetary quantities, the prices were turned into indicators of it. Of course, a sphere of monetary exchange must exist for observation in order for these kinds of theories to be expressed, but the theories are not representations of this sphere, nor were they even intended to be.

[13] Ekelund, Robert B., and Robert F. Hébert. 1999. *Secret origins of modern microeconomics : Dupuit and the engineers*. Chicago: University of Chicago Press, p.90.

The lesson is that this mode of quantification was not an empirical description of markets, but rather brought about by the role of the state exposed to newly released political tensions. The creation of the *Annales des Ponts et Chaussées* in 1831 was motivated precisely to answer the critiques of the political economists. Liberal political economists would continue to criticize the engineers for their use of mathematics, accusing Dupuit of "dogmatism" and of wanting to "treat economy like mathematics."[14] The superiority of quantitative arguments as a tool against arbitrary was a frequent justification by the engineers. For instance, Dupuit suggested his tabular reasoning on utility had the advantage of not leaving the "appreciation" of public utility "to the arbitrary of the one who is calculating," which was an "inadmissible" part of the definition proposed by Bordas.[15]

Individual subjectivity as the new objectivity

By the 1870s, the old continent was haunted by increasingly powerful worker organizations and socialist parties. The revolts and revolutions of 1848, the Paris Commune in 1871, had a traumatic effect on the intellectuals of capital and their liberal and conservative avatars. These developments conditioned an

[14] Etner, 119.
[15] Jules, Dupuit. *De L'Utilité et de sa Mesure*. p.125.

intellectual response throughout Europe, as evidenced by the unanimous declarations of bourgeois political economists, who proclaimed their science had to be rebuild on new foundations so as to rid it of any socialist implications.

The extent to which there is unity to what was retrospectively called the "marginal revolution" is now an old and extensively debated question. Today most historians seem to agree that the usually cited protagonists did not have so much in common, not even the same concept of what would later be called marginal utility, nor the perception of participating in a common movement. This does not mean, however, that these protagonists were not acting within a similar historical and social moment. John Henry cites four reasons for the rise of these new species of political economy: The growth of workers organizations, the Paris Commune, the cyclical downturn from 1873 to the mid 1890s then known as the "Great Depression," and the publication of Marx's Capital in 1867.[16] The author of Capital, however, was almost never cited, if even read by these economists, who frequently directed their express criticism towards Ricardo (by no means a socialist agitator), or in the case of Walras, against Proudhon and Sismondi.

To designate this as a reactionary search for new foundations is not polemical; it names with etymological exactitude a reaction to the developments

[16] Henry, John F. *The making of neoclassical economics*. Boston: Unwin Hyman, 1990. 177.

of class antagonisms by certain social strata. The imperious necessity was to place the origin of value elsewhere than labor. With the generalization of the sphere of monetary exchange, and specifically wage labor, which entails the generation of a large proletariat class, the sphere of monetary exchange becomes the general site of social validation. Through the exchange of equivalents, social conflict appears to be annulled within this sphere. Labor power, too, appears as a commodity. The mechanisms generating the value in question—exchange value—can consequently be the focal point of any discourse justifying the social order. Everything happens as if labor power is traded for an equivalent—this is one of the major contradictions of the value form within capitalism, that something not produced as a commodity must take the form of exchange value, as if it is a commodity. The striking anthropological fact is that within this social formation human production is mediated through the value form, through abstract labor. This relation is political in the most intense sense of the word, expressing the confrontation of human subjectivities, which are not inanimate commodities. These were the questions lurking behind the intellectual production of the "marginalist reaction."

In Austria, Karl Menger's solution was to situate the veracity of exchange value by founding it in individual subjectivity. Menger defined economic goods as those useful and available in limited quantities. In his description, Menger

replaced real social relations with imagined ones, so that economic life is not governed by real flows of money, by value in motion, but by satisfaction, or lack thereof, of subjectively lived, and incommensurable, wants. On these grounds, he posited trans-historical, "economizing men" who needed the possibility of economic exchange in order to choose in accordance to their needs. This explains why Menger and his acolytes so adamantly opposed the "historical" method in political economy, even if the historical school could hardly be said to constitute a radical socialist threat.

According to Menger, the centrality of so-called "subjective value" dispelled the socialist questions. Menger critized Rodbertus for what he called the "erroneous assumption that the entire result of a production process must be regarded as the product of labor." To the contrary, for him "labor services are only one of the factors of the production process...Capitalists and landowners do not, therefore, live on what they take away from laborers, but upon the services of their land and capital which have value."[17] Continuing on the question of labor, he held that "...the price of actual labor services are governed, like the prices of other goods, by their values. But their values are governed, as was

[17] Menger, Carl. 1981 [1871]. *Principles of economics*. New York: New York University Press, 168.

shown, by the magnitude of importance of the satisfaction that would have to remain unsatisfied if we were unable to command the labor services."[18]

Menger concludes a section of his Principles of Economics by addressing "a lover of mankind" who finds it deplorable that "a piece of land often provides the owner a higher income for a given period of time than the income received by a laborer for the most strenuous activity during the same period." As well intentioned as those sentiments may be, "the cause of this is not immoral, but simply that the satisfaction of more important human needs depends upon the services of the given amount of capital or piece of land than upon the services of the laborer. The agitation of those who would like to see society allot a larger share of the available consumption goods to laborers than at present really constitutes, therefore, a demand for nothing else than paying labor above its value."[19] Menger's account had little to do with a market as conceived by Walras and by later neoclassical theory. It might be reasonably assumed that his theory is not just that the individuals but their aggregate determined the prices, something like what is today called a "market mechanism." Logically, this could be seen as a kind of marginalism. However, as Philip Mirowski emphasizes, Menger rejected "two basic pillars" of the theory of Walras and the marginalists:

[18] Ibid, 171.
[19] Ibid.

"the law of one price, which states that all generic goods in a market (however defined) must trade at the same price in equilibrium...and the concept that traded goods in some sense are related as equivalents in equilibrium."[20] Moreover, Menger was generally hostile to the use of quantification, and had no use for mathematical formalism.

Menger consecrated the subjectivity of the economizing individual as economizing subject; the calculating individual rather than the calculating market. Theories of values, again typically grouping the aforementioned protagonists, have often followed the dichotomy proposed by Werner Sombart, opposing "subjective" and "objective" value theories. By this view, the theories of the classics, Ricardo, and Marx use "objective value," while marginalists and neoclassical economist base value on subjectivity. This schema has problems. As we have seen, Marx uses a richer, tripartite concept of value (use value, economic value, exchange value); he did posited economic value (not exchange value) as an objective reality imposing itself on capitalist societies by virtue of the social and class relations particular to its mode of production. How difficult it is for modern economists to understand Marx's was a critical theory of *society*, rather than merely a microeconomic theory of prices.

[20]Mirowski. Philip. 1984. "Physics and the 'Marginalist Revolution." *Cambridge Journal of Economics*. Vol 8, 371.

Still, the supposedly subjective value theories of the late 19th century economic reaction might have just displaced the *locus* of objectivity. The search for foundations to economic discourse now subordinated the individual subjectivity to natural necessity (in the form of human psychology and physiology). This is particularly clear in the case of William Jevons. Not satisfied to root his marginalism in individual subjectivity, Jevons turned to the burgeoning science of psychophysiology. As Harro Maas demonstrates, Jevons referred to the physiological experiments he conducted as "providing an example of how insight might be gained in the 'physical groundwork' of political economy."[21] Jevons had developed his theory inspired by Bentham's hedonic calculus, but he wanted to found the postulated balancing of pleasures and pains in the newest sciences. The psychophysiologists Alexander Bain drew a direct parallel between "man and machine." At the same time, this comparison between the work of machines and that of humans was also important to Helmholtz, as Norton Wise has shown.[22]

Jevons hoped to develop this insight by conducting several experiments on the rate of exhaustion of muscular force exerted by a worker, for example, while

[21] Harro Maas. 2005. "Jevons, Mill and the Private Laboratory of the Mind." The Manchester School Vol. 73 No. 5, p.621; Harro Maas. 2005. William Stanley Jevons and the Making of Modern Economics, Cambridge University Press.
[22] Wise, M. N. 1989, "Work and Waste—Political Economy and Natural Philosophy in Nineteenth Century Britain." *History of Science*, Vol. 27, No. 3.

lifting a weight with a pulley. He published the results of these experiments in the journal Nature in 1870, suggesting the curves representing the fatigue of workers could illustrate the laws underpinning the basic principles of political economy.[23] His project was also to appropriate political economy from the likes of J-S Mill, who still viewed it as a moral science. For Mill, the distinction between sciences of mind and matter roughly mapped onto the moral and natural sciences, which justified his deriving principles of political economy from introspection. Jevons opposed this, and hoped psychophysiology would abolish the first dichotomy. Jevons disputed that exact laws could be discovered—this was another point of contention with Mill—but he did imply political economy could be rooted in the empirically observable functional laws, to be distinguished from exact mathematical laws.

Like Menger, Jevons presented his theory as discrediting socialist organizations and providing scientific evidence against virtually any regulations of the activities of capitalist firms. He described "trade unions and strikes" as "the best example...of the evils and disasters which can accompany progress," attributed participation in them to people who "do not understand a true political economy" and "make a false one of their own." His writings were

[23] Jevons, W. S. 1870. "On the Natural Laws of Muscular Exertion." *Nature*. Vol. 2, pp. 158–160.

intended to fulfill "the imperative need that no one, neither man nor woman, should grow up without some comprehension of the science which we are going to study." Jevons concluded that if "the labourer gets so little at present...it is due in great part to the laws of nature." [24]

Walras as a theorist of market objectivity

A century after the physiocrats proposed government according to nature, Walras attempted to establish a new division between the political and the economic, this time substituting for politics not the naturality of commerce but the market as most rational human creation. The discourse of physiocracy appealed to nature, but in practice the liberalism of the new bourgeois regimes meant tools of quantification and calculation came to serve as substitutes of politics, alienating authority seemingly away from humans.

In his effort to establish a "pure political economy," Walras began by criticizing Adam Smith's venerable definition of political economy. For Smith, political economy was a form of knowledge for the "legislator and statesman" with the aim of "producing for the people abundant subsistence or revenue," and "as

[24] See Henry, 189-191.

second object, to furnish the state with sufficient revenue for its public services."[25] Walras did not consider this an appropriate "object for a science, properly speaking," because Smith's definition did not distinguish the usefulness of the knowledge (*savoir*) from the knowledge itself, which should be prior to use. He gave an example: geometry may be useful for carpentry, stone cutting, building houses, or navigation, but "neither the carpenter, mason, architect, nor navigator, even if they theorize their activity, are real scientists (*savants*) or do science in the true sense of the word."[26] If political economy is to be a real science, Walras concludes, it must "pursue and capture purely scientific truths" before even trying to answer the two tasks set out by Smith.

Next, he proposed yet another distinction: Of the two aims set by Smith, the first—to furnish abundant revenue for the people—is not a question of "justice," but of "interests." On the other hand, how the state brings in sufficient revenue is a question of justice, not of interests: "Thus, procuring the people abundant revenue is an act of utility, and furnishing the state sufficient revenue is an act of equity...Utility and Justice are two consideration of highly different

[25] Walras, Léon. 1988. *Éléments d'économie politique pure ou théorie de la richesse sociale éd. par Pierre Dockès... [et al.] [sous la dir. de] Claude Mouchot, Oeuvres économiques complètes / Auguste et Léon Walras*. Paris: Economica, 26.
[26] Ibid. 27.

order."[27] The aforementioned distinction between a pure science of wealth and its application maps onto the opposition between interests and utility in such a way that the pure science of wealth could be applied not to questions of justice, but only to the production of utility. In a subtle movement, Walras could thus posit the management of the economy was not a question of justice, but the object of application of a pure science.

J-B Say was the next "illustrious name" criticized by Walras. In his 1803 treatise, Say had described political economy as an account of "ways through which wealth is formed, distributed, and exchanged." Walras criticized Say's position as a "naturalism" inherited from the physiocrats. He complained that Say and his liberal followers attributed the economic order to a natural order in order to oppose "socialist ideas" as un-natural, in the same way the physiocrats had opposed feudal and absolutists structures. Humans are unlike bees, Walras asserted, perhaps in reference to Mandeville's *Fable of the Bees*, because "Man is a being endowed with reason and liberty, capable of initiative and progress."[28] While all "economic forms" are "artificial," the more recent economic "combinations" are superior to the feudal system, absolutism, or slavery, "precisely not as more natural" but "...as conforming to interest and justice." And

[27] Ibid. 29.
[28] Ibid. 31.

this realm of interest, for Walras, is the one in which action must aim to enhance utility. Reading Walras, it should be clear, overtly constructivist forms of liberalism preceded the neoliberalism of the 1930s. In this sense, liberalism has always been neoliberal.

On these grounds, Walras proceeds to further distinguish science, art, and morality ("*la morale*"): what ought to be is the subject of morality, while what must be is the aim of art or science. A science of political economy, he emphasizes again, can only proceed "from the point of view of utility," while morality governs what must be from the point of view of justice. This distinction seeks an absolute separation of the sphere of circulation from social production. Already in his critique of political Economy of 1859, Marx reproached bourgeois political economy for divorcing the sphere of circulation from the sphere of production, yet in the 1870s Walras pushed such a divorce even further, establishing this sphere of circulation as the normative locus of all economic activity.

With these gestures as the basis of a pure economics, Walras was certain he could demonstrate the superiority of the capitalist system, which he equated with a nearly all-encompassing market system of monetary exchange. The distinctions set out are crucial to the position he wishes the market to occupy.

Walras calls "social wealth" all things that are rare, which for him means they are useful but limited. Thus, Walras does not include all use values in social wealth, only those that can be and have been appropriated. As possible dimensions of social wealth, Walras distinguishes exchange value, industry, property, and implies that these must be studied separately. By excluding from consideration the question of property apriori, it becomes impossible to imagine that the relations of appropriation could take any different form from the individualistic capitalist ones he postulates. The capitalist property relations are the hidden premise of "pure economics."

Wheat has a determinate value in a certain circumstance, says Walras, because it is "more or less rare" in a certain circumstance, "that is to say, more or less useful and more or less limited in quantity."[29] Walras compares these forces producing the "natural fact" of price to the physical force of gravity, even making explicit reference, to the *Novum Organum* of Francis Bacon. The major innovation is that value and price become interchangeable; there is nothing more to value than price, and the price is a reality of the market, of the general equilibrium—a claim of major political importance in his arguments. Walras even says that it would be possible to "eliminate value by eliminating exchange."[30]

[29] Ibid. 50.
[30] Ibid. 51.

Walras writes that "rarity is personal or subjective; exchange value is real or objective."[31] Yet the two are equivalent in a general system of markets at equilibrium. Walras then asserts that for several commodities the same principles apply as for his demonstration of two commodities—all that needs to be known are the equations of utility. The equilibrium is by definition the point where exchange of goods and money is taking place at their utilities. The exchanging parties become mere empty vessels of the market order. Depending, on which variables are considered unknowns within the system of equations, the content of the utility curves can just as well be determined by all the other relations in the general equilibrium of markets.

Walras defended the opinion, unconventional for a bourgeois liberal of his time, that "land and rents should be object of collective property," by which he meant owned by the state. In his view, individuals should "own" only their personal faculties, and wages from these. One interpretation might view this as the necessity of developing capitalism to expropriate the remains of a landed artistocracy. Let us leave this question aside; rather of interest is how Walras used market calculations to justify the price at which the land would buy the land, and also to calculate the rate the state would continue to charge tenants and pay former landowners. For Walras did not imagine a simple expropriation,

[31] Ibid. 145.

instead turning current landowners into holders of titles to a certain prorated payment from the state. The project, aside from being highly favorably to the social strata he favored, might be described as a reformist bourgeois idea.

Since Walras believed land was just another factor of production, he thought that the rent on land would do away with any deductions on the economic value produced by labor. He thought the weight of taxes on the working class was the main source of the social question. He believed that by doing away with taxes, he could solve the social question—not realizing that the value collected from land-rent would ultimately still come from surplus-labor. "The social revolution," he wrote with temerity, will turn out to require nothing more than "an operation of the treasury." From J-S Mill, Walras appears to keep the idea that this would allow capital to be invested in the various branches of production without taxes interfering with the decision.[32] Walras proposed that the state could purchase the land with a massive loan, which it would pay off gradually. When the loan was finally paid off, the state could fund its necessary activities without resort to taxes. The political economist Gossen had proposed a similar scheme in Prussia in the 1950s, (to which Walras makes reference). This left two major problems: Since Walras did not believe landowners could be

[32] Misaki, K. 1999. "Walras on General Equilibrium in a Progressive Economy." *Revue Européenne Des Sciences Sociales,* 37 (116).

expropriated without compensation, at what price should the land be purchased? Among the facts to be considered in answering such a controversial question would be the extent to which they would forfeit any income from the potential increase in rents in the future. Second, could the purchase be paid off by rents the state would collect from the land?

Walras proposed to mathematically establish what he calls the "normal price" of land. To do this, he made reference to his Pure Political Economy, using his system of equations, in a "state of general equilibrium of production and exchange." In this state, the price of land was determined in the following way:

> [...] i being the rate of net income, determined by the relations of the price of sale of the profits of mobile capital to the income of those capitals, in the state of general equilibrium of production and exchange, pt, pt', pt" ...being the price of the rents from lands (T) (T') (T")...the current prices of these lands, considered independently from all capitals, fixe or circulating, associated with these, Pt, Pt', Pt''... are determined by the system of equations
>
> Pt=pt/i, Pt'=pt'/i, Pt"=pt"/i

Walras modified these equations to produce a geometric progression, reflecting the condition of what he called a "progressive economy." The assertion that the economy of France was in a progressive state, essentially a state of expansion could be called an empirical claim, but like all empirical claims, relied on his view

of market-equilibrium. If scarcity is thought to be the cause of value, it follows from the model of Walras that as population increases and capital accumulates (the conditions of a progressive economy), salaries will remain the same, the price of interest will decrease, yet the values of land and rent will increase. After considerable mathematical development, Walras was able to show not only what should calculative formula should stipulate the payment of land, but also that his scheme was indeed possible, because the state would eventually pay off it's investment.[33]

What is important in this example is how Walras was able not only to postulate the independence of economic laws, with an implicit analogy to physical laws, but unlike the liberal political economists of his time his expressed those laws in mathematic axioms. It is not enough, however, to interpret this as the application of physics to the social world. Why was an application opportune at this particular moment? What Walras did was apply quantitative objective of the kind developed by the *Ponts* engineers in such a way to it totality excluded the action of the engineers or economists themselves. Yet this figure of authority, which Walras tried to extinguish and export into the process of the market itself, persists in the figure of the "commissaire-priseur" who presides over the market,

[33] Walras, Léon. 1896. Études d'économie sociale; Théorie de la répartition de la richesse sociale. Lausanne: F. Rouge.

and sets the prices to begin with. Interestingly, it has been shown that by the particularities of the price-setting process described by Walras, the original prices set by this appraiser-auctioneer may determine the prices at equilibrium. It seems Walras was not able to fully exclude this element of foundational judgment in the functioning of the market.[34]

The question is not whether Walras expresses a utopia with his idealized model of market equilibrium, as one line of controversy would have it. The point of Walras' static model was, among other things, to provide solutions underpinning political interventions into the "disequilibrium" of reality. General equilibrium is "the Market"; it speaks for Walras, or more specifically, it generates apodictic statements. This relies on the ontological primacy of the mathematical model, but also on the social dimension of mathematics.

The politics of general equilibrium

As Ted Porter observes, while the Ponts engineers engaged in a quantitative discourse on public utility, their decisions were never subordinated to standardized formulas, nor did political powers ever demand numbers as pivotal factor for a given decision. Porter attributes this to the social authority commanded by the elite engineers produced by France's elite Ecole

[34] Guerrien, Bernard. 1985. *La Théorie néo-classique bilan et perspectives du modèle d'équilibre général*. Paris: Economica.

Polytechnique. Not only did their social authority and disinterested ethos permit them to exercise, socially speaking, personal judgment anchored in expertise, the *Ponts et Chaussees* also existed as an institutional structure relatively shielded from direct political challenges. Porter contrasts this security to the institutional weakness of the U.S. Army Corps of Engineers, a situation which he shows can explain their recourse to standardized cost-benefit calculations.[35]

In the same way, the adversarial nature of the U.S. courts system, and the relative weakness of economic authority provided the conditions for the idea of the market as a calculative system providing commanding figures. Even under the pressures wrought by the development of capital, under the conditions of 19th century France, the distinction between the economic and the political—the defining condition of what has been called liberalism—could not fully realize itself.

As modern economists tell history, their science only reached maturity with the totally mathematical general equilibrium theorized by Leon Walras. It might seem surprising that this development would take place in France, but not when Walras is read as diverting the calculative discourse on public utility, radicalizing it against the political economists and the engineers. Walras

[35] Porter, Theodore M. 1995. *Trust in numbers: the pursuit of objectivity in science and public life*. Princeton, N.J.: Princeton University Press.

benefited from the French mathematical tradition, even if he did not integrate the dominant institutions such as the Ecole Polytechnique, as he had hoped in his youth.[36] Walras never secured a university chair in political economy, nor did his work enjoy wide popularity in France during his life—only by emigrating to Switzerland did he find a permanent position. In addition to his rare conjunction of liberal politics and training in mathematics, these factors over-determined his dual critique of both the liberals and the engineers, which he claimed to outdo within their own disciplines.

Walras radicalized liberalism by using mathematics to posit the market. Walras positioned himself against both the utopian socialists and those he considered non-scientific liberals. His vision of political economy was in the lineage of the liberals such as Say, Smith and his father Auguste Walras, but they too he found ineffective in their critiques of socialism. The liberal political economists, as we have seen, were generally hostile to the use of mathematics. On these grounds they criticized the kinds of calculations used by the engineers, especially those who had the temerity to write on matters of political economy, such as Cournot or Dupuit. At the same time, the liberal school formed a relatively closed community, built on a system of patronage around a few

[36] Dumez, Hervé. 1985. *L'économiste, la science et le pouvoir le cas Walras*. Paris: Presses Universitaires de France.

university chairs. Walras decried the "monopoly" on university teaching held by liberals who he considered facile ideologues rather than serious scientists. He complained that neither "government ministers" nor the "College de France or institutes" name professors, who were instead chosen by the retiring faculty.[37] According to Annie Vinokur, during the 19th century, "Dupuit, Cournot, and Marx...remained totally unknown" while a group of economists, Rossi, Baudrillart, and Chevalier most notably, remained "in the limelight" through several different regimes.[38]

Throughout his writings, Walras reproaches the liberal political economists for centering their system around the right to property without anchoring this right in anything more than a moral principle; instead, he sought a firm "scientific" foundation for the bourgeois social organization.

Walras also wanted to reject what he called the "sects" gravitating around the elite engineering schools. Without explicitly naming them, he undoubtedly had in mind the Saint-Simonians, who had the post-revolutionary project of founding a new "industrial religion." Membership in this sect was widespread, virtually requisite in the aforementioned elite schools. Robert Carlisle describes

[37] Potier, Jean-Pierre. 2012. "Léon Walras, un économiste socialiste liberal." *HAL*, 6.
[38] Vinokur, Annie. 1986. "Political Economy between Faith and Works; Saint-Simonism and the Case of Michel Chevalier". *Oekonomia*. Presses Universitaires de Grenoble. p. 179.

the Saint-Simonians as "bourgeois radicals whose radicalism was directed at the conversion, but not the destruction, of the bourgeoisie."[39] In his Industrialist's Catechism of 1823, Claude-Henri de Saint-Simon himself asserted that the best way to satisfy the political situation was to "charge the most important industrialists with managing the public wealth. For the most important industrialists are the most interested in maintaining tranquility. They are the most interested by savings in public spending. They are also the most interested by the limitation of arbitrary."[40]

They professed class harmony, without fundamentally transforming social relations, and they worshipped the figures of the industrialist and the engineer, a rather confortable attitude given their place in the division of labor. For Vinokur, Saint-Simonian ideas "could meet the ideological needs of 'socialists' and 'liberals' alike."[41]

Major figures in the movement like Michel Chevalier seemed to move effortlessly during their careers from allegiance from the former to the latter, admittedly allowing them to stay abreast the changing regimes. Aside from

[39] Robert Carlisle. 1968. "Saint-Simonian Radicalism: A Definition and a Direction." *French Historical Studies*. Vol. 5, No. 4 , p. 437.
[40] Saint-Simon, Claude-Henri de. 2013. *Oeuvres complètes introduction, notes et commentaires par Juliette Grange, Pierre Musso, Philippe Régnier et Franck Yonnet*, *Quadrige*. Paris: Puf. 2878.
[41] Vinokur, 179.

forming a closed community of which Walras was not a part, Walras objected to their organicist vision of society. Whereas the Saint-Simonians worshiped industry, tied human progress to the development of the forces of machines, their vision has been described as romantic. They could not imagine salvation from a deductive science of economy, but precisely from a blend of technological life within human existence.[42] Against this, Walras went to great length to dissociate political economy from the technological practice of industry.

The constructivism of Walras is consistent with the intellectual tradition of France: The existence and activity of the state remains central, making all the more important to subordinate that state to the "laws" of the market. Expressing these laws as mathematical laws was powerful within that tradition. Still, the mathematization of economic thought must be distinguished in certain respects from quantification itself. Quantification does not necessarily imply the subordination of those numbers to the calculative rules of a mathematical discipline. As Mirowski argues, the forms of mathematics were alien to political economy, borrowing from physics.

[42] On the romantic worldview of the Saint-Simonians, see: Tresch, John. 2012. *The Romantic Machine : Utopian Science and Technology after Napoleon*. Chicago ; London: The University of Chicago Press.
Cf. Walch, Jean. 1975. *Michel Chevalier, économiste saint-simonien 1806-1879*, *Bibliothèque d'histoire de la philosophie*. Paris: J. Vrin.

In spite of appearance, the social quantification of the mobile scales, and the more abstract formulae of Walras' general equilibrium share the same fundamental impulse. The language of numbers exacts a strict discipline. The instances described above have as impulse the exclusion of subjectivity in a particular sphere of social life. To be sure, Walras only achieved this intellectually. Yes, social objectivity can take other forms. Nonetheless, it would be mistaken to attribute the case at hand merely to a rhetorical or contingent discursive force of numbers. In their social existence as social technologies, they have features without which they would cease to be these very technologies. The feature I have been referring to, the most important, is their apodicticity. Walras formulas for general equilibrium are political arguments before they are models, not that the two are exclusive.

The tensions between economic theorists such as Walras and the institutionally powerful Saint-Simonians, was a tension between the remains of a Colbertist tradition and opposite to it, economic liberalism as an expression of the growing power of capital. The latter constituted a real material pressure positing the constant need for new ways to valorize capital. For it, state projects and state ownership constituted so many lost opportunities for private investment. The Colbertist element as an opponent to the liberal school eroded through the middle decades of the 19th century century. Take for example Michel

Chevalier's embrace of free trade and of the bourgeois Louis-Phillipe government. The embrace of free trade did not exclude his grand vision of planification.

Walras' ideas were aimed precisely at the French Saint-Simoniens, including their liberal ideas. It is not surprising, then, that he did not enjoy much popularity in France during his lifetime, remaining in "exile" in Switzerland. Walras had a duel legacy. His ideas had perhaps their greatest circulation in Britain and a bit later in the United States. At the same time, Walras seems to have succeeded in one of his stated goals, to set the basis for a new branch of mathematics.

THE ENCLOSURES OF THE SOCIAL SCIENCES, AND THEIR DISTINCTION BETWEEN THE ECONOMIC AND THE POLITICAL

In a memorable formulation, George Lukacs compared the disciplinary division of the social sciences to a bureaucracy "which solves awkward questions by perpetually passing the relevant documents from one office to another, with none of them pronouncing itself competent to make an objective decision."[43] For Lukacs, German sociology of the Imperial period was avoiding foremost the social question. There is much to be said for his interpretation that the original task of sociology had been to assert the "progressive character of bourgeois society and defend it, ideologically, against feudal reaction and socialism alike." The

[43] Lukács, György. 1980 [1962]. *The Destruction of Reason*. London: Merlin. 587.

mounting impossibility of this task in later capitalism explains, in his view, the evolution of sociology, like economics, into specialized disciplines. Lukacs directed much of his ire specifically at Max Weber, whose empty formalism he saw as yet another way to blind the scientific study of society from the objective contradictions determining the real movement of that society.

-Weber's view of economic rationality was considerably indebted to the vision of "pure economy" developed by Walras. The posterity of Walras' ideas can be understood especially clearly when considered as the particular political gesture just described. The ontological independence of the economic realm as rational action reached its zenith in the immediate intellectual filiation of Walras. To be sure, this movement is over-determined. On the case of France, Philippe Steiner describes the period 1750 to 1830 as the establishment of a "foundational tensions" between political economy and sociology. The latter appears thus as a "counter-discourse" where the "axiological dimensions of action—founded on ultimate values, of a political, moral or religious order—is taken into account in the face of an economic discourse founded only on rational self-interested behavior."[44] Still, this "sociological" opposition to the primacy of the economic

[44] Philippe Steiner. 2006. "La science de l'économie politique et les sciences sociales en France (1750-1830)." *Revue d'Histoire des Sciences Humaines*, vol. 15, no. 2.

only intensified the supposed ontological independence of "the economic" from other spheres of social activity.

Inspired in large part by the pure economics of Walras, Vilfredo Pareto developed economic and sociological theory so that action governed by norms and conventions were described as precisely not economic—whereas economic actions are those with an instrumental aim. While Pareto is often presented as only refining in the ideas of Walras, not surprising since he was called to take over the chair occupied by Walras in Lausanne, Pareto diverged in important ways. Bridel and Mornati encapsulate the contrast as follows:

> ...Walras descends from his theory of general equilibrium toward a theory of the behavior of agents that renders it coherent while Pareto climbs from his theory of the rational agent toward market structures, of which Walrasian general equilibrium is but one case among others.[45]

Pareto's "sociologization" of marginal economics, the different metaphysics of he and Walras, can be understood as motivated by their different political aims. Pareto found some of Walras' propositions to be too socialist. Pareto supported a liberal Fascism, and was even appointed to the Italian senate by Mussolini a year before his death. Not satisfied with a formal description of a market system,

[45] Bridel, P. & Mornati, F. 2009. De l'équilibre général comme « branche de la métaphysique »: Ou de l'opinion de Pareto sur le projet walrasien. *Revue économique*, vol. 60, (4).

Pareto endeavored to show that economic action of the market kind was the only kind supported by the positivist view of science he defended. With this gesture, the utility-maximizing individual became the definition of trans-historical rationality itself, opposed to customary and traditional forms of action.[46] Pareto would be central, through the teachings of Henderson and Parson, to sociology in the U.S.

In this current of social science, the principle of individual maximization of marginal utility became the very definition of rational economic action. Of the four "typical measures of rational economic action" listed by Weber, the first two are "the systematic allocation as between present and future of utilities," and "the systematic allocation of available utilities to various potential uses in the order of their estimated relative urgency, ranked according to the principle of marginal utility." By consequence, for economic activity to be rational it must allow each individual to act in relations of fluid exchange, so that the individual may calculate their utilities. Money thus becomes essential as a factor of economic rationality, not because of its social particularities, "not its actual use," but because "from a purely technical point of view, money is the most 'perfect' means

[46] Pareto, Vilfredo,. 1963 [1916]. *The mind and society; a treatise on general sociology*. 4 vols. New York: Dover.

of economic calculation."[47] "Substantive rationality," as opposed to formal rationality, "is the degree to which the provisioning of given groups of persons (no matter how delimited) with goods is shaped by economically oriented social action under some criterion...of ultimate values (*wertende Postulate*), regardless of the nature of these ends."[48]

Perhaps no one else has written as intelligently about the contradictions in which Weber became tangled than Herbert Marcuse. For Marcuse, with *Economy and Society*—a "bacchanalia of formal definition, classification, and typology"—Weber produced an unwitting reductio ad absurdum of an apolitical science of economy. With this book, "the pure, value-free, philosophical-sociological concept becomes in its own development a critique of values; and conversely pure, value-free scientific concepts reveal their own hidden valuations—they become a critique of the given in the light of what the given inflicts on man and things." Weber famously thought capitalism and industrialization, the two indissolubly linked, were the unavoidable outgrowth of Western Reason. Calculation and "progressive mathematization" are elements of the rise of Reason. Since only capitalism, according to Weber, permits extensive calculation, the apogee of Western Reason is capitalism. The extension of market exchange is told as the

[47] Weber, Max. eds, Guenther Roth, and Claus Wittich. 1978. *Economy and society : an outline of interpretive sociology*. 2 vols. Berkeley: University of California Press; 71.
[48] Ibid, 85.

story of the extension of rationalization. The latter also implies the growth of bureaucracy, for a rational administration of the state. In the words of Marcuse, "formal rationality becomes indivisibly capitalist rationality...Western Reason becomes economic reason."[49]

With unflinching rigor, Weber thus unfurled the consequences of his view on economic rationality; resulted his great pessimism. "Capital accounting," a necessary condition for rationality according to him, "in its formally most rational shape thus presupposes the battle of man with man."[50] The social conditions for such rational accounting, namely the "market economy," implies inter alia that "those without substantial property...run the risk of going entirely without provisions, both for themselves and for those personal dependents, such as children, wives, sometimes parents, whom the individual typically maintains on his own account."[51] In Weber's vision, then, humans come to be dominated by economic rationality, yet economic rationality is a necessity, or a "destiny" as he puts it. How far we have come from the Enlightenment concept of utility! If for the philosophes the useful necessarily conjoined beauty, the good, and truth—in a deeply political sense—the maximization of utility, through the winding path we

[49] Marcuse, Herbert. 1965. "Industrialization and Capitalism in the Works of Max Weber." *New Left Review*. 30: March-April; 5.
[50] Weber, 93. The emphasis is Weber's.
[51] Ibid, 110.

have followed, is now merely a function within a play of individuals, within a sphere necessarily separate, even antithetical, to the political or to "values" as Weber would put it.

A defining property of values—here understood not as economic categories—is that they cannot be *demonstrated*. Hence Weber concluded values must "battle," without the help of science or Reason to bring about a resolution. Both Marcuse and Lukacs seem to have been struck how such absolutist theory of economic rationality conditioned irrationality. Marcuse, writing in the 1960s, credited Weber with having discovered the blind force, unmoored from values, with which the rationality of market capitalism now swept through the globe—yet unlike Weber, he concluded this rationality, had now become irrational, confirmed to be destructive and blind to human need. Insofar as Weber's value-free science should be silent on political and ethical questions, Lukacs interpreted an effort to forestall dialectical materialism along with its characteristic idea that ethics and politics could only be understood through a more totalizing scientific understanding, especially of history. Left largely unmoored from reason, politics tended towards irrationality. If formal economic rationality was implacable, it provided no direction to society, substantive rationality ultimately thus abandoned to affects. By this Lukacs explained Weber's caesarist political

conclusions. Or as Marcuse put it, "bourgeois reason supplicated irrational charisma."[52]

This narrative arc is not without irony. As Weber famously stated in 1909 at the *Verein für Sozial Politik*, "The reason why I denounce with such extraordinary fervor one every occasion...the confusion between "ought" and "is", is not because I undervalue the problem of the "ought", but just the opposite: because I cannot bear problems of world-shaking importance, of immense ideal proportions, in a sense the highest problems that can move a human being—I cannot bear these problems being turned into a technical 'question of productivity', and discussed here as if they were within the province of a specialist discipline like economics."[53] For Weber, if industrialization is a "destiny," it is not because of the particular nature of the capital value-form, not because of historically-specific social relations structuring the need for capital to expand the sphere of commodification, but rather it results from the progression of Western Reason. Thus, he saw capitalism as the expression of Reason, even if a puritan "inner-worldy asceticism" happened to provide the historical substratum for its emergence.

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[52] Marcuse, 8.
[53] *Gesammelte Aufsätze zur Soziologie und Sozialpolitik*, Tübingen (Mohr) 1924; 419. Cited by Marcuse, 4.

We have come full circle to meet again the problems set out as beginning. The point of reflexivity has been reached, the object of study turns out to be the same academic discourse we have been criticizing as contemporaries. I began with a polemic against Habermas's treatment of the economic as norm-free sociality gradually encroaching on a "lifeworld." By extension, I criticized also systems theory from which this view derived.

Those who continued to follow a Weberian reading of quantification generally assume that capitalism is defined by the rational use of resources in order to gain profit. Conformity of individuals (or firms) to the profit motive (and the supposedly ensuing rational organization of resources) is taken to be the criterion for considering an economy as capitalist. In Sociology of Ancient Civilizations, Weber wrote that capitalism is "wealth used to gain profit in commerce." It followed that "capitalist economy" is based on commerce, "which means that goods are produced (in part at least) to become object of trade, and also the means of production are themselves object to exchange."[54] If some today still imagine they can settle, for instance, the arguments about whether early American farmers were capitalist by appealing to their bookkeeping, it is precisely because scholars use Weber's concept of capitalist economy, which fails to see that the defining feature of a social and economic formation are its

[54] Weber, ancient civilizations, p.48

dominant relations of production. The circularity of this concept of rationality has an historical dimension.

As Joel Isaac shows, Weber and even more so Pareto found eager readers at the epicenter of inter-war academy in the United States. Beginning in 1932, the biochemist Lawrence Henderson organized a seminar around Pareto's treatise of sociology. Participants included some who would go on to become the most cited and read in American academia, including Joseph Schumpeter, T. North Whitehead, Talcott Parsons, and Robert K. Merton. Pareto wanted to account for what marginalist economics excluded—in doing so, he treated the non-economic as remainder, as "residue" to be explained "sociologically." This particular aspect of Pareto's dissatisfied Parsons, which explains that the latter's systems-theory explained situated economic action as one system co-existing and interacting with others. As Isaac explains, "Parsons suggested that Pareto has put himself in a bind by defining the non-logical 'residually'...thus negatively defined, Pareto's criterion of non-logical behavior—actions that the canons of scientific reason would not count as rational—dumped into the same category elements in non-logical action that Parsons considered distinct."[55] Thus Parsons only re-created the rational individual at a broader scale.

[55] Isaac, Joel. 2012. Working Knowledge : making the human sciences from Parsons to Kuhn. Cambridge, Mass.: Harvard University Press. 163.

Chapter 5:

The War Board, Problems of Power

By the end of the 19th century, utilities of public use at the national and state level in the United States were held by a few large firms. By the nature of systems such as railroads, water, or telegraph, these where monopolies. With the rise of monopoly capitalism, the courts were faced by a relatively new question, the problem of "rate-fixing." The unique position of power of these monopolistic companies motivated calls for regulation from other elements, largely from within the business class. This situation should be interpreted, again, as a consequence of the contradictions of exchange value. The rise of exchange value, which is coextensive with abstract labor, produces particular problems of power within societies. Capitalism now reached a different stage: The tendency of capital towards monopoly concentration during its advancing development must be understood as the ultimate cause of the questions here studied.

Insofar as the law sanctifies the property relations of capitalist society, it is a constitutive element, among others, sustaining the capitalist relations of production. Still, the development of capitalism produced tensions within this

very system of representations. The tensions wrought within the political institutions, and within the dominant line of political and juridical though were the result of the real contradictions arising within the development of capitalism. The result was the rise of a particular form of quantitative objectivity, the market imaginary, embodied most obviously by the economists as new figure.

Rate-making and the cult of impartiality

Until this time, common law had often applied a standard of "reasonableness" to the regulation of prices. In 1898, in the landmark case *Smyth vs. Ames*, the US Supreme Court struck down rate regulations of the Nebraska Railroad Commission, relying on section 1 of the 14th Amendment of the Constitution, clause prohibiting "any State deprive any person of life, liberty, or property, without due process of law." Jurists argued that any regulation of privately-held utilities reducing return on capitalist investment was an unlawful deprivation of property. This implied that the property was not just "physical property," as they called it, but all of the potential earnings, the potential income stream their possession should conceivably have yielded.

These conflicts were guided by the majority opinion written by Justice Harlan in *Smyth vs. Ames*, holding that "the basis of all calculations as to the

reasonableness of rates...must be the fair value of the property being used by it for the convenience of the public." The "fair value," a contentious term of art, was to be calculated, according to the court, using a multiplicity of factors, ranging from "the original cost of constructions, the amount expended in permanent improvements" to "probable earning capacity of the property under the particular rates," and "the amount and market value of its bonds and stock."[1]

When a case was brought against a utility company, the problem was settled in court, but determining the "fair" rates increasingly became the task of state and federal commissions charged with regulating the companies, or with granting franchises even before construction. Accountants and engineers were called to testify, the former to determine the financial standing of the company, to appraise what it owned, while railway engineers had special knowledge concerning the present and future costs associated with such vast enterprises.

Since other firms used the railroad lines, the calls for the rates to be regulated became particularly pressing, hence the problem of determining what rate of revenue should be considered extortionate. Determining "fair" rates proved no simple task, because the standard set by the court left much room for interpretation and discretion. Reflections on the concept of "value" as justification

[1] Smyth vs. Ames 169, U.S. 466. Cited by Henry Floy. 1912. Valuation of Public Utility Properties. McGraw-Hill. pg.9

for income-yielding property become more common during this period. In the writings of lawyers, judges, legal scholars, engineers, and those yet only vaguely professionalized as economists, the term "value" appears to take on a plurality of meanings, so that it is difficult for the modern reader to give a single rational reconstruction of its use. The battle over its meaning and measurement exposes most fundamental political questions of the time.

To the modern reader, it might seem that the exchange value of property titles to a company should simply be its capitalization: a sum of the income stream a capitalist could expect from a utility company. As those reasoning at the time knew, titles exchanged on a stock market had an exchange value because they constituted claim to a certain stream of income. Thus, the stock market might have provided the answer, but surprisingly it did not: The Railroad Securities Commission, observing the tumultuous variations of stock prices, concluded in 1911 that the "outstanding securities are of so little evidentiary weight" that they should not be used, instead favoring "direct evidence."[2] Hence the legal doctrine holding that rates should be established based on the replacement cost of everything owned by a company, which they called "physical value," plus an increment for the "intangible value" of the company, sometimes

[2]Report of the Railroad Securities Commission, 1911. pg.38. Cited by Floy, Henry. 1912. Valuation of Public Utility Properties. McGraw-Hill.

called the value of the company as a "going concern," which is to say a putative "value" that the owner of the company was in possession of by *virtue of* possession.

In the case *Columbus Railway and Light Company vs. the City of Columbus*, the Special Master appointed by the judge of a U.S. Circuit Court described the method he would follow:

> Fictitious values will be disregarded, improvident and unwise expenditures will not be taken into account, but only the fair value of the property will be used as a basis, including, however, in such fair value not only the tangible property devoted to the public service, but such intangible value as may be legitimate and may be justly, under all circumstances, credited to the producer on the one hand, and debited to the consumer on the other...Final adjustment by the court can rarely, if at all, be made with mathematical exactness. All the court can do is, from the evidence, to arrive at such a value as will, all things considered, be fairly equally just to both parties."[3]

In practice, then, the cases often turned into exercises of investigative accounting; during hearings, representatives of the companies were called to present figures justifying their rates. "A few of the first reports received are said to have shown a tendency to over-valuation," a student of the question wrote

[3] Cited by Floy, Henry. 1912. Valuation of Public Utility Properties. McGraw-Hill. pg.5.

coyly in 1914, problem which forced commissions to call for independent appraisals.[4] It appears that systematic pricing within large industries, often attributed by economic historians to a push for rationalizing efficiency, had as much to do with the pressure of probing outsiders, for it coincides closely with the growing function of the state in setting rates and regulating monopolies. The considerable advances in pricing, especially notable in railways, was in fact a result of this political, legal, pressure onto the firms.

In determining the just rates, and so the just profit, there were other questions: Should the physical value be based on actual cost at the time of purchase, or the present value? If the latter, should the figures be based on a 5 year average of recent prices, or a 10 year average?

These situations seemed to pose intractable questions. Few jurists would analyze these developments with as much discernment as Robert Hale. Writing in 1921, Hale criticized the "physical value" theory of rates, calling the whole endeavor "one of the most unreal fields of speculation in which the minds of metaphysicians have disported themselves since the days of the medieval schoolmen."[5]

[4] Fletcher, C. Paul. 1914. The Valuation of Railroads. Thesis: Univ. of Chicago. pg.22.
[5] Robert L. Hale. 1921. "The 'physical value' Fallacy in Rate Cases." The Yale Law Journal, Vol.30, No.7. pg.716

Hale saw that the "market value of a service" was inherently problematic: if the market value is simply the rate really charged at a given time, then it should follow that *any* reduction would be confiscation, even when monopoly or price gouging are decried. The concept was also of little use determining what constituted a "fair price" for a utility that has not yet begun to sell its services. Moreover, any reduction to rates would likely lower the exchange value of the company, considered as an asset yielding revenue (as something traded on the stock market). Hale concluded that the doctrine of "physical value," while it pretended to be more solid than an "intangible value," was in reality merely a smokescreen for decisions of courts or commissions, a way to avoid confronting the most difficult realization: there could be no objective, intrinsic basis (something measurable, out in the world) for attributing any given sum of income to owners of income-yielding property. He concluded that the "standards of what it is proper for an owner to get out of his ownership have to be worked out *de novo,"* and suggested this task might preferably be a matter for the legislative bodies.[6]

At stake was nothing less than the question of lucrative property itself. Faced with this impasse, one answer was to present economic value as springing

[6] Hale, Robert. 1922. "Rate Making and the Property Concept." Columbia Law Review, Vol. 22, No. 3. pg.213.

from somewhere in nature rather than in society, rather than as resulting from a particular configuration of social relations. In this sense the notion of value became naturalized, such that the income from property—economic value in the real sense of the word, expressed as money—is imagined to draw its source from some magical locus other than the productive activities of the firms. The only remaining reason Hale considered valid was that a certain rate of return was necessary in order to attract investors. This reasoning follows of course from the fiction that investors are needed for production, which ceased to be true once central banks could emit money as an anticipation on the future economic value brought into existence by a productive activity.

The economy as a system of power

Hale was writing about the problem of utility regulation, but he warned that "the question of the amount of profits that is legitimate may therefore, in the future, underlie governmental questions more important than that of rate regulation. But as yet is has scarcely been raised in tax proceedings...or in wage disputes." Hale's confrontation with this question appears to have been crucial to the development of his more general view on power relations inherent to economic life. A legal scholar at Columbia law school but trained in economics at

Harvard as a student of Frank Taussig, Hale realized that the problem of property contained in the disputes was not specific to utilities, but haunted the economy generally. "There is scarcely a single advantage possessed by a business affected with a public use which cannot be matched in the case of some unregulated concern," he wrote. If regulators had failed to achieve a state of equality between regulated utility companies and the unregulated companies, it was because, according to him, the unregulated companies were never in a state of equality themselves, state which would in any case be impossible.

In essence, Hale argued that the equality presumed by exchange and contract relations had no sociological reality. It might appear that the "market price," to use his term, is what guaranties an equal confrontation; but this he rejected as well: "The payment of the market price is not an equally practical matter for all, any more than an equally practical burden is imposed on all when the law in its majestic equality forbids rich and poor alike to sleep under the bridges or on the park benches," he wrote, paraphrasing the famous quip of Anatole France.

His reasoning expressed a tension developing for several decades within American jurisprudence. The historian of political ideas J-F Spitz writes of a "cult of impartiality" in the American legal tradition, which underwent gradual transformation between the Civil War and the New Deal. While he concedes the

major change did not come until 1937, when the Supreme Court began to accept more "interventionist" or "redistributive" state policies, Spitz is not satisfied with accounts that, he says, ignore the previous decades as merely a crude defense of property owners. To be sure, Spitz also concedes this impartiality was always more imagined than real.[7] This dilemma is rather false, as I see it, since even the clearest expressions of class conflict are mediated through a rich and specific system of representations.

Spitz identifies two distinct jurisprudential currents of "resistance" against the "production of social equality" by public authorities: on the one hand, a "deontological individualism" calling for only impartiality before the law and a guarantee of basic liberties; on the other, exemplified by the reasoning of the conservative justice W.G. Sumner, a policy of "each according to his labor," which is to say, something like a principle of proportionality.[8]

It is true, during what is sometimes called the progressive era, with its emphasis on "trust-busting," the Supreme Court ruled in favor of state regulation in two landmark cases. In the *Slaughterhouse cases* (1873) and the landmark *Munn vs. Illinois* (1877), it held that the prices of firms benefiting from monopoly

[7] Cf. Bourgin, Frank.1990. The Great Challenge: The Myth of Laissez-Faire in the Early Republic. New York: Perennial Library.
[8] Spitz, Jean-Fabien. 2014. Le mythe de l'impartialité: les mutations du concept de liberté individuelle dans la culture politique américaine, 1870-1940, Léviathan. Paris: Puf. pg. 52.

positions could be regulated, when they concerned the public interest (in these cases, meatpackers and grain-shippers).[9] Still, two other landmark cases of a slightly later period exemplified the conflict described by Spitz. In the *Lochner* (1905) case, the court ruled against regulation of working hours, while in the *Coppage* case (1914), it upheld laws forbidding workers from joining unions, with justice Pitney arguing that inequality of outcomes is but the consequence of private property and individual liberty. Pitney concluded that society is forced to accept the consequent inequalities, because they cannot be remedied without violating the impartiality of the state.[10]

Roscoe Pound criticized this doctrine on the grounds that it contained a contradiction, that the consequence of these two principles was giving rise to conditions of inequality and dependence so great that the very conditions of individual liberty were being undermined. In this sense, he agreed with Hale. An increasingly shared view was that the liberal tradition (in the sense that they claimed as intellectual heritage authors of classical liberalism) seemed to have assumed the world Adam Smith himself had imagined, a world of small independent producers, all on equal footing. Pound as well as Thorstein Veblen, to cite two salient examples, concluded that this world was no more due to the

[9] Munn vs. Illinois, 94 U.S. 113 (1877). Slaughterhouse vs. Louisiana, 83 U.S. 36 (1873)
[10] Spitz, pg.445.

development of exceedingly powerful "vested interests", resulting in new problems for the idea of free contract.

The state could only intervene when the *public* interest was in peril. Hale, Pound, and other theorists of the progressive era thought that the distinction between purely public and purely private interests was increasingly problematic, because concentrations of economic power meant the public interest was always in play. For Veblen, this concentration of economic power was inherently contradictory to *technical* requirements of the new, integrated and monolithic economies of scale, such that the requirements of efficient management by his imagined "soviet of technicians" was incompatible with the uncoordinated profit-taking of the "price system" (i.e. market exchange).

Over the course of his career, Hale would generalize his analysis of the economic realm, coming to see it, including the market and the price system, as a system of power: "As I see it," wrote Hale, "all incomes are the result of coercion held in check by counter-coercion."[11]

Let us turn to the analysis of a concrete situation, to see how economic theories came to function as a mental component of the social relations of production. The regulation and calculation of prices during WWI provides a crucial case. The War Industries and Armaments Board was created by the

[11] Spitz pg.454.

United States in July 1917 to acquire materials necessary for the war effort. The board was composed of elected politicians, members are of the executive, high ranking members of the military, and a single economist, the Harvard professor Frank Taussig, who nonetheless had a respected and determining role on the War Board. Taussig would certainly have been recognized at the time as one of the major economists of the profession. John K. Galbraith would later write, in 1975, that Taussig was "perhaps the most highly regarded economist of his time."[12]

The enormous purchasing needs of the federal government under these conditions gave it significant power over the price at which it would buy goods—the war had already been driving up prices by the time the War Board was formed. At the same time, the state was in total dependence of the system of private production for desperately needed military materials, which often meant dealing with powerful monopolies. The situation was a tangle of contradictory interests. The board was to no small degree constituted of former businessmen favorable to the capitalist class. Military officers were not so accommodating given the pressing needs. There was also pressure within the political system to keep the commissioned prices low, part of a general effort against war profiteering. Politics would again be haunted by the problem of profit.

[12] Galbraith, John Kenneth. 1975. Money, Whence It Came, Where It Went. Houghton Mifflin Co. pg.168.

In principle, fixing the price at any one given time for a given firm should be simple by determining what is the cost of production for a firm. Given the right data, this could be a most basic act of accounting, taking the sum of the costs of the factors of productions, wages, plus all the primary goods used in manufacturing, including what the firm must pay in rent and interest for whatever property and equipment it uses. Then, the cost of one unit of a commodity will be the cost of production divided by the number of units produced or to be produced in the future during a given period of time.[13]

This cost, called the "accounting cost," was often distinguished, paradoxically perhaps, from the "economic cost," and also thought to be different from the "market cost." These distinctions betray a question that haunted the War Board: the determination and justification of profit. In light of the legal precedent already described, the committee was mandated to set prices at "cost of production plus a reasonable profit." The Federal Trade Commission established a cost of production through investigative accounting and collection of figures and statistics. Deciding a reasonable profit was a less purely empirical

[13] The prices of the primary goods might be changing. While this could pose problem given a fixed price, in fact price fixing by the government was not much different from contracts between private parties, which usually involved a contract fixing the price, even for future production.

matter. The standardization of bookkeeping and practices of accounting became central factors in the determination of profit.

Soon after the end of the war, in February 1919, Taussig published an article in one of the profession's major journals, the *Quarterly Journal of Economics*, in which he presented "price-fixing as seen by a price-fixer." How didTaussig represent and justify his own practice?[14]

According to Taussig, during the war, conditions of exchange become extreme, peculiar. The state absolutely needs the products it is purchasing, which makes demand "virtually inelastic...the demand curve is perpendicular or is almost perpendicular." Since the government had vast purchasing power, sometimes becoming the only buyer, and could compel sale by various methods, they could conceivably set whichever price they pleased—yet putting the firms out of business as consequence would not be a desirable outcome. Moreover, it was not just a question of setting the government price, but also controlling more generally in the United States, "soaring prices, speculative advances, manipulations by middle-men, a runaway market."

"A long and heterogeneous list" of commodities were treated by the committee, "not only important staples like iron and steel, copper, lumber, wool,

[14] Taussig, F. W. 1919. "Price-Fixing as Seen by a Price-Fixer." The Quarterly Journal of Economics, Vol. 33, No. 2.

hides and leather, cotton fabrics, nitric and sulphuric acid, but also articles of less quantitative importance, like nickel, aluminum, quicksilver, zinc, brick, cement, hollow tiles, crushed stone, sand and gravel." Among some items, in particular "lumber, copper, iron ore, iron and steel products...the same phenomenon commanded attention, namely, that of marked differences in cost of different producers—a gradual shading from low cost producers at one extreme to high cost producers at the other." This variability of costs posed problem, since setting a given price would have meant large profits for low cost producers and no profits, or even losses, for the high-cost producers. Due to the requirement of impartiality, it would have been impossible for the War Board to buy at different prices from different producers.

Still, while Taussig conceeded "opportunistic" bargaining in many cases, he emphasized the rigor of his method, and its basis in economic theory. Compared to the "Food Administration," he asserts, "the Price-Fixing Committee made more systematic use of cost figures and cost accounts." Taussig navigated carefully between defending the use of economic expertise on the one hand, and on the other demonstrating he had followed sound economic method. The two are necessarily contradictory, however the price-fixing committee was under specific pressures motivating it to bind it actions in rules and in formal economic principles. "A frankly opportunistic policy alone was possible" in certain cases,

Taussig writes, but "the cases of most importance quantitatively, however, and those typical also of the general character of the price-fixing operations, were less complex, and gave or seemed to give better opportunity for some application of general principles and general reasoning."[15] Taussig asserted that the price at which the government should buy was the cost of production of the marginal producer, cost which should be found "at the point where from 80 to 90 percent of the output was included."

Taking the cost data gathered from account books by the FTC, the committee produced cost curves, for example of Douglas Fir from the Pacific Northwest (which is figure 1). The horizontal axis is the percentage of total output, the vertical is the unit cost. He writes: "Virtually these charts represent the data on which the Price-Fixing Committee based its action."

He seemed to expect *a priori* that the cost of the marginal producer would be located around 80 to 90 percent, based on the application of Alfred Marshall's marginalist reasoning from his *Principles*. This is the point on the cost of production curve where no more marginal utility is gained by including a larger percentage of the total output. "This concentration of attention on the marginal producer has an appearance of obedience to economic theory," Taussig wrote, celebrating so "delightful a verification of economic principles, so complete an

[15] Ibid. pg.218

empirical confirmation of their soundness, [which] quite warms the economist's heart." Still, in the following paragraph, Taussig immediately notes that the price fixed is "by no means necessarily the same as" if "normal forces were workingg under normal conditions." According to him, "the normal price which we speak of is one of the fictions or devices of the economist, like economic rent or an index number. It corresponds to no specific concrete fact which can be observed or identified; it is an artificially constructed type, a representative fiction."[16]

Implicit in this vision, that the fluctuations in price, the "short-term or seasonal price" not always matching the "marginal cost figure," is the assertion that the marginal cost that the Commission had ascertained, through its accountants and hearings, reflects in some sense a deeper, more fundamental, economic reality, even while it is but "a representative fiction." It seems Taussig considered this figure to be similar to an "index number" because in both cases, a "market methods" is used to produce a number that is more just than the market itself. Economists become the embodiment of the impersonal economic forces, insofar as they are able to read the underlying reality. By the end, Taussig moderates his claims, defending "abundant room for some exercise of restraining and deliberated action," given that economic laws are "customarily formulated in exact terms, with an appearance of mathematical sharpness," when in fact "there

[16] Ibid. pg.227.

was no more than a gradual and tentative approach to any principle of action whatever."

Practical and epistemic limitations

Having surveyed Taussig's stated method in fixing prices, we must ask how it compared to the actually practice of the committee. Reading the hearings and reports produced during and after the war reveals, not surprisingly, that the matter was more complicated. The nature of the difficulties encountered shed light on the real practices: The calculative standards and the economic representations employed were neither simply performed, nor are they merely false representations covering up a reality sitting below. The two must be understood as a dialectical relation. What we have is not a theory successfully "performing" or being "performed" but rather a theorization consistent enough with everyday experience, with practice, that it can serve as operationally successful.

Take for example the method of accounting used by the Federal Trade Commission. The cost-method of accounting, as economists at the time called the "accountant's or entrepreneur's cost," calculated the cost of a commodity as the sum of the wages, raw materials, and interest or rent. This method did not

include a standard rate of profit within the cost, the profit being the fraction of the firm's income distributed to the capitalist owner, or owners in the case of a joint-stock company. During the data gathering and hearings, this manner of accounting would determine certain behaviors and problems.

One was a motivation towards creative bookkeeping to dissimulate within other costs. Creative accounting could serve as a way to hide profit, to escape actions against war profiteering. When the food administration tried to curb inflation of prices by setting a standard rate of profit, its legal department was called to investigate many cases of exaggerated costs. The cost calculated by the FTC did, however, include "depreciation on capital." The method of calculating depreciation was subject of much controversy and had been since the rate-fixing cases—the full scope of these debates cannot be unveiled here. It is worth noting, for instance, the lumber executive who argued in front of the price-fixing committee that he should not only be allowed to count the forest from which he collecting lumber as a depreciating asset, but that it should be valued at the current much increased price of "stumpage" in the area. The committee thought that this was a way to double-count his lumber and rejected his appeal.

The committee had difficulty dealing with problems of this sort due to the scarcity of data, resulting from the limited number of employees collecting data for the Federal Trade Commission, but also because many smaller firms simply

did not keep precise account books, if any at all. Quite often—for the lumber industry, to take a specific example—variations in costs were due to the relative size of firms, with larger ones conceivably benefitting from economies of scale or other sources of efficiency. This could result in different rates of profit. In consequence, if the committee had used the cost accounts from the large lumber firms as the benchmark, it might have crushed the smaller ones.

During hearings on the price of lumber, the committee realized some of the limitations of both data gathering and bookkeeping:

> **Mr. Ransom:** I would like to ask Mr. Gerlinger if he made the statement that the investigators have gone to the more easily accessible camps?
>
> **Mr. Gerlinger:** The men that cover this field are scare. There is practically only one man there now and he is not there all the time.
>
> **Mr. Haney:** He is in error, there are several men out there. A number of the sawmills do not keep their books carefully. It takes a man a long time to get costs and the men take those whose costs are best kept.
>
> **Dr. Taussig:** The matter doesn't bear directly on our proposition.
>
> **Mr. Jerome:** When the Federal Trade Commission are having difficulty arriving at costs, what do you expect the poor loggers to do?

> **Dr. Taussig:** What do you expect the poor Price-Fixing Committee to do? [17]

Just as important for us, the picture of the American lumber industry revealed during the hearings should give pause to those who hold some of the more typical representations of economic activity. The freewheeling character of the bookkeeping, the approximate nature of pricing, might cast some doubt on how operative really were the supposedly stringent forces guiding economic life. From a Weberian perspective, if the lumber yards were able to survive without tight bookkeeping, the "market forces" pushing them towards efficiency were not so strong after all, revealing prices might have been of a more conventional kind.

To be sure, it is difficult to say to what extent this absence of account books was a tactic to hide information from government officials. The real problem of the committee was not so much that it fixed prices, but that it fixed profits. Some might have feared that their accounts would reveal too much profit, or that making their rate of profit known would have made it too easy for the state to regulate.

Concerning the price differentials for the finished products of cotton, Brookings asked for a clear answer from Milliken, a representative of the Cotton Goods Industry. Brookings was aware of the relatively simple nature of the

[17] Minutes of the Price Fixing Committee of the War Industries Board, pg.31.

problem, but the industry representative appears throughout the exchange to avoid giving a firm number. Consider this excerpt:

> **Mr. Brookings:** [...] I imagine starting with the price of cotton there is no difficulty for you to establish the cost of spinning and weaving these different goods. Once you have ascertained that, if you agree on a fair profit to be charged, there ought not to be any fundamental difficult in arriving at a price.
>
> **Mr. Milliken:** The cost of manufacturing is changing from day to day.
>
> **Mr. Bookings:** [...] You have two main features, labor and supplies. The labor does not change every day in price. Generally speaking, there ought to be no difficulty, since most of the manufacturers that I know have their cost sheets so they can follow a single job clear through to the end. [18]

Milliken continued to evade, refusing to pin down any kind of cost.

In reality, the fixing of the prices probably involved a good deal of wheeling-and-dealing. While the Federal Trade Commission was assigned to determine the production costs, including by looking into the books of firms, most often the price fixing committee would simply ask the representatives if a certain price would leave them a fair profit. Not that this would be the end of the

[18] Minutes of the Price Fixing Committee of the War Industries Board, pg. 139-140

negotiation. Still, when the committee was determining the price for steel, it allowed a private committee of the American Iron and Steel Institute to determine the schedule of differentials (variations in the basic type of steel). The day after the prices were fixed, the price of steel securities increased markedly on the stock market, according to the *New York Times* of September 25, 1917.[19]

The uncertain power of the committee

To the extent that figures from the Trade Commission could be contested only with difficulty by any of the parties, Taussig could apply his economic method, setting the price at the level of the costs of the "marginal producer." This method obeyed his economic theory, but in discussions between members of the committee, Taussig sometimes revealed other, more practical reasons, for setting the price below a certain level: Often, the level of the "marginal producer" coincided closely with the amount of production the government needed, which was the output of between 80-90% of producers. Still, this was presented according to economic reasoning as the usual inflection, on the curve, between sub-marginal and supra-marginal producers. On another occasion, he mentioned that even if the price set to that cost of the marginal producer did lead ""high

[19] Preliminary report on wartime taxation and price control by the Special Committee on Investigation of the Munitions Industry United States Senate pursuant to S. Res. 206 (73d Congress). July 29, 1935. Author: Gerald Prentice Nye. Pg.106.

cost producers" to shut down, this would have the ancillary benefit of helping some "manpower...to be diverted from ordinary industries to war purposes,"[20] which was considered a necessity.

The question, then, is why Taussig applied this method, or at least presented his work as the application of method, instead of defending his economic expertise and the need for case-by-case judgment? It must be considered, while it may seem paradoxical, that the price-fixing committee was often in a relative position of weakness, and open to judicial challenge especially on the question of profit.

At the opening of the first meeting, in presence of lumber industry representatives, the chairman of the Price-Fixing Committee, Robert S. Brookings, tried to establish the balance of power in his favor: "The one great advantage this Government has over the private producer is this: We have specific legislation to get what we need when we need it at a fair price, and the burden of proof is on the other fellow to show it is not a fair price."[21] However, as Taussig would later admit, "the Price-Fixing Committee's legal position...was highly uncertain. The only weapon which the law clearly put into its hands was that of turning (by recommendation) to the President's power of commandeering

[20] Minutes of the Price Fixing Committee of the War Industries Board, pg.125.
[21] Minutes of the Price fix…pg.3.

supplies or a plant, the owner being then left to proceed in the courts in order to secure a "fair price."[22]

In practice, this still did not give the committee much power. Even if the government had chosen to commandeer the plants themselves, in the exceptional circumstances of war, it then would have been required to pay, according to legal precedent, a "just compensation," opening the door to judicial squabbling and perhaps a higher cost in the end. In fact, the courts had already ruled that "the Government's obligation is to put the owners in as good a position pecuniarly as if the use of their property had not been taken."[23] Requisition may have been of little immediate financial advantage for the government. Additional problem, while installing state functionaries in place of the previous management might have guaranteed that no withholding was taking place—something Brookings overtly suspected on several occasions—they were keenly aware that they had few competent and trustworthy individuals to put in place. This was due to the relatively weak, underdeveloped system of civil servants in the United States—a contrast particularly striking when comparing, for example, to Britain or France.

[22] Taussig op.cit. Pg.208
[23] Address on "World Activity of the Federal Trade Commission" before the International and Comparative Laws Section of the American Bar Association Arts Club, Philadelphia, Pa. September 10, 1940.

In fact, during WW1, Britain already had its own system of national factories, which it increased in scale for the war effort.[24]

The companies were sometimes clearly in positions of relative power. In 1935, a Senate committee reviewing the practices of the War Board would write, concerning negotiations with representative of the Du Pont Corporation, which had an almost total monopoly on gunpowder production, that "the government had no real alternative to accepting the terms of the du Ponts."[25]

The Board could and did make use of pressure on patriotic grounds. Even the most ruthless businessperson might have feared passing for a war profiteer or appearing to harm the war effort.

In addition to practical and epistemic constraints, the conduct of the War Board was at every pointed guided by the need to fend off powerful outside challenges, to justify its decisions to the courts and to parliamentary inquiries. "We are called upon to defend nearly every contract that is made here," Chairman Brookings would explain during internal discussions, "there is a criticism of expenditure, of prices paid. You know we are up against that sort of thing, called up to the Capital [sic] every now and then to justify some sort of

[24] Loft, Anne. 1986. "Towards a critical understanding of accounting: The Case of cost accounting in the U.K., 1914-1925." Accounting, Organizations and Society. Vol. 11, No.2 pg.137-169.
[25] Preliminary report on wartime taxation and price control… (op.cit.)

contract which the department has made."[26] Within the legal department of the War Board, there was according to internal documents, "fear that if the agreements were invalidated by the courts the whole regulatory record of the agency might be called into question and the validity of its wartime decisions disputed."[27] It must be recalled, also, that when President Wilson created the commission, it was explicitly "in order that a uniform method might be established."[28]

This explains the importance of Taussig's method, and the extent to which he stressed its basis in axiomatic economic theory. The appeal to market logic must be understood as a recourse to a kind of mechanical objectivity: While Taussig could not claim that the price fixed was quite the same as if "normal forces were working under normal conditions," it did provide a set of rule-bound principles from which he could derive the requisite price, seemingly without employing his own subjective judgment. Just as American social structure and political culture resulted uniquely in standardized cost-benefit and risk analyses to assess public works—"in the name of impersonal

[26] Minutes of the Price Fixing Committee of the War Industries Board, p.109
[27] Himmelberg, Robert. 1965. "The War Industries Board and the Antitrust Questions in November 1918." The Journal of American History, Vol. 52, No. 1. p. 59-74
[28] FTC Report. Op.cit.

objectivity," as Ted Porter puts it[29]—it is unlikely that Taussig's expert judgment, no matter how respected he was, would have sufficed to justify a particular price decision in front of a court. Instead, the decision had to be supported with explicit calculative rules, presented as relatively simple economic principles.

Economists answer the problem of profit

Taussig's use of the theory of the "marginal producer" can thus be understood as a solution to the problem that had so haunted courts and legislators. The invocation of the marginal producer and the distribution of prices, serve this function not just because it uses a definite quantitative standard, because this mechanical standard mobilizes and contains *a theory of the justification and cause of profit.* The political and legal contradictions of the problem of profit called for an objective solution, which the economist proposed to solve.

The corpus of theorizing now called the neoclassical and Austrian schools, of which Taussig formed an uneasy synthesis, had difficulty with the question of profit. According to neoclassical theory, in a situation of "perfect competition," none of the firms make a profit, since they are all at the point where marginal

[29] Porter, Theodore. 1996. *Trust in Numbers*. Princeton. p.142.

cost equals average total cost—put simply, none of the firms are able to produce more cheaply than the other. Walras famously wrote, "the normal rate of profit is zero." For this reason, Schumpeter resorted to explaining profit by considering the economy as a dynamic situation where profit would indeed disappear if not for constant structural change and "innovation"—hence the postulated centrality of "creative destruction" and "the entrepreneur." It has been noted that Schumpeter, like the neoclassical economists on this point, conflated profit and surplus profit. While variations in demand and price can give occasion for surplus profit, profit is the fraction taken as "remuneration" for capital already included in the price.[30]

In explicit contrast to the methods of the accountants, who measured "accountant's profit," economists wanted to show there was an "economist's profit." In a 1921 book titled *Economics for the Accountant*, Kemper Simpson, an economist for the Federal Trade Commission, explained: "it is probably more dangerous for the accountant to misunderstand the nature of profit than any of

[30] In approaching this question, Harribey (op.cit.) makes critical distinctions when he notes that economists, especially since Bohm-Bawerk, have often confused several different questions; I cite below (pg.146):

> a) Where does profit come from? This question is subdivided into three sub-questions:
> a-1) Of what value is profit the counterpart?
> a-2) In what conditions do firms realize profits and surplus profits?
> a-3) What determines the magnitude of profit or what is the measure of profit?
> b) What is the use of profit?

the other economic categories."[31] What was so dangerous? According to Simpson, when they measured cost of production, accountants were unable to detect the function of the entrepreneur, who was supposedly the recipient of the profit: "the accountant ordinarily thinks of profit as the differential between selling price and cost," but it takes an economists to see the ghost in the machine, the entrepreneur responsible for this profit, and who must be remunerated too. In situations such as government purchases, utility rates, or investigations against monopolies, economists saw the importance of providing their own answer to the question of profit. Taussig expressed this clearly during his economics lecture at Harvard in 1921, when he predicted that a "renaissance of value theory [is] imminent." Among the reasons for this was the "revival of price theory, in [the] distributional sense," which made it "necessary to study causes of rise and fall in profits," in addition to the need for a "broader basis for value theory," to permit "valuation for purpose of rate-making, amortization, taxation," and "valuations in determining rights and justice." For Taussig, the "question arises in confiscation of property by the State, such that economists must ask "what is [the] course of [the] court in determining value in such cases." The question was how, he said in

[31] Simpson, Kemper. Economics for the Accountant. New York, London: D. Appleton and Company, 1921. p.136

apparent reference to his work on the War Board, to "get [the] exact nature of [a] hypothetical market, and work out just return in this hypothetical market."[32]

Economists embarked on a project to specify, through economic reasoning what justified *as a matter of necessity* the existence of the capitalist's profit, as a necessary cost of production. Simpson and Taussig followed roughly the theory of an economist from an older generation, Francis Walker, who was the first director of the Federal Trade Commission. Simpson wrote: "Walker's theory of price and profit enabled the construction of a price-fixed market which could approximate a normal competitive market."[33] What justifies capitalist profit according to this theory is that the capitalist is an entrepreneur. The entrepreneur is considered "the pivot on which production and distribution hinge." Walker "contended that the cost of the marginal entrepreneur, i.e., the no-profit entrepreneur, fixed the price that prevailed in the market." The assumption throughout is that the difference between the production costs of firms was due to the entrepreneur. The cause is neither the "efficiency engineer,"

[32] Johnson, Marianne and Samuels, Warren J. *Economic Theory by Taussig, Young, and Carver at Harvard*. Emerald, 2010. pg. 59-61
[33] Kemper Simpson. 1919. "Price-fixing and the Theory of Profit." *The Quarterly Journal of Economics*. Vol.34, No.1. pg. 158.

as Veblen would have said, nor the productivity of workers, but the demiurge entrepreneur.[34]

Theoretical contortions intensified when economists had to confront the fact that capitalist owners in modern economic organization are stockholders with no managerial function, and that the functions of the entrepreneur are the same as a supervisor or an executive, with the result that this remuneration is a wage like any other.[35] As a result, the positing resulting was conflating capitalist and entrepreneur, or alternatively recourse to two related theories: That profits are a reward for utility the capitalist could have enjoyed had they spent the money invested as a consumer. This makes recourse to a kind of hedonic calculus where social interactions are imagined to be choices with different psychic costs and benefits. Alternatively, the profit is said to be a return on the "risk" inherent to investing. This line of argument replaces a political one with the seemingly necessary relations of the economic sphere. It must be noted that if there is risk in a given investment, it is insofar as there are other less risky investments, or the possibility of not investing at all, of course—but this still does not get at the notion of investment itself, as a purely legal relation establishing lucrative property rights.

[34] Foreman, C.J. 1919 "A Division among Theorists in their Analysis of Profits." The Quarterly Journal of Economics. Vol. 34, No. 1, pp. 114-137

Even here, the problem of profit resurfaces: what *objective, or otherwise apolitical* parameter can determine this rate? The answer appears simple: the average rate of profit. In fact, the Federal Trade Commission had been calculating the rate of profit for individual firms and within industries even before the war in the context of its anti-trust activities. This data, however, was not used in the case of the price-fixing committee. Why this is the case is not exactly clear, but it appears that the rate of profit was too variable. It might also be testimony to the relative weakness of these agencies in front of the courts, or to the distrust of accountant's expertise when determining the rates.

Even if the price-fixing committee of the War Board had included interest on capital as a cost of production, it *still would not have avoided the profit-problem*, because when setting the price artificially and including a standardize rate of return on investment with the capitalist's ownership considered as an investment, it would have been a *de facto* limit on any additional income the "owner" of the firm could have made had prices been set higher, or if political limits had been absent. In normal circumstances, when the private power of the owner is not subject to political pressure in this way, the problem obviously doesn't come to light; the owner takes the surplus profit, or invests it, or redistributes it to employees as wages.

What matters for an analysis of the power relations of capitalist society is that the capitalist tries to keep this power, the control on the economic surplus produced by society. More than pecuniary gain itself, this was at stake. This explains why the figure of the "entrepreneur" was so mythologized, for it was needed to function as a smokescreen, a romanesque character, behind which exploitation could hide, and more important still, so that the capitalist class could maintain decision-making over economic production.

Taussig avoids the problem of power

Taussig's method appeared to both avoid any arbitrary or "political" decision on the question of just profit, and simultaneously mobilized a corpus of economic theorizing that presented the existing social relations, and the decisions of an economist about those social relations, as belonging to the realm of economic necessity. Of course, in practice if there was no return on investment, invest might not be drawn; yet for the historian, something like the category of risk cannot be accepted as a trans-historical anthropological concept. It is in this sense that the language of finance is a functioning mystification—take for example the distinction between "physical" and "intangible" value.

Taussig and his acolytes avoid another crucial question with the explanation of profit contained in their practices: Of what value is profit the counterpart? In other words, how is it that the commodity produced by a firm has a higher value than the value of all the primary costs going into the firm? The unique and well-confirmed answer to this question is that profit corresponds to a fraction on unpaid labor. It is in this sense that J-M Harribey writes that "labor is the only factor of production."

Simpson adamantly rejected the idea that "the entrepreneur's profit arises merely because he underpays his laborers," or that profit exists "only when the wages paid are less than the productivity of the laborers."[36] Yet he also wrote, on the question of price fixing and profit theory, "profit arises when the entrepreneur buys or produces more cheaply than he sells." If the cost of other primary goods is the same for all the firms in question, this observation immediately suggests which "cost" is likely to be pressured downwards, namely, the price of labor power. This question did not pose itself, to be sure, since nowhere during the hearings did the commission seem to worry if the lower cost of some firms resulted from lower wages. The question was not one for the committee, but for other organs of government.

[36] Simpson, Kemper. *Economics for the Accountant*. Op.cit.

Everything happens as if there is a slight-of-hand in conflating profit and excess-profit, to avoid the problem of distinguishing between legitimate and illegitimate income could be avoided. Consider Figure 2, taken from Simpson's book, the FTC economists writing about the work of the price-fixing committee.[37] For Simpson, the category "Cost" includes wages, rent, and interest. Note that the chart would look different if there was a standard rate of profit with excess profit added on above, the former gradually decreasing as the rate of excess profit was reduced.

Consider the remaining ways in which the apparently apolitical method contained reasoning of a political nature. Taussig had identified the problem he was dealing with: "Any price paid uniformly to all producers necessarily meant differences in profits."[38] Some did object that the price-fixing committee should use a method where both low and high cost producers received prices in proportion to their costs.[39] The difference in profits had to be justified, yet was it so obvious that the higher costs of some firms were due to contingent and localized factors. The committee, however, assumed relatively homogenous conditions across the country—Taussig making the apparently unsubstantiated

[37] Ibid.
[38] Taussig op.cit. pg.232
[39] Stoddard, C.F. 1920. "Price-Fixing by the Government During the War." Monthly Labor Review, Vol. 10, No. 5.

assertion that the highest cost firms where the "flotsam and jetsam of economic life." Indeed, the variability of local conditions had posed problems for the food and fuel administrations, which had to use more variable method of price regulation. The Fuel Administration used a different method: They set the "the maximum gross margin" that producers could add onto their costs when formulating a price, but since they were not the purchaser, they did not set one homogenous price. When the government was the purchaser, however, it seems that only a single price was tolerable. There were tensions inherent to the application of a theory assuming perfect competition, not to mention other unmet assumptions, but there were also advantages to this mechanical reasoning, providing rules avoiding political and expert judgment. [40]

Taussig of course understood there could be causes for variability other than managerial ability, entrepreneurial difference or lack thereof: "The high cost of lumber may have been due to a thin and distant forest, or to an inadequate and ill-managed sawmill; the high cost of copper due to mining conditions inherently bad, or to a strike, a shut-down, or bad engineering in the mines. It is all one to the accountant, but by no means all one to the economist."[41] To be

[40] Moreover, as Simpson pointed out, using the average cost will identify the marginal producer only if the costs are normally distributed, which is often not true. Simpson (1919) op.cit.
[41] Taussig op.cit. pg.223

sure, these variations always exist. When a political decision was necessary they posed problem. A similar question had arisen when regulating monopolies, distinguishing between "earned" and "unearned" profits. In this context, some economists opposed "scarcity" profits resulting from unduly constrained supply and "efficiency" profits attributed to better management.

The economist cut the Gordian Knot with a surprising line of reasoning: using average cost instead of marginal cost because there are globally two causes of cost differences, "physical" and "human." When long term differences in cost are due to "forces in nature, not in man," the market price conforms to marginal cost, while differences due to "differing abilities of men," will "conform to average cost." As a result, using marginal cost would reward profit from "natural conditions," while average cost rewards the "entrepreneur."

During his lecture for the 1921 economics course at Harvard, after mentioning Francis Galton, Karl Pearson, and the promising role of biometrics for detecting the biological basis of inter-class differences, Taussig affirmed that "in business profits, the factitious, environmental factors count for less in business than in almost any other occupation of well-to-do. Law, medicine, etc. [are] much more influenced by such factors. Therefore, environmental difficulties [are] less

important and inborn abilities count for more."[42] How highly Taussig thinks of the intelligence, the biological gifts of the "buissnessman" explains how he conceives, ideologically, of the regulating role of the market in weeding out the "inefficient" and rewarding the brilliant.

Aspects of the presentation above might suggest my analysis consists in unveiling that individuals used mendacious reasons merely as cover to justify actions build on other motivations, that the people are consciously developing a false discourse. Any confusion on this point must be avoided for such would be a far too simplistic view of ideology. Bad faith can exist, but at the level of the social, the economic representations invoked, even the more abstract kinds mobilized by the economists are clearly perceived as components of reality, for those who use them. This is why the entity called market is a partially imaginary relation, that quantitative objectivity functions as part of the relations of production.

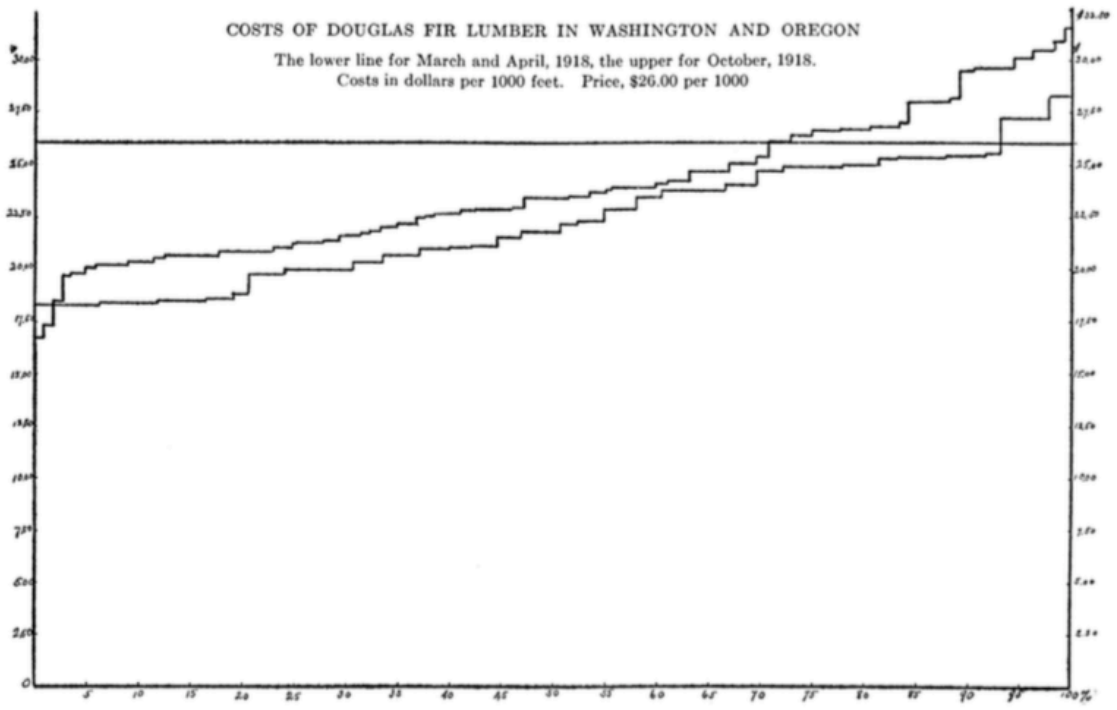
While the war provided a clear case, it was only part of a more general movement of pressure towards quantitative objectivity, a movement conditioned by the contradictions within the capitalist mode of production. Irving Fisher, an economist of at least equal stature to Taussig, and usually credited with introducing to the US a "neoclassical" line of economic thinking, had been since

[42] Johnson, Marianne and Samuels, Warren J. op.cit. pg. 97-98

the first decades of the century developing methods of calculating the cost of things from neoclassical principles. Eli Cook has recently contented that the rise of monetary pricing as a tool to assess policy resulted from the generalization of the particular outlook of the capitalist class, which came to see everything as a "capitalized investment."[43] This thesis moves too quickly, without establishing all the mediations leading from abstract value to generalized monetary valuation: like cost-benefit analysis, monetary valuation gained such a central role not because everything was seen as a potential monetary return on investment, but because the market in capitalist society (by which I mean the *mental entity made possible through* quantification) came to be seen, as a result of pressure for objectivity, as the sphere of the apolitical and the necessary *par excellence.* The economic logic of the market seems to be merely speaking through the economists, whose personal judgment can disappear, yet it is an act of ventriloquy, substituting for politics the austere surface of calculation.

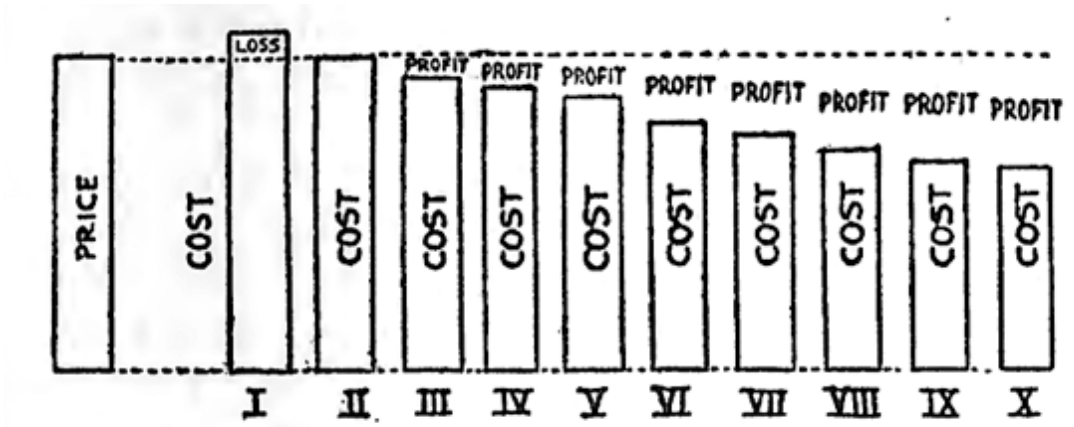
[43] Cook, Eli. 2017. The Pricing of Progress: Economic Indicators and the Capitalization of American Life. Cambridge, Massachusetts: Harvard University Press.

FIGURE 2



Source: Taussig, F. W. "Price-Fixing as Seen by a Price-Fixer." *The Quarterly Journal of Economics*, Vol. 33, No. 2 (Feb., 1919).

FIGURE 3



GRAPHICAL REPRESENTATION OF PROFIT AND LOSS IN RELATION TO COST OF PRODUCTION

Source: Simpson, Kemper. *Economics for the Accountant.* New York, London,: D. Appleton and Company, 1921

Chapter 6:

The Price-Parity Index, Countervailing Power

> And what if all of animated nature
> Be but organic Harps diversely framed,
> That tremble into thought, as o'er them sweeps
> Plastic and vast, one intellectual breeze,
> At once the Soul of each, and God of all?
>
> The Eolian Harp (1795)
> Samuel Taylor Coleridge

In The Grapes of Wrath, John Steinbeck describes the situations brought about by one of the major contradictions of exchange value. In the face of overproduction or insufficient demand, agricultural producers sometimes preferred to destroy part of their crops in order to maintain high prices, Steinbeck describes how "mountains of oranges slop down to a putrefying ooze" while "children dying of pellagra must die because a profit cannot be taken from an orange." To speak of overproduction here is misleading, since society was filled with needs, just as to speak of insufficient demand can only refer to the effective lack of money to purchase in a the segment of the populations with the needs. The market appears here as a force outside humans, an entity to be tamed and

appeased. I have argued that the generalization of abstract labor, its extension in social and geographical space, in the form of exchange value introduced new kinds of contradictions within societies. In the United States, the contradictions of exchange value, were lived as posing "problems of power," especially as a result of the powerful monopolies and trusts arising at the end of the 19th century. In the language of the dominant ideology, economic activity was imagined to provide a kind of foundational normative recourse since it appeared to produce results independently from arbitrary human and state actions. On the other hand, due in part to the increasing concentrations of economic control, it became apparent that intervention of the state was necessary to even approximate the situations supposed by a market ideal. Another form of concentrated power could be seen, in the form of state power. The market ideal itself springs from these two contradictory propositions.

As we have seen, the notion of the Market as a system without political power results from the pressure to generate what could be loosely termed rule-based decision-making. Within the U.S. political system, and returning to the price-fixers of the War Industries Board, the economist Taussig relied on quantitative objectivity integrated into determinate calculative practices to produce a kind of ventriloquy, a hypothetical market. In truth, the more perspicacious reader will see that markets are imagined, that there is no such

thing as a market other than as fantasized realm in the service of anti-politics. Still, this peremptory statement does not exhaust the question.

Avatars of the Market Ideal

The problem of power haunted the legal and political system. It took different appearances: the rates public utilities, the prices set by monopolies, price-fixing for government war purchases, the just level of wages. In all of these situation, when posed in terms of the dominant ideology, was what monetary income stream could be secured from one's property. In this movement, even workers must be conceptually reduced to owners of a "human capital" which they must maintain. In all these cases, however, the market imaginary is not instantiated in the same way. The normative force of the rising economic science was deployed differently depending on the circumstances. During committee hearings and in courtrooms accountants dueled along with economists and their newfound authority. In both cases, however, access to the market imaginary was mediated through the authority of the economist, even if there was pressure to produce explicit calculative rules based in the axioms of an economic science. Extending the logic of this political structure would require, quantitative objectivity to produce a mere "price," where the numbers are intended to remove

the problematic judgments of experts. If, in the case of Taussig's work for the Price Fixing Committee, it was couched a great deal of real discretion in a complex representation of the economic, in other conditions, the underlying economic order supposed to underwrite the normative force of economic science had to be presented more directly in the form of definite numbers. These benefited from their kind of mechanical objectivity and, again, their apodicticity. Index numbers provide an exemplar. I focus on the two of the most striking cases: the cost-of-living index and the index for agricultural price-parity.

The intensely political question of the changing value of money motivated much of the significant research on index-numbers was from its origin in the 1870s. Changes in the exchange value of the monetary standard—inflation or deflation, could be harmful to debtors or lenders, as well as having indirect effects at other loci within society. For instance, changes in the value of money undermined the purchasing power of those paid a constant wage. Francis Y. Edgeworth wrote a series of mathematical and statistical studies on the implications of different calculation techniques of index numbers used to express price changes. As early 1887, Alfred Marshall imagined that money could

continue to be used a medium of exchange, but as a standard of value would be replaced by a fixed unit based on price statistics.[1]

Irving Fisher, an early and major proponent of a mathematical and marginalist economic science, relied on an index number created from price statistics to standardize the value of money. As early as 1913, he defended this plan within the circles of the economic professions, a position which he reiterated after the war based on the instability of prices which it had caused. This was a response to more than 40 years of political turmoil which had followed the reinstitution of the gold-standard in the U.S. following the Civil War in 1879, most famously with the campaign by William Jennings Bryan against the gold standard. Fisher proposed standardizing the purchasing power of the dollar, so that the value of commodities would determine the value of the dollar, rather than the opposite. Fisher imagined an index number calculated at set frequency based on a sample of representative commodities. The index number would then be used to determine the weight of gold that could be purchased with one dollar—the correspondence between the two would be floating, based on the value of the index-number.

[1] See Porter, Theodore. 1986, The Rise of Statistical Thinking, 1820-1900. Princeton, N.J.: Princeton University Press. pp.262-264.

Fisher's plan aligned more closely with the view of money as a commodity, rather than with the quantity-theory of money which he had himself, paradoxically, worked to develop. Before the centralizing effect of the Federal Reserve gained effectiveness during WWI, the state did not have the capacity to control the quantity of money, which explains to an extent why Fisher did not consider this option.[2] What matters for us, however, is that this use of statistics routed to a "center of calculation" already illustrates a response to the particular kind of contradiction we have been tracking: The autonomization of exchange value produces circumstances where any line of action will necessarily harm some and benefit others. Through the construction of an index number, the discretion is exported to instance out of human hands, and apparently turned into economic necessity.

"Inflation comes primarily at the expense of creditors and holders of financial assets, groups that do not as a rule include workers," as Wolfgang Streeck puts it succinctly, this is why "inflation can be described as a monetary reflection of distributional conflict between a working class, demanding both employment security and a higher share in their country's income, and a

[2] Paitikin, Don. 1993. "Irving Fisher and His Compensated Dollar Plan." FRB Richmond Economic Quarterly, vol. 79, no. 3.

capitalist class striving to maximize the return on its capital."[3] In the 1930s, the overtly reactionary and counter-revolutionary ideology of capitalism known as ordoliberalism in Germany and neoliberalism in its other varieties followed the same logic when it theories the need for a central bank totally separate from political power. For them, a liberal economic order had to be defended from democracy. Such reasoning drew on a long line of suspicion towards democracy, which is fear as unleashing a base instinct for democracy—While this argument is often labeled as conservative, it is just as present in the liberal tradition. The "cult of impartiality" discussed in the previous chapter, then, results not just from mistrust of arbitrary discretion, or traditional or charismatic authority, but also shows its darker side as a clear form of anti-politics.

Fisher's plan to standardize purchasing power of the dollar through a variable gold standard would remain fiction, but a similar indexical measure did become central to the statistical structure of American political economy: the cost-of-living index. This index also became a concentrated reflection of the capital-labor contradiction within American society. Why did a statistical indicator seem so appealing to regulate the conflict over wages?

[3] Streeck, Wolfgang. 2011. "The Crises of Democratic Capitalism." New Left Review. 71.

Thomas Stapleford has exhaustively studied the emergence and evolution of the cost-of-living index. He shows that the expression of a "living wage" as a specific number was linked to the arbitration hearings in which unions were forced to negotiate, beginning during WWI. Prior to this, union leaders and "middle-class reformers" had defended the concept of living wage as an abstract ideal which had be determined and negotiated, and which could change (should improve) over time. To fix an exact number would have constrained their potential bargaining, or as Samuel Gompers put it, "the minimum would become the maximum."[4] Until the 1920s, the living wage concept was mobilized mainly for skilled workers, while expenditure surveys were linked to minimum-wage advocacy for "unskilled labor." The first decades of the 20th century were characterized by a middle-class and moderate trade unionism seeking to appease the labor unrest (and violent repression against strikes) through collective bargaining and conciliation (often on a case-by-case basis) between workers and capital.

These efforts towards "class harmony" could only postpone conflict. Continued unrest prompted employers (capital) to push for mediation, which submitted the conflict between the two parties to an "impartial board."

[4] Thomas Stapleford. 2008. "Defining a 'Living Wage' in America: Transformations in Union Wage Theories, 1870-1930." *Labor History* 49, no. 1. P..3

Arbitration "required a self-proclaimed class of impartial experts able to judge the cases, plus (following the quasi-legal analogy) a basic set of facts...all in combination with a method for interpreting the significance of that data"—in other words, "both economic statistics and economic theory, and hence economists themselves."[5] Measuring the cost of living involved too many value judgements for the Bureau of Labor Statistics, such that it eventually abandoned the quest for a fully "objective" standard budget that could be applied throughout the United States. Only in the late 1920s did higher wages begin to be justified as a way to boost consumption. First major capitalists, then the Labor Bureau itself transition to this approach, so that "labor officials began to minimize normative, rights-based arguments in favor of putatively objective macroeconomic analyses that aligned higher wages with business self-interest. The necessary corollary to this move was a greater reliance on economic theory, economic statistics, and left-wing economists who could act as advocates for unions."[6]

The quantification of a cost-of-living, whether to determine a standard budget, or to permit an increase in consumer purchases, provides a scientific answer to the fundamental political contradiction within capitalist society, between those who work and those who possess. In both cases, the question is

[5] Ibid. pg.6
[6] Ibid, pg.14

made objective through quantification, and mobilizes the normative force of "the economic" to settle the question. A demarcation between the economic and political is created. Liberal (including neo-liberal) ideology effaces the inherently political nature of any wage or salary, to the economy as a system of power it substitutes the economy as realm of necessity. As Bernard Friot writes, "a salary is not the counterpart of a stock, whether it be labor-power, human capital, of which the laborer would have property, or whether it be the product of the worker: the salary does not have an objective foundation in a measurable quantity which could justify its level."[7] Economics has generated several theories to fill this terrifying vacuum: for instance, that labor is remunerated in proportion to its marginal contribution to the production function. Such a theory is pure fiction, resting on the systemic confusion of abstract labor and concrete labor. Moreover, when commodities or services produced within capitalist relations are confronted in the sphere of exchange, they do so as quantities of labor-time, but how much a given salary or wage is paid has no necessary connection to the unit value of the commodity produced.

Returning to our major question: What do cost-of-living statistics achieve politically? I suggest they are characteristic of the ideological movement

[7] Bernard Friot. 1998, *Puissances Du Salariat Emploi Et Protection Sociale À La Française*. Paris: la Dispute. p.32.

generated by the contradictions of capitalism, whereby certain political question are rendered objective in a kind of anti-politics. Stapleford seems to accede too easily to the claim of some historians that "consumption-based claims could be direct towards radical goals, and neither the staid formalism of economic analysis nor the attempt to portray reform objectives as natural concomitants of economic growth should be conflated with a simple conservatism." The categories employed prove worthless for an analysis of the function of economic representations. The political function of economic analysis cannot be answered simply by studying the political dispositions of the people using it. Cost-of-living indexes, household budgets, theories of consumer demand, were objectively antithetical to any radical goals, because the theorized the worker as merely possessing a right to a certain amount of purchasing power. According to the "Regulation School" (most notably M. Aglietta), the period in question is when capitalism entered the "Fordist regime," the principle that workers had to be paid enough to become less thrifty consumers, and that the proletariat was in a sense appease by this. Without subscribing to such a view, for indeed the fundamental contradictions are never regulated but continue as process, it is clear that economic data in this particular configuration did little to change the definition of economic value within society, thus was devoid of anti- or post-capitalist dimension. Precisely in

this sense, such economic theory became a mental part of the relations of production within capitalism.

George Peek's quest for Fairness

To grasp the political meaning of indexes, it remains necessary to situate their genesis and function within a concrete situation. The growth of economic statistics also transformed the politics of agriculture. The remainder of this chapter illustrates the link between quantitative objectivity and the market imaginary through the peculiar case of George Peek and his proposed solution to agricultural crises, the agricultural price-parity index.

Peek came to Washington D.C. in 1917 as the vice-president of Deere and Company. From a farming family in Nebraska, had been successful business executive, and was part of the wave of business executives who had streamed into the U.S. capital for official functions during the war. Peek was at first a lobbyist for manufacturers of agricultural implements.[8] Due to his knowledge of this industry, he was asked to join the War Industries Board, where he sat on many occasions along with Frank Taussig. This trajectory illustrates perfectly the mingling of public-servants, businesspeople, and politicians at the

[8] Cuff, Robert D. 1967. "A Dollar-a-Year Man" in Government: George N. Peek and the War Industries Board." The Business History Review. Vol. 41. No.4.

highest levels of government within Washington. As an industrial representative during the WWI, his role was "to help fulfill government needs, but...with the least possible damage to industry."[9] It seems Peek understood that fairness had become a term of art. If owners were entitles to a "fair profit" when the state regulated utility rates, why should the same principle no apply for policies on agricultural prices?

As Peek would have it, a central tenet of American life was at stake, a Jeffersonian idea of independent self-sustained homesteads, living in the conditions of natural equality and basic democracy, due to their reliance on the land, rather than on industry or capital. As the agricultural historian Gilbert Fite wrote in 1952, "the economic and social rewards of agriculture had been declining for over a half century, and the rural way of life had lost prestige;" so that there was the sense that farmers had "simply become gardeners for the rich and powerful industrial community". The problem was that the farmer "continued to operate under a philosophy largely repudiated in both theory and practice by other major groups in the economy." Ironically, according to him, it was precisely their sense of independence which retarded collective action on their part—they were "clinging to the idea of competition," while industry might have used it in ideology but not in practice. As a result, "while farmers were still shifting for

[9] Ibid. pg.408

themselves, business and industry were combining and stabilizing their operations" through the "formation of trusts, holding companies, and other types of combinations." This is arguably what Galbraith would later describe with his concept of "countervailing power," which took long to develop for farmers.[10]

This explains the popularity of price-parity among farmers. The index measured the exchange value of agricultural production by individual farmers during one time period compared to another period, so that each dollar of the farmer's income could in principle purchase the same amount of goods as in previous years. As the representation of the ideal that the farmer should make a living wage, and against the decline of farmer's income through the 1920s, it became a rallying cry for farmer's groups, social scientists, and politicians. For administrators under Roosevelt, the goal of agricultural programs was to "bring prices back up to parity," so that the measure of parity became a central factor in how action was carried out. The definition of parity used in the Agricultural Adjustment Act of 1933 was that a parity price is one which "will give agricultural commodities a purchasing power with respect to articles that farmers

[10] Fite, Gilbert C. 1954. George N. Peek and the fight for farm parity. University of Oklahoma Press. Industry was more successful at establishing it. An example of price stabilization in business is seen in the figures for the depression period from 1929 to 1933. During those years, the price of agricultural implements and motor vehicles dropped only 6 and 16 percent respectively, while production was cut 80 per cent in both industries. In the case of agricultural commodities over which there was not similar control of price and production, prices declined 63 percent and production only 6 percent

buy, equivalent to the purchasing power of agricultural commodities in the base period..." from 1909 to 1914.[11] The AAA was designed to implement programs seeking to maintain prices at parity 100—meaning that farmers would have the same purchasing power as they had on average during 1909 to 1914. Parity price was achieved through control of the amount of crops produced per year, storage of surplus crops, dumping of surpluses on foreign markets, or compensating farmers not to produce certain years.[12] The price-parity index became the norm organizing means and ends at the AAA.

Constructivist worries about numbers

The price-parity ratio was the subject of early constructivist awareness, and even self-consciousness. A 1929 issue of the Pittsburgh Press newspaper reported that "barbs of satire at the fall dinner of the Gridiron Club" lambasted "high officials from President Hoover," assuring them that "the forthcoming arms conference would assure parity by a magic yardstick—the same yardstick that

[11] Agricultural Adjustment Act, 1933. As cited by Shideler, James H. 1953"The Development of the Parity Price Formula for Agriculture." Agricultural History 27 (3) 77-84.
[12] Murray Benedict. Farm Politics of the United States 1790-1950: a study of their origins and development. New York: 20th Century Fund. 1953.

was used to place agriculture on a parity with manufacturing."[13] The apparent contingency of the index was often the target of ridicule.

When the first parity-like indexes were developed in the 1921-22 Report of the Joint Commission of Agricultural Inquiry, such an index could only be created based on other pre-existing indexes. "It was apparent from the beginning" the Commission wrote, that they "could not hope to make the original investigation necessary to a conclusive report" without consulting the pre-existing infrastructure for collecting agricultural statistics. Thus, "the method pursued by the commission in securing the data necessary for its conclusions was to set up contacts with the various government and private agencies through which the information could be obtained"[14]—and then organizing the data into something useful for their purposes. When reading the relevant reports from Congress, it becomes impossible to construe the process as a discovery of economic disparity. Rather, impassioned eyewitness testimony made the dire situation clear, and the aim was to quantify the crisis.

In 1953, Shiedler attributed its appeal to its "hocus-pocus numerical certainty" and "rough idea of fairness"[15] in the eyes of farmers. Likewise, John D.

[13] The Pittsburgh Press, Dec. 15-1929.
[14] US Senate, Report of the Joint Commission of Agricultural Inquiry. 1922.Pg 15.
[15] Shideler, James H. 1953"The Development of the Parity Price Formula for Agriculture." Agricultural History 27 (3) 77-84

Black's 1942 book "Parity, Parity, Parity" evinced strong constructivist awareness. The Harvard economist was of the "agricultural intelligentsia" described by Kirkendall: a social scientists close to the problem of farmers, but with an understanding of economic questions as well.[16] Black's claim was that no parity index system based on a single, unchanging base period could work effectively. He first reminded the reader that "if there never had been any statistical collecting data on prices of farm and other commodities, there never would have been any 'farm parity'."[17] Black admitted that "readers of this chapter will find their heads in a maze" if they asked, "of what use can statistics and index numbers be as a guide if, by juggling weights and the like, a 1921 parity ratio is first 61, then 77 in Chart I, then 74 in Chart III, and finally 82 in Chart IV?"[18]

Black asked a fundamental question: How can an index be something of use if it so moldable depending on intentions, by pressures to make the index in favor of some groups, to the detriment of others? But immediately he recoiled from the implications of his own question, making it clear "that none of these changes was made deliberately to make a case for or against the farmers."

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[16] Kirkendall, Richard S. 1966. Social Scientists and Farm Politics in the Age of Roosevelt. University of Missouri Press.
[17] Black, John D. 1942. Parity, Parity, Parity. Cambridge: Harvard. pg. 45.
[18] Ibid pg. 50

"Statisticians" are not to "be blamed when economic facts change"—indeed, "the statisticians can do nothing honestly and scientifically but record the effects of it in their index."[19] Black simultaneously displayed an awareness that the price parity index was constructed and an inability to reconcile this observation with the need for "real" social facts. Black's argument provides a glimpse into how the "agricultural intelligentsia" viewed their task during this period. Yet history suggests parity was not a product of detached economists doing their scientific work. It was born out of a process of valuation and social constraints, and guided by specific concerns of the Congressional Commission.

Behind the constructivist critique is the observation that parity could have come to represent any number of value judgments. What are the "value judgments" in fact contained by the agricultural parity index? In 1951, as the question of parity was still a serious political issue, Robert Tontz, an academic in the US Department of Agriculture wrote that "the significance of value judgments in agricultural policy is demonstrated by the esteem with which the base period concept is regarded."[20]

In 1933, two economists working at the Agricultural Adjustment Administration explained why Congress deemed suitable the 1910-1914 base

[19] Ibid pg. 50-51
[20] Tontz, Robert L. 1951. "Origin of the Base Period Concept of Parity—A Significant Value Judgment in Agricultural Policy". *Agricultural History*. pg3

period: "If prices of farm products had maintained their previous trend, by 1933 the normal purchasing power of farm products would have been between 100 and 105 percent of the level reached in the period from 1910 to 1914 instead of only 65." In other words, increasing prosperity was the trend—the downturn was merely anomalous. Moreover, "the period from 1909 to 1914 represented one of considerable agricultural and industrial stability," along with "a good balance between the production and the consumption of each product with equilibrium between the purchasing power of city and country." [21]

For agricultural economists, then, the years 1910-1914 were the "Golden Age of agriculture," a time of prosperity for farmers. It is difficult to look at the base period without recognizing an effort to freeze time. Captured in the parity concept, in the economic laws that govern its measurement, is a striking value judgment: the period from 1910 to 1914 is an ideal, and policies should strive to recreate this period of prosperity for farmers. Agricultural incomes are still expressed in terms of their ratio to 1910-1914. Once adopted, standardized measurements can be hard to modify without revamping the entire system. The index was so deeply entrenched in the functioning of agricultural programs that it was easier to change the use of the index number and its method of calculation

[21] Bean, L. H. and P. H. Bollinger. 1939. "The Base Period for Parity Prices." Journal of Farm Economics, Vol. 21, No.1.

rather than the index itself. While the parity measure was used for subsequent decades, and in spite of proclamations, "a goal of 100 percent of parity has never been a part of government policy"—it would be simply impossible to implement.

The base period set a certain type of prosperity, a certain relation of the farmer to the rest of the economy, as the ideal. This traditional view held that farm labor should allow farmers to trade their goods for certain other vital goods. This moral economy takes for granted that there is an exchange value for one's work and agricultural product independently of fluctuating market prices—this notion of exchange value is prior, then, to a free market which allows price to be set by demand and supply. As an expression of this moral economy, the price parity index also came to represent a basic idea of fairness and equality.

George Peek's 1922 pamphlet "Equality for Agriculture" argued for the implementation of parity not on the grounds that it was an especially accurate statistical measure, but on the appeal that the very idea of equality was at stake. Impartiality was a stronger argument than accuracy. George Peek, the first Administrator of the Agricultural Adjustment Administration (AAA) beginning in 1933 (although he was later forced to resign in favor of Henry Wallace), had been the author of the famous pamphlet "Equality for Agriculture," which was the catalyst for an impassioned call for agricultural parity. He was described as

nothing less than a "devout worshippers of the parity principle," who "preached it from one farm's end of the land to the other—from every rostrum he ascended."[22]

The index was advertised as the solution to impending disaster. If America failed to embrace price parity's embedded values of equality and fairness it would, according to Peek, "become a nation of wage-earners and tenants tending towards peasantry." America would "lose the independence and self-reliance of farmers." Documents in support of parity during this period are filed with rhetoric relying on the idea of "fairness" for farmers, but also "fair exchange value." To reject parity for agriculture, Peek continues, is to court communist revolution: "Red doctrine thrives in industrialism. It fails in a community of land owners. There was never a red upheaval without an agrarian question. We are rapidly incubating such a question. The essence of our political genius flows from a land-owning agricultural community and we cannot afford to depart from it into political fields unknown where, as yet, all is chaos and uncertainty."[23] Just as Didier (2009) saw in the methods of the New Deal statistical survey embodiment of federalist and democratic ideals,[24] so to in parity we may find other American

[22] Black, John D. op.cit. pg. 53.
[23] Peek, George N. and Hugh S. Johnson. 1922. "Equality for Agriculture."
[24] Didier, Emmanuel. 2009. "En quoi consiste L'Amerique?: Les statistques, le new deal et la democratie." Paris: Editions la Decouverte.

ideals: independent, land-owning farmers who are able to live decently from their work.

By choosing an index, calibrated to the base period, price parity made another clear value judgment: stability was more important than economic expansion. In his study of south-Asian subsistence farmers, James Scott notes that "subsistence-oriented peasants typically prefer to avoid economic disaster rather than take risks to maximize their average income."[25] The "moral economy" of the American farmer before the New Deal appeared to include similar, arguably pre-capitalist, ideas. The price parity index guaranteed return on basic investment and a modest income through farming, but it sacrificed the possibility of higher income when prices were unusually high.

The Price Index as Aeolian Harp

The price parity index was a statistical black box, serving to regulate agricultural economic policy. As the proto-constructivist critiques of the price parity index demonstrate, there was much negotiation before the box could be closed. The price parity index was constructed through a series of "value-

[25] Scott, James C. (1979). The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia, Yale University Press.

judgments"—not only about how it should treat the inputs, but also about the inputs themselves.

The argument for the index was a deliberate effort to black-box a set of values in the moral economy of the American farmer. By arguing for parity, according to the historian Murray Benedict, "the farmer was merely seeking to approach his problem in the same way...he had been trying to do...since the early 1920's."[26] The index promised to keep prices synchronized with the rest of the economy so that farmers could be guaranteed the ability to sell their crop. But George Peek's argument was primarily concerned with finding a way to express "fair-exchange value." This sense of exchange value was moral. Fair-exchange value had a specific meaning for Peek. "When supply equals demand," he writes, "price is usually cost of production plus a profit. But both supply and demand fluctuate with price." On the other hand, fair exchange value is the worth of a thing in terms of those things for which it is exchanged. Peek thought that while prices change with supply and demand, there is a point at which price can no longer drop without going below the "fair-exchange value"—which, for its part, is unchanging and can be determined for any agricultural good. With this conception of exchange value, Equality for Agriculture proposed parity to defend

[26] Benedict, Murray R. 1953. Farm Politics of the United States 1790-1950: a study of their origins and development. New York: 20th Century Fund. Pg 278.

American ideals against what Peek perceived as Communist threat: Peek denounced the most leftist members of the administration as "commie chicks." There is no irony if we recognize Peek as representing a unique normative view about the organization of markets, precisely developed as a necessary rival to labor demands the context of the mass paranoia of the Red Scare's a propaganda program. Peek's concept attempts to reconcile the socialistic values of the farmer's moral economy with other American ideals, and can be seen as an effort to nonetheless defend the moral economy in an institutional climate unfavorable to direct government control of prices.

Peek's conception of fair-exchange was the crux of his argument for the price parity index. Since "fair exchange value is the worth of a thing in terms of those things for which it is exchanged...some ratio between the price of wheat, for instance, and the general price index, gives a price for wheat at any particular time which expresses its worth in terms of those things for which it is exchanged." He concludes that "general price indices, or the varying weighted average of all, or a majority of commodity prices expressed in index numbers, give a true picture of the fluctuating scale of relative values." Peek thus contrasted the plasticity of a price index against the inflexibility of price-fixing. The index was supposed to capture the very essence of what a farmer deserves for his product.

The claim was that indexes express norms of the market better than the eternal laws of supply and demand, and better as well than a strict command economy. By black-boxing price parity, the fair exchange value was shielded as a normative element from both markets and politics. For Peek, the price parity index "is as a harp of the winds, exposed to the free play of every economic influence and guarded at every point from human touch." To guarantee that only the invisible economic winds play the harp, "the controlling formula should be fixed by statute and thus completely removed from human or partisan control." Thus, the "formula for computing fair exchange value" is a way for "expressing a pure economic relation of values." [27]

Why was the image of "a harp of the winds" so appealing? Peek wrote Equality for Agriculture in 1919. By 1922, a Congressional Report on the agricultural crisis had adopted his concerns, holding that "the renewal of conditions of confidence, and industrial as well as agricultural prosperity is dependent upon a readjustment of prices for commodities to the end that prices received for commodities will represent a fair division of the economic rewards."[28] The concern for fair exchange, however, had to be balanced with the conviction that "these conditions cannot be brought about by legislative formulas but must

[27] Peek, George N. and Hugh S. Johnson. 1922. "Equality for Agriculture." pg. 14-18

be the results for the most part of the interplay of economic forces."[29] To the legislators, there may have been paradox, but no contradiction. Still, on a standard account of the market, such principles already appear to be an admission of defeat, since the market is already supposed to achieve the "fair division" of "economic reward." The price-parity formula was particularly compatible with pressures for fair-exchange, but simultaneous reticence towards direct government control, because it seemed to embody a measure that was not just imposed by fiat. Against ideas of the free market, moral-economic considerations could only enter in the form of a statistical index. The second condition posed by the legislators is the most interesting, requiring the extension of the impersonal mechanism, an extension of the market form, a second economy composed not of prices but of indices, an extension of the quantified economic domain to avoid the "problem of power." People do not play an Aeolian Harp. Quantification implied impartiality. The full political role of quantification emerges here: farmers saw the index as embodying key tenets of their moral economy, and protecting these by placing them above the legislative and administrative process.

Agricultural economy theorizes Power

[29] US Senate, Report of the Joint Commission of Agricultural Inquiry. 1922.

In 1952, John Kenneth Galbraith penned American Capitalism, a popular book analyzing the development of American capitalism using his concept of "countervailing power." Galbraith thought that the farmer had no market power, so needed to develop a system of countervailing power—which is to say, a way for the farmer to control the prices of his own production. It is telling that he takes as a central example "the case of agriculture": the long history of how farmers searched for a "formula for expressing effective countervailing power."[30] For Galbraith, markets were as much a question of power as any other sphere of social activity. Market power, for him, meant being able to exercise control over the prices at which a producer sells their own product. The question is one of control over prices. As Galbraith saw it, the conditions of early capitalism matched more closely what he describes as the "competitive model"—the conditions which much of "laissez-faire" thinking assumes—but from this original position, industrial produces came to agree on prices, basically giving up the destructive effects of price warfare. Agriculture, however, remained fragmented, and suffered from an asymmetry of information. At first the USDA used statistics to try to make a "laissez-faire" solution to the problem of information.[31]

[30] pg. 155. Galbraith, John K. 1952. "American Capitalism: the concept of countervailing power." Houghton Mifflin.
[31] Didier, Emmanuel. 2012. "Cunning Observation: US Agricultural Statistics in the Time of Laissez-Faire." History of Political Economy 44.

Galbraith sees the "impersonally determined price" of Say's law as a political mechanism, rather than just an economic one, to deal with what he calls the "problem of power." Not surprisingly, Galbraith couched his analysis in a long critique of free-market liberalism, of the "competitive model," which no longer holds given the structure changes which capitalism has undergone:

It is a measure of the magnitude of the disaster to the old system that when oligopoly or crypto-monopoly is assumed it no longer follows that any of the old goals of social efficiency are realized. The producer now has measureable control over his prices. Hence, prices are no longer an impersonal force selecting the efficient man, forcing him to adopt the most efficient mode and scale of operations and driving out the inefficient and incompetent.[32]

This description shows the extent to which Galbraith was situated within the same problem-situation as jurists like Hale who had theorized the economy as a system of power.

Galbraith was writing specifically about the monopolistic consolidation that took place in industry, rather than agriculture. While his economic theory was critical of the "competitive model," it also did not follow the usual response of liberal government which tried to break up monopolies to maintain conditions of original competition. Indeed, the standard program of progressives during what

[32] pg.43. Galbraith, op.cit.

is now called the progressive era, starting in the last quarter of the 19th century, was trust-busting. The solution, according to Galbraith, is not trust-busting, because conditions of oligopoly—which is to say, the end of price warfare—are necessary and desirable in the development of advanced economies.

Galbraith is better known as a prominent advisor in the Kennedy administration, the author of generalist books on economy, but it would be fair to say that he was, which is less known, a product and member of the agricultural intelligentsia. During his training in agricultural economy at UC Berkeley, he was the leading expert on the economics of bee keeping in the American west.[33] During these years, Galbraith worked on projects at the Gianni Foundation of Agricultural Economics at the University of California, where he became friends with J.D. Black (of Parity, Parity, Parity) who was also at the foundation, and John Steinbeck, another writer close to the farm crisis. Black was, as we have seen, searching for a way to find a way for farmers to achieve "countervailing power." Consider how Galbraith tells the history of the agricultural question:

With almost revolutionary venom, the farmers of the early seventies [1870s] turned on the railroads, commission merchants, warehousemen, farm machinery companies and merchants with whom they did business. In seeking

[33] Conversations with History. [ShowID: 7126]. University of California Television, 1986.

regulation of these enterprises the Grangers saw, quite clearly, that they posses market power which the farmer did not have. To quote the historian of the movement, "Just as the price which the farmer received for the commodities he sold seemed to him fixed by those to whom he sold, so also, he felt that the price of his supplies was fixed by those from whom he bought."[34]

Already in 1913, when Solon Buck wrote the history of the movement, the question was about prices. But it was not until the Depression that we would see "all the modern arrangements for exercise of countervailing power by and on behalf of the farmers."[35] "For the businessman and the political philosopher, by contrast, the appeal of the competitive model was its solution of the problem of power. This is still the basis of its hold on the American conservative. Indeed, for most Americans free competition, so called, has for long been a political rather than an economic concept" because "the privilege of controlling the actions or of affecting the income and property of other persons is something that no one of us can profess to seek or admit to possessing."[36] These kinds of decisions were only accepted if administered through an impersonal mechanism. The price parity ratio provided a solution to the problem of power, which is to say removing the

[34] pg.159 Galbraith citing: Buck, Solon J. 1913. *The Granger Movement*. Harvard Press. pg.18
[35] Ibid. pg132
[36] Ibid. pg. 24-25

apparent arbitrary of the political decisions by displacing them into the realm of the necessary.

Much of the contemporary literature on the role of state action in New Deal agriculture has centered on the role of "interest groups" in shaping state action or state capacity for action. The debate is relevant in our considerations of which political interactions played into the construction of parity. According to Skocpol and Finegold, the failure of the National Industrial Recovery Act (NIRA), especially when compared to the success of the Agricultural Adjustment Act (AAA), can be explained by differences in "state capacity" within the two economic realms. According to the authors, why the AAA was quickly more successful than the NIRA cannot be explained with "social determinist" explanations such as "conventional pluralism" or "conventional Marxism." The pluralist theory is that "the best organized groups in society" would eventually "be the ones to achieve their political goals in the 'governmental processes", while the Marxist theory appeals "to capitalists' direct control over the state or political resources" in order to explain the success of their political goals.[37] Reviewing of the evidence, however, Skocpol and Finegold conclude that "in neither the case of the Adjustment Act or Recovery Act can the demands, the

[37] Skocpol, Theda and Kenneth Finegold. 1982. "State Capacity and Economic Intervention in the Early Neal Deal." Political Science Quarterly 97 (2).

organization, or the class economic power of social groups directly explain the results of the New Deal government interventions."[38] Instead, they argue that we need the distinct concept of state capacity to explain the difference: state capacity was greater in agriculture than industry. The question, then, is one of the availability of statistical knowledge about the workings of a particular sector of the economy—and the presence of individuals with this working knowledge. The authors cite Schumpeter's analysis that there was no "skilled civil service" or "experienced bureaucracy" with regards to industry, and the claim by Galambos that "when the recovery program began, the government did not have much more information than it had during the first World War."[39] This is contrasted with the "public intelligence and governmental machinery" available to the AAA.

The period from 1890 to 1930 saw the boom of agricultural sciences. [40] Beginning in 1987 the Hatch Act funded agricultural stations, while later the Smith-Lever Act of 1914 would promote cooperative extension services in each state. The goal of these acts was to develop agricultural colleges which could act at the local level to teach better agricultural practices to the public.[41] According to Skocpol and Finegold, the advanced development of a state-supported social

[38] Ibid.
[39] Galambos, Louis. 1966. *Competition & cooperation; the emergence of a national trade association*. Baltimore,: Johns Hopkins Press. pg 251
[40] Kirkendall, op.cit.
[41] Benedict, op.cit.

science of agriculture allowed "farm pressure groups [to use] government-collected statistics to highlight the disastrous decline in farm income"; where "agricultural experts were willing to make policy for, rather than just with, the farmers and their organizations"; and this situation meant "agricultural experts could devise policies with means, and even goals, beyond those directly advocated by farm pressure groups."[42] Considerations on state capacity aside, there can be little doubt that the development of agricultural social science before the New Deal represents a unique interaction between state, academia, and farmers. It is only within this context that the parity concept can be understood.

Sheingate countered what he called the "standard treatment of American politics" which argued against agricultural politics as "clientele politics", where a small number of interest groups are able to exert power on a focalized aspect of policy: as he tells it, the view "where producer interests successfully 'captured' public policy".[43] Much of the analysis of agricultural policy since the New Deal has portrayed farm policy as a product of a simple relationship between farmer's interest groups and representatives who waveringly gave in to this pressure. Quantification was a tool not just for agricultural economists, but also for

[42] Skocpol, Theda and Kenneth Finegold. Op.cit.
[43] Sheingate, op.cit. Pg. 4

farmers who recognized it as a way to protect certain values from both political and market forces.

The recourse to statistics here, in the US of the 1930s has structural similarities to the use made of them within the state and capital nexus of 1930s Italy. Statistics is presented explicitly as an answer to any communist or socialist menace.[44] The solution characteristically avoids the question of economic value, any alteration to the relations of production, without still avoiding the class question, instead positing a kind of class alliance leaving capitalism unchanged. The comparison should not be overextended. what interests us here is the unique function assumed by quantitative objectivity within American capitalism and its political superstructure. The dream animating the vision at hand is of a capitalism purified of confounding, disruptive elements. This implies the survival of the market system, but regulated in order to survive, but regulated by its own parameters, by statistical systems removing arbitrary in private or political decisions (this is what Galbraith refers to as the problem of power). Class conflict, or economic conflict more generally, is solved by the index number, fairness—to use an actor's category is hypostatized as a harp of the winds within the political system.

[44] Prévost, Jean-Guy. 2009. *A Total Science : Statistics in Liberal and Fascist Italy*. Montréal: McGill-Queen's University Press.

CHAPTER 7:

THE PLAN, THE TAMING OF CHANCE?

To the extent that Leon Walras' general equilibrium had any social existence, and thereby reality, it was as intervention in political argument, positioning the market system as a series of mathematical equations in order to justify very specific political claims, for instance about the value of land.[1] The general equilibrium ideas, however—at least in their early marginalist forms—were of limited use to establishing operational control over productive activity. Not surprisingly, then, capitalism faced with crises developed other forms of economic representations in attempts to supersede the contradictions of the value-form. This story has been told as the state taking an increasingly important role as regulator of capitalism, or as the rise of "Keynesian" policies.

In a developed capitalist society, individuals relate to the each other as possessors of exchange value. The contradictions brought about by the separation of individual producers and consumers, relating to each other only through the medium of exchange value are temporarily suspended through the use of money.

[1] Walras, Léon. Études d'économie sociale; Théorie de la répartition de la richesse sociale. (Lausanne: F. Rouge, 1896).

Money thus appears as the negation of the contradictions persisting between the individuals it mediates. But as Marx shows in the *Grundrisse,* this negation is both illusory and temporary. Since the sphere of circulation is only a moment of the reproduction and accumulation of capital, when money—as the negation of social contradictions—must confront the productive process again in order to continue existing, the contradictions burst forth.[2] Thus, money can be thought of as a means supposed to annul the social contradictions of capitalist production, even while it introduces new contradictions. Quantitative representations of production and exchange relations (of the economic), in their existence as social relations, likewise aim to supersede the contradictions which money could not annul.

The economic policy of France during the post-war decades was centered on the three-year Development Plans. In these decades, French politics was characterized by a long co-habitation of Gaullists and Communists, the two political parties most active in the resistance to German occupation, who emerged politically victorious at the liberation. While there was in fact no alliance between these two political forces, they nonetheless produced a supposedly joint program, CNR (the *Conseil National de la Résistance*)

[2] Marx, Karl. *Grundrisse: foundations of the critique of political economy*. (Baltimore: Penguin Books, 1973).

instituted in March 1944. The program implied both the premises for a genuinely new mode of production and more prosaically, programs rooted in a long French tradition of involvement in the major productive capacities. The post-war decades saw the state occupying a major role: major industries were nationalized or re-nationalized along with insurance companies and banks, and monetary policy was under the control of the state which now became a kind of investor and banker, as the treasury was used to invest in the public sector and major industries.[3]

French planning owed its inspiration in part to the success of the USSR and its wartime plans, which had seemingly allowed a nation with initially comparatively underdeveloped productive capacities to defeat the industrial might of the *Wehrmacht* during WWII. The growth plans permitted by the nationalization and funding of major industries were particularly important to the French Communist Party, who saw increased production as a way to escape dependence from US tutelage. French owners of means of production viewed this tutelage more favorably, if only because it promised a way to suppress communist participation in the government. There was from the start liberal and Gaullist hostility to the CNR programs. This explains the paradoxical and shifting

[3] Quennouëlle-Corre, Laure. *La Direction du Trésor, 1947-1967 l'État-banquier et la croissance.* (Paris: Comité pour l'histoire économique et financière de la France, 2000).

character of French planning, from aiming towards the socialization of production to something more akin to a social-democratic state-supervised capitalism, similar to programs in comparable western nations.[4]

Economic politics was characterized by the tension between the two major political factions, and this at the direction of the Plan itself. Still, there was also pressure from economic liberals within, and from without, the exigencies of the US. The first Plans were centered around reconstruction, on organizing distribution of Marshall Aid funds. The U.S. was interested in arranging a Europe compatible with its now global ambitions. It follows that the first director of the Plan was the American-friendly Jean Monnet.[5]

Within this context, the INSEE—the national statistical organ of France—was created in 1946, with the production of national income accounts as its major mandate. These statistics measured national production and were central, according to Mattias Schmelzer, to the establishment of what he calls the "growth paradigm." This paradigm might be summarized as an effort to align nations, different factions of the capital, around a common program, attempting thus to supersede the contradictions arising from intra-capitalist competition.

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[4] Desrosières, Alain. "La commission et l'équation: une comparaison des plans francais et néerlandais entre 1945 et 1980." (*Genèses*, no. 34, 1999: 28-52)
[5] Lacroix-Riz, Annie. *Le Choix de Marianne les relations franco-américaines, 1944-1948*, *Histoire*. (Paris: Éd. Sociales, 1986).

Still, the importance of the Gross Domestic Product as measure has been relatively minor, even while it has attracted much academic attention.[6]

On the other hand, to the extent that post-war reconstruction was organized by state planning, the national income numbers were of great importance. The quantities measured by the national accounts formed the substrate, among other data, from which the planners built their projections and based investment decisions. In this situation, macro-economic modeling became possible, although it is significant that formal models only timidly entered the planning offices several decades later, at least in France. But the push to homogenize the national income accounts was also expression of US "soft power," to the extent that they became monitoring tools for the International Monetary Fund and other institutions of the post-war Bretton Woods order; the tutelage under which European nations would long remain.[7]

The Commissariat of the Plan was staffed by engineers and economists trained at a few select *grandes écoles*: the *Écoles Polythechniques*, the *Écoles des Mines*, and newly created *École nationale d'administration*. Technocracy is said

[6] Schmelzer, Matthias. *The hegemony of growth : the OECD and the making of the economic growth paradigm*. (Cambridge: Cambridge University Press, 2016).
[7] Lacroix-Riz, Annie. *Aux origines du carcan européen, 1900-1960 la France sous influence allemande et américaine*. (Paris: Éditon Delga, 2014). The foundational document setting the standards and categories for national accounts to be used in international comparison is: Richard Stone. *Measurement of national income and the construction of social accounts*. (Geneva: United Nations. League of Nations. Committee of Statistical Experts, 1947).

to be the rule of experts, yet to what extent did they rule? The economists at the Commissariat of the Plan had an autonomy analogous to that of the French engineers of the *Ponts et Chaussée* in the 19th century. Until the early 1970s, neither cost-benefit analysis nor formal economic modeling was used in any rule-bound way in the selection of investment and infrastructural projects. The technocratic nature of the Plan did not mean that it decided independently of political control. Still, the decisions, including those on specific projects, making up the budgetary dimension of the Plan, were shielded from the overt challenge of the legislator. This was in keeping with weak role of the parliamentary branch in the French Fifth Republic. The government—in the precise sense of the executive power in place at a given time—had a direct hand in shaping the content of the Plan, in largely backroom negotiations.[8]

To the extent that these experts "applied" economic science, it was in a complex process of judgment, in dialogue with other considerations, including directly political decisions. In this sense, the objectivity of numbers and models was not called upon to re-assert the border between the economic and the

[8] The literature on French national accounting and planning is vast. Some classic studies are: Fourquet, François. *Les Comptes De La Puissance Histoire de la Comptabilité Nationale et du Plan.* (Paris: Encre, 1980); Terray, Aude. *Des francs-tireurs aux experts: organisation de la prévision économique au Ministère des finances, 1948-1968*. (Paris: Comité pour l'histoire économique et financière de la France. 2002); Vanoli, André. *Une Histoire De La Comptabilité Nationale*. (Manuels Repères. Paris: la Découverte, 2002.)

political. While this border remained eminently real by virtue of the relations of production firmly in place, state power was in fact asserting a much greater force over the economic.

The Plan as a "substitute"

Quantitative tools used by French planning instituted new relations, which economists began to think of as a substitute of the market, instituting the imagined properties of the market. The role of the Plan was to "anticipate future production levels (only a few years out) that had to be attained by the core industries and the level and type of investment that would likely be required to achieve the anticipated production."[9] In the late 1940s, few formal tools were used to achieve this, although there was already a system of data gathering for year-to-year comparisons.

As early as 1955, however, the newly created service of financial and economic studies at the Plan began using the input-output system devised by Wassily Leontief, an economist who had emigrated from the USSR to Germany, then to the United States. Dividing the economy into various sectors—for example, motor vehicles, rubber, glass products etc.—a table was constructed representing how the materials produced were allocated to the different sectors.

[9] Aujac, Henri. "Leontief's input-output table and the French Development Plan." In Erik Dietzenbacher, and Michael L. Lahr. *Wassily Leontief and input-output economics*. (Cambridge: Cambridge University Press, 2004) 68.

In the table, "the horizontal rows of figures show how the output of each sector of the economy is distributed among the others. Conversely, the vertical columns show how each sector obtains from the others its needed inputs of goods and services." "The input-output table thus reveals the fabric of our economy, woven together by the flow of trade which ultimately links each branch and industry to all the others." The relation between the two, expressing the "fundamental relationship between the volume of the output of an industry and the size of the inputs going into it"[10] can be written as a ratio, which Leontieff called the "technology ratio."

Born of the questions faced by the soviet economy, these tables were widely used in the planning offices of capitalist countries. The U.S. Department of Commerce began using them in 1958. Leontieff called the input-output tables a "bridge between theory and facts in economics....the effect of an event at any one point is transmitted to the rest of the economy step by step via the chain of transactions."[11] Thus, while the tables give a static picture of production at a given time, using the coefficients one can imagine the way changes in production levels of one good alter other sectors of production. Notably, whether a "market" exists at all is not important in this representation of the economy. In France,

[10]Leontief, Wassily. *Input-output economics*. (New York: Oxford University Press, 1966) 15. Reprint of an article first published in 1951.
[11] Aujac, "Leontief's input-output table and the French Development Plan." 24.

the service of financial and economic studies (SEEF) used an accounting system which "required three interrelated tables expressed in value terms: the economic table, the financial table and the Leontieff table. This intricate set of tables was not easy to manage, since it was necessary to account for the interdependencies of data among the tables."[12] Claude Gruson, the first director of the INSEE, objected to the anglo-american model of national accounting; he sought a system that linked the entities from which the number came to the monetary and commodity flows, rather than assigning them to the broad "Keynesian" categories.

In what sense did the production of these Leontieff tables produce a new social reality? By going beyond their function as mere representations to their existence as social relations, we see that the production of the data itself was understood by the administrators to constitute part of the action intended. Henri Aujac, who oversaw the application of the input-output tables during the third Plan in 1957, describes, for instance, how the data production of the Steel Industry Committee "brought together, besides a few managing directors, representatives of steel's industry association, of other industries that provided the steel industry with raw material or machinery, of the major steel-consuming industries...as well as tradesmen in the metal products industry and the like. A

[12] Ibid. 72.

few trade union workers, most of them belonging to the CGT, joined the Committee as well." He continues: "Whenever steel firm representatives had to define the volume of production to be achieved at the end of the Plan, they would inquire from the delegates of the supplying industries whether enough coke [coal-based fuel] could be produced in France to meet the demand of the steel industry...They would talk to their customers about the efficiency of the new steel, the quantities required, and prices. They would ask them for delivery schedules and their needs for specialty steel, glass, plastic and other substitute materials. They wanted to know their demand for workers by occupation and skill. Workmen, through their unions, played their part in the main discussions and very often gave sound advice on solid grounds."[13]

This was, *inter alia*, a process of market research not unlike what large private firms had conducted for a few decades. While the production forecasts of small and medium firms did not "meet the requirements of being categorized as mandatory Plan targets," Aujac writes, "the small and medium-sized firms were, unexpectedly, the largest users of our draft report." This was not surprising, since "the small and medium-sized firms were generally too poor to set up forecasting offices, and their industry association could not afford to create one."[14] The

[13] Ibid. 77
[14] Ibid. 78.

French Plan, then, was in part also a generalized program of market research, intended to aid economic growth and equilibrium through the production of public knowledge, trying to bring about market equilibrium through a mechanism outside the sphere of exchange itself. This was in effect the production of coordination outside of the market's mediation.

Still, the input-output relations of national production could contain complex interdependencies that would become very difficult to calculate. Aujac notes the constraints implied by the fact that all calculations were done by hand with a slide-rule and a system of note cards. To solve this problem, planners tried to make the input-output tables triangularizable, which makes it possible to solve for unknowns using linear algebra. By making the tables "triangularizable" the firms would in a sense "no longer have to depend on the central planning office, except regarding the schedule of meetings of the various managers....if they needed to calculate the production level of their own sector, they could be provided with every useful piece of information regarding the final or intermediate demand of the sectors positioned ahead of them in the triangulation list."

The real process of data production just described contrasts with the rather caricatured image of a planned economy, such as the terms of the so-called calculation debate, where the "planner" is imagined to command from high above,

cut off from the knowledge below. What is striking, instead, is the extent to which the two caricatured images of "plan" and "market" face analogous problems. However much this opposition excited ideological battles during this period, it does not even capture the fundamental determinants of capitalism and its political organizations.

For French economists, the engineering tradition in which they were situated meant they viewed neo-classical economics as a tool for management. The economist Jacques Lesournes, trained at the *École Polytechnique*, exemplified this when, in 1960, he described the duality of optimal allocation problems, where one can either "solve the problem directly by reasoning about the flow of goods and services, without interpreting the Lagrange multipliers; or [...] solve it in a decentralized way by interpreting the multipliers as a system of prices, price becoming the intermediary between the unit of production (or the consumer) and the rest of the economy."[15] As Maurice Godelier would write in 1966, this seemed to show, from the point of view of mathematically-trained economists, "the formal equivalence between the economic rationality of the capitalism of free

[15] Lesourne, Jacques. "Recherche d'un optimum de gestion dans la pensee economique", in *L'Univers Economique,* (1960).

competition and that of centralized planning," provided planning used a system of prices.[16]

This purely formal equivalence did not much impress Pierre Massé, the general commissary at the direction of the Plan, appointed by de Gaulle in 1959. Massé converged with his American contemporary John Galbraith in stressing the power of unions, monopolies, large firms, and the state in "altering prices to their own advantage." Here again was the rather common image of free competition as a paradise lost. Massé presented the Plan as an active intervention to neutralize these distorting powers and restore equilibrium, allowing prices to express an optimum. Thus, while appearing to deny the reality of economic equilibrium, Massé re-affirmed it even more strongly as the normative ground for the whole framework of the Plan.

In 1965, Massé published a book titled *Le Plan ou L'anti-hasard*, which might be translated as equating the Plan with *the taming of chance.* The problem, according to Masse is that there is no "generalized market" on which firms can plan future decisions, thus, "market studies" are the only solutions left to them. In 1962 he had already written: "the Plan is thus a *substitute* of the General Market" in the sense that "it is the effective substitute of an illusory

[16] Godelier, Maurice. *Rationality and irrationality in economics*. (London: NLB, 1966) 54-57.

shadow, the real model of an unrealizable model. It has the triple virtue of existence, of coherence, and at least partially, of optimality. But if the Plan is a substitute in the sense I have just said, it is also much more."[17]

The plan was indeed as much a political as a strictly economic project. It served to create consensus, to align "social partners"—the standard French euphemism for worker's unions—on perceived exigencies. Massé noted two "psychological" elements to the Plan's implementation: "The first is that the concert achieved during the elaboration of the Plan tends to spontaneously prolong itself into a concert in execution...The second element of success is the coherence of the Plan, the fact that it prefigures, if everyone plays the game, a situation in which the factors and the products of the different branches will exchange on the market in equilibrium."[18] By stressing the consensual nature of the Plan, Massé was perhaps avoiding thornier questions about its distance from the traditional structures of parliamentary democracy. The administrators and politicians more favorable to maintaining a capitalist organization increasingly saw in the Plan as a method to secure agreement from worker's organizations, moving away from the sweeping application of planning present in the French Communist Party's post-war program, the nationalized control of production.

[17] Massé, Pierre. "Histoire, méthode et doctrine de la planification française." *La Documentation Française*, (1962).
[18] Ibid. 9.

Revenue-Politics, or the Revolt of Capital

Not afraid to affirm the importance of backroom negotiations, Massé also made no effort to pretend that the Plan and its investment decisions were a matter of following unambiguous rules. "The practice of planning preceded theory," he wrote, and "the ensemble of methods and habits constituting French planning is not the application of a pre-conceived doctrine, the product of a school of thought." Moreover, "in France, truly mathematical models have been used only for the calculation of marginal variations."[19] Masse was in fact appealing to a standard presentation by economists of the French civil service: they maintained legitimacy precisely by *denying* that they simply applied economic theory.

Still, there was considerable homogeneity in their general outlook, if only because the Commissariat of the Plan, at least its upper echelons, was staffed virtually exclusively by graduates of the *grandes écoles*, trained specifically for the civil service. Their judgment was called upon to achieve the aims demanded by the government in power at the time, to which they were to provide options based on their expertise. They were already assumed to be guided by the inherently political concern for the public good. At the same time, the

[19] Massé, Pierre. *Le plan ou l'anti-hasard*. (Paris: Gallimard, 1965).

architecture of political institutions in the French Fifth Republic was such that the elements constituting the orientation of the Plan were unlikely to face close scrutiny once produced. While the Commissariat du Plan produced the Plan— in collaboration with administrative entities such the INSEE and the SEEF—the prime minister guided and approved the options and projects before presenting it to the legislative Chambers for approval. In theory, the power of deliberation and approval belonged to the legislature, but the means by which this could happen was not even clearly defined in several of the early Plans. Until the 4th Plan, the approval of the finished Plan by the National Assembly and the Senate formed the "frame of investment programs," but individual projects were not probed or approved by the legislature, as was the case, for instance, in the US. Individual investment decisions concerning regional projects, or major projects such as hydroelectric plants, were rarely scrutinized. The independence of economic policy and investment has its origin since at least the first French republic, and perhaps even before. This fact has been used to explain the absence of pressure for any kind mechanical objectivity in the administrative and political systems of France, compared to the U.S.[20]

[20] Porter, Theodore M. *Trust in numbers : the pursuit of objectivity in science and public life*. (Princeton: Princeton University Press, 1995). Cf. Jasanoff, Sheila. "The Practices of Objectivity in Regulatory Science," in C. Camic, N. Gross, and M. Lamont, eds., *Social Knowledge in the Making*. (Chicago: University of Chicago Press, 2011).

Given these facts, what explains the push to introduce cost-benefit analysis in French budgetary and economic administration by the late 1960s? What explains the roughly simultaneous emphasis on formal models? The answer is to be found in the renewed pressure capital was putting on the state apparatus, through its political and administrative representatives, to discipline the autonomous investment of the state. This revolt by capital, reaching an apogee from roughly 1970 to 1980, culminating in the so-called neoliberal period, was also associated with a need to discipline labor. The introduction of mechanical objectivity was a way to re-assert the logic of capital. Let us describe the concrete mediations by which this came about.

In the early 1960s, as economic growth began to slow, two problems became particularly pressing for the ruling class: inflation and the balance of payments.[21] Under the Bretton Woods system, France was highly constrained by the need to pay in US dollars. While these factors were discussed at the time as motivations for control of inflation, the control of inflation focused on controlling wages, perceived to be growing excessively. By 1965, economic policy was organized around what was called "Revenue Politics." Political changes were afoot, as well. Political appointments took a distinctly liberal turn, including

[21] Bordo Michael, Simard, Dominique, and White, Eugène. "La France et le système monétaire de Bretton Woods." *Revue d'économie financière*, 1993, 26.

Valery Giscard D'Estaing at the ministry of finance. For Massé, mitigating action against increasing revenues was the only way the temporary "fever of remuneration and prices" could be treated.[22] At the Congress of Francophone Economists in May 1965, economists and planners wondered how to get unions to agree to tempering salaries and wages, a policy presented as indispensable. Economists argued the excessive growth in wages was the cause of inflation, and that the resulting "instability of prices" had caused the two recessions France had suffered from 1952 to 1953 and from 1958 to 1959. Unions needed to agree to "voluntary" limits to the growth of wages, determined by the Plan, and it would be for their own good.[23]

The socialist politician Jacques Delors—who would go on to become president of the European Commission—called for planning to insure the "competitiveness of the French economy," which meant growth without having "recourse to the easy solution procured by inflation": "There are sufficient motives, using the formula of the Minister of Finances, M. Valéry Giscard d'Estaing, to 'renounce the intellectual tyranny of inflation.'" Delors ended his presentation with something of a threat to labor: they must accept revenue-politics, and not

[22] Massé, Pierre. *Le plan ou l'anti-hasard*. (Paris: Gallimard, 1965).
[23] Sellier, F. "Les Problemes de L'adhesion syndicale a une politique des revenues: rapport au congres des economists de langue francaise." *Revue d'économie politique*, Vol. 75, No. 3. 1965.

take advantage of the "full employment" policies in place. Otherwise, more drastic measures would have to be taken. If labor resists revenue politics, "experience in our economy shows there is only one possibility: the adoption of a lower growth rate, the limitation of social transfers and the maintenance of a level of under-employment, designed to weight on the demands of labor. Revenue politics aims precisely to avoid recourse to such means."[24] Tellingly, the revenue policies, however, never seemed to seriously take aim at the revenue of capital, usually on the grounds that today's profits are tomorrow's investments.

There were objective reasons for the revolt of capital at this particular moment. First, decolonization ended a traditional rent held by the high bourgeoisie. Next, the entrance into the European common market was overtly discussed. "*Compétitivité*" entered the scene as the new watchword; the end of protectionism would require firms to be competitive, which in large part meant the "cost" of labor would have to be reduced. In the post-war decades, there was much reticence in sectors of the capitalist class who especially feared the rivalry of German industry. Still, the world market—here imposed through the European Union—was seen by the ruling class as a potential disciplinary tool for controlling the power of labor.

[24] Delors, J. "Politiques des Revenus et Strategie du Developpment." *Revue d'économie politique.* Vol. 75, n.3. 1965.

While the business class—and along with it a considerable fraction of the political-administrative techno-structure—viewed excessive power of labor as the main problem, we are not permitted to conclude from this that high wages were in fact behind the declining rate of profit at the time. As Robert Brenner argues, by the late 1960s, virtually all advanced capitalist economies entered a deepening state of overproduction and overcapacity. As newer segments of fixed capital entered the world market—for instance, Japan and later east Asia—these lower-cost firms lowered the profitability of fixed capital already "sunk" in Europe and the US. Brenner argues against the "wage-squeeze" explanation for the economic downturn on the grounds that more than three decades of so-called "neoliberal" policies of suppressing real wages have done little to revitalized profitability. In spite of these policies, economic stagnation has continued, demand propped up by a vast increase in credit. [25]

Such is an historically-situated account of the major contradiction in capitalist production: the tendency for inter-capitalist competition to push for technological advances replacing labor-power with fixed capital; or as Marx put it, to replace living labor with dead labor. Since profit is a fraction of surplus labor, the declining fraction of labor leads to a decline in the rate of profit. For a

[25]Brenner, Robert. *The economics of global turbulence : the advanced capitalist economies from long boom to long downturn, 1945-2005*. (London: Verso, 2006).

time capitalism was able to offset the huge increase in labor productivity during the post-war decades by increasing the shear volume of production, thereby still increasing the number of workers employed. This countervailing tendency could not be sustained indefinitely. The falling rate of profit, due to rising labor productivity (or due to a slow-down in the productivity of capital) was particularly intractable from the specific position of French capital as a result of the full employment mandate to which virtually every pre-1970 government adhered. Capital might have "adjusted" to a falling rate of profit by firing workers. Still, this would not necessarily have avoided crisis, since it might be postulated that this would have undercut consumer demand within the economy. [26]

Here we meet perhaps the central contradiction of the value-form itself: The elimination of the very living labor which is the source of profit. This contradiction, finds social and political, rather than narrowly economic, expression. In the specific French case, the broader movement of the capitalist class aiming to re-assert its eroding power meant not only limiting the fraction of surplus going to labor, but also limiting the autonomy of the state as an

[26] On the economic downturn in the second half of the 20th century, see: Duménil, Gérard, and Dominique Lévy. *Capital resurgent: roots of the neoliberal revolution*. (Cambridge: Harvard University Press, 2004). On the crisis as an expression of the growing fraction of fixed capital, see the collection of article by the "value-critical" school: Larsen, Neil.. *Marxism and the critique of value*. (Chicago: Mcm, 2013).

economic actor. State investment, and its nationalization of firms, in particular, represented so many lost opportunities for the valorization of capital. Moreover, to the extent that it was not subject to the logic of capital, this investment was seen as displacing capitalist production. The institutional structure of the French state also meant the economic representations of the Plan itself became the locus where this more fundamental conflict found expression.

There were external and internal causes spurring on these new policies, the turn towards "economic rigor" as it is sometimes called. The IMF put pressure on France to end the Treasury Circuit, which it eventually did in the 1973.[27] From within, the liberal publicist Simon Nora published a report in 1967 criticizing the role of the state in centralizing financial control over public firms.[28] Excessive state spending was seen as causing inflation, producing "excessive demand," and competing with private capitals. Michel Foucault would see in these renewed concerns a "pretext" for the imposition of "French neoliberalism," but he did not really consider that the behind the pretext was a real crisis.[29]

The Discipline of Numbers and Models

[27] Hazouard, Solène, René Lasserre, Henrik Uterwedde. *France-Allemagne cultures monétaires et budgétaires vers une nouvelle gouvernance européenne? Travaux et documents du CIRAC*. (Cergy-Pontoise: CIRAC, 2015).
[28] Terray, Aude. *Des francs-tireurs aux experts: organisation de la prévision économique au Ministère des finances, 1948-1968*. (Paris: Comité pour l'histoire économique et financière de la France. 2002).
[29] Foucault, Michel. *Naissance de la biopolitique cours au Collège de France, 1978-1979.* (Paris: Gallimard Seuil, 2004).

As early as 1965, the minister of finances Valery Giscard-D'Estaing invoked the "Optimization of Public Spending." The program was presented as comparable to the cost-benefit techniques used in the US. On a "mission" to the US in 1967, members of the committees on Prevision and Budget visited the RAND Corporation, and various federal administrations and departments in Washington to study their use of the Planning Programming Budget System (PPBS), which had famously been promoted by Robert McNamara at the Pentagon. In addition, the American consulting firm McKinsey was called to audit and restructure "management" at the INSEE.[30] In France, this push for mechanical objectivity was officially termed *Rationalization of Budgetary Choices* (RCB). According to historian Aude Terray, since the inter-war period, the word "rationalization" had signified, in French technocratic jargon, efforts to cut state functions seen as redundant or unnecessary.

At the first meeting of the RCB Commission, Giscard-D'Estaing gave a speech presenting rationalization as alignment with business practice: "The idea that [state] administration should benefit from a special situation which should dispense it from seeking greater efficiency under the pretext that it does not belong to the productive sector, is an idea to be condemned. The administration," he continued "like the productive sector, has the duty to rationalize its

[30] Terray, *Des francs-tireurs aux experts,* 464.

methods."[31] Rationalization was presented as applying the analytic techniques of private firms to public services. However, private businesses generally did not use these methods. In fact, one economist wrote that when he left the department of economic Prevision in 1972, there was not much use for economists outside the government: Businesses had "not much appetite" for economists, while banks and large industrial groups had only "marginal" and "small" groups of economists.[32]

Writing in 1971, near the height of the rationalizing reforms, sub-director of the department of economic prevision, Hubert Levy-Lambert confirmed that the new policy was indeed one of ordoliberal-style austerity, limiting state investment to a fraction of GDP: "As the Director of the Budget presented it in the last RCB Bulleting, even though the fraction of the State's budget in GNP has grown by wide proportions over the course of the last 20 years, the needs left to satisfy remain important and far surpass the budgetary resources, which can in no way grow faster than GNP, unless fiscal pressure is to increase." The sub-director considered that "the main difficulty in application of this scheme to the public sector does not come from the impossibility of using the profit criteria." Rationality equivalent to that of capitalist firms could be achieve because "the

[31] Opening speech given by Valéry Giscard d'Estaing at the first meeting of the Commission R.C.B. January 18, 1971. Cited by Levy-Lambert, *"Bilan actuel de la rationalisation des choix budgétaires."*
[32] Private archives of Pierre-Yves Cossé. Cited by Terray, 646.

indicators of goals and sub-goals can be substituted to it from both the higher level of ends to the lower level of elements in the program."[33]

The adoption of standardized rationalization methods was slow, not least because the various bureaus required many more analysts in order to crunch the numbers. These were progressively introduced from 1966 to 1968. Yet, despite efforts to impose it, cost-benefit analysis did not find great traction in the French administration. Even when they were used, the analysts appear to have doubted their own practice. It was considered by many of limited use as a tool of political decision. The political strata of the civil service complained that since they are "incapable of orienting the analyst" so as to answer the questions of interest in making a decision, "the dilemma" is to either "blindly follow the conclusions or totally reject the analyses."[34] The analysts, for their part, also did not seem to have viewed cost-benefit methods as particularly useful. In several high profile cases, it was reported in internal documents that the conclusions yielded from the cost-benefit analysis were not followed. Calculations conducted a few years after the Concorde aircraft project had begun recommended abandoning the project. These were ignored. In the case of Airbus and M.45, committees presented with

[33] Levy-Lambert, Hubert. "Bilan actuel de la rationalisation des choix budgétaires." La Revue administrative, 24e Année, No. 139. 1971.
[34] SAEF B-52-329. "L'application des methods modernes de preparation des decisions dans l'administration americaine," March 20, 1967. Document written by Philippe D'Iribarne. Cited by *Des francs-tireurs aux experts,* 478.

cost-benefit analyses reached opposite decision than those recommended by the calculations.[35]

Hubert Levy-Lambert noted that while the cost-benefit methods sought to rationalize specific investments, the government also aimed for "rationalization" at the level of the economy as a whole: "Thanks to the developments of national accounting, of the French planning system, we can consider that decisions at the global level are prepared in a relatively rational way...this seems to be the case for broad choices in terms of economic growth, consumption, investment, savings, public finances etc."[36] In what sense was macro-economic modeling imagined to rationalize planning?

In the mid 1960s, neo-classical growth models increasingly replaced the macro-economic models based on the broad categories of national accounting. During the first post-war Plans, economic training, while still strongly "liberal," included Keynesian ideas along with the teaching of national accounting.[37] As early as 1950, Claude Gruson, the director of the INSEE, described the use of a system of 88 equations expressing "the relations unifying the diverse elements of the economic circuit." Gruson proposed that this "system should be sufficient to

[35] Ibid. 454 and 440.
[36] Levy-Lambert, *"Bilan actuel de la rationalisation des choix budgétaires."*
[37] Terray *Des francs-tireurs aux experts.* 46.

get an idea, when the data designated as fundamental in Keynes global analysis are known, to permit the calculation of all the elements of economic activity."[38]

According to Aude Terray, however, until the mid sixties, a much lighter model was used, with only 23 relations expressed as equations. Terray considers that improvements in the field of prevision over the course of this period, more precisely in the production of "provisional accounts," are due less to the perfection of economic models (*sensu strictu* understood as the system of equations) than to the "progressive amelioration of statistical bases and by virtue of the cumulative learning and know-how of macroeconomists at the SEEF [the service of financial and economic studies] who relied on an iterative method and were constrained to manual calculation."[39] Introduction of computers facilitated the growing complexity of the models, but Terray concludes that the political-institutional factors were more explanatory of the introduction of the models.

The "Keynesian" models of the 1950s must not be confused with the later growth models which represented a resurgence of general-equilibrium ideas, now called neo-classical. They were introduced intro the French Prevision offices by liberal economists including Maurice Allais and Edmond Malinvaud, who move

[38] Ibid. pp.483, citing an article by Claude Gruson. "Note sur les conditions d'etablissement d'une comptabilte national et d'un budget economique nationale." *Statistiques et Etudes financieres,* n.19. 1950.
[39] ibid., 484.

between research considered purely "academic" and the requirements of the Plan. These models emphasize "balanced" growth—which essentially meant the concern for revenue politics and inflation. This was part of an effort to re-assert the general-equilibrium model onto the representation of the economy as a whole (along with its political implications).[40] The French economists in the Walrasian pure-economic mathematical tradition played a significant role in this, but they also imported from the US, and collaborated with US economists such as Kenneth Arrow. Pierre Massé played a significant role in re-asserting these types of presentations, also using them in his more popularizing writings when advocating for policies.

Apparently due to the new liberal or neoliberal objectives, economic policies faced more resistance in the National Assembly. In committee, too, debates, about the Fifth Plan in which syndicates and unions participated became more contentious than before. According to the memoirs of a member of a the Commissariat du Plan, in the post-1968 period, the two main communist and Trotskyist unions, the CGT and FO, refused to enter into discussions

[40] Angeletti, Thomas. "Faire la réalité ou s'y faire? La modélisation et les déplacements de la politique économique au tournant des années 1970" *Politix*, 2011. n.95, pp. 47-72. Cf. Pascallon, Pierre, and Pierre Massé. *La planification de l'économie française préface de Pierre Massé*, *Collection Droit, sciences économiques*. (Paris: Masson, 1974).

involving the macro-economic models which they viewed as a trap.[41] The technologies of objectivity were called in to legitimate the implementation of unpopular policies. To the contrary, Delors placed a great deal of hope in the new statistics and models expressing "values" rather than "volumes." He celebrated a plan that had become more "respectful of the market." Giscard-D'Estaing wanted to purify the "output" of the economists. The economist as authoritative individual was suppressed, which meant valorizing economics in the abstract, and viewing it as producing "outputs" using models.

Balancing The Economic "game"

New economic theories were mobilized to legitimate the new policies in the public sphere, to break with previous representations of the economy. Thus, the representation of the economy as macro-entity became itself a political stake. This was a battle of economic representations, re-asserting the abstract individuals of economic theory against production-based representations.

In the late 1960s, Massé reinterpreted the liberal government of the economic with a new model: the theory of games. Masse presented the first half of the 20th century as a turn against the ideas of progress and rationality. Finally, economic planning offered "the chance", according to Massé, "of substituting for situations of conflict, which have played such a great role in economic theory,

[41] Private archives of Pierre-Yves Cossé. Cited by Terray, pp.645.

from Cournot to Marx and from Marx to von Neumann, situations of cooperation which perhaps open a gateway to the future." While "a static economy is indeed the image of a zero-sum game, where each partner obtains only an advantage taken from another, a progressive economy produces, from one time period to another, a surplus, the distribution of which can be the object of a struggle, but whose creation is favored by concerted action."[42] Massé presented the economy as a "game" in which different parties are trying "to appropriate" a part of the surplus produced "at the level of the firm," but who would be best served by co-operating.

As productivity increases, as a surplus is produced during economic growth, he said, the question is how to modify the forces acting on the distribution of this surplus. Policies *must* be taken to modify the distribution, since there are inherent destabilizing tendencies in the distributional process of a growing economy, bringing about pathologies such as inflation: A firm benefiting from higher productivity could use dropping costs of production either to lower their prices, or redistribute the surplus in wages. But, argued Massé, the employer is generally more likely (or more *pressured,* he implied) to go the second way, rather than lowering prices. Massé worried this led to a tendency for wages to rise while keeping prices constant, causing inflation. In the "game" being

[42] ibid. pp18.

"played" separately in each firm, he says, the two parties would be more inclined to adopt the first strategy if they knew the same was being done in the other firms.[43] He was considering the use of economic knowledge to permit cooperative strategies. The surplus was measured in the national accounts *ex post*; it had already been distributed, but through the monitoring of indicators (*clignotants*) he hoped the state could react earlier in order to maintain the distribution of incomes, thus acting as a "guardian of equilibria."[44]

In order for the proper distribution to be maintained, "structural conservatism" and "situational rents" had to be disciplined. This analysis amounted to the euphemized statement that labor power was a constant threat to the order of the economy. Fortunately, says Masse, the "freeing of trade" and the "European common market" will serve as powerful forces to fight the power of labor.

The turn to a vision of the economy inspired by the relatively new theory of games was also associated with an effort to discredit national income accounting as a proper basis for economic policy. Historians have often described this as a turn away from "Keynesian policies"—however, in the French context, the confrontation was between what was called "volume" models of the economy

[43] Massé, Pierre, and Pierre Bernard. *Les dividendes du progrès*, *Société*. (Paris: Éditions du Seuil. 1969) 39.
[44] Ibid. pp.64.

and "value" models of the economy. National income accounting presented the totality of the national economy as a flow of money, a sum of prices representing the flow of commodities and services, where a balance had to be achieved between broad statistical "income" categories. In this sense, it is reasonable to say it stood on the same foundation as a Keynesian vision.

The problem for the new revenue policies was these models provided very little justification for controlling wages, and for controlling state investment or spending. From the point of view of national accounts, such action could be decried as leading to lower gross national production. It follows that Massé, along with others, increasingly criticized the GDP and national accounts as faulty representations. Writing in 1986, Massé would describe the preceding period as one in which "reigned the myth of the growth rate," focused on "the gross domestic product, which reeked of stakhanovism."[45] In the new economic conditions, wrote Massé, the national accounts measuring in gross volumes could no longer be of much use because the depreciation of capital included in the calculation of value-added was no longer stable. Massé thought much fixed capital in France (e.g. factories) could go on producing, but in the new competition of the world-market, prices would drop sufficient that they could not

[45] Massé, P. L'intelligence économique à l'épreuve: La dématérialisation de la valeur. *Commentaire*, numéro 33(1), 115-118, 1986. pp.116

longer compete and would in fact lose their economic value. This interpretation converges with Robert Brenner's thesis that the crisis had its origin in the sequential entrance of new blocks of fixed capital into the world-market. However, Massé was convinced that the production of an ever-increasing material surplus could make up for the declining rate of profit. On this point, he followed a common trope of the post-war boom, to declare the theory of the decline in the rate of profit refuted once and for all. In retrospect this appears rather foolhardy given the long and intractable stagnation of the rate of profit in the last quarter of the 20th century, in virtually every advanced industrialized nation.

To replace the too productivist gross domestic product, Massé argued for the use of a global production function, which expressed the relative contribution of the various "factors of production" to productivity. This was supposed to replace the push for ever-increasing production with the aim of proper allocation. With the production function, economists imagined they could represent the marginal productivity of each factor of production, and could thereby bring about greater productive efficiency by remunerating each factor according to its "contribution". This representation reduced labor to one factor among the other productive "capitals." In this sense, it was a return to idea that "capital" is productive, an idea at least as old as the writing of J-B Say. In this new context, however, it was used to argue that the remuneration for labor-power was too

high. If Massé seemed to admit a kind of class struggle with his game-theoretic representation of the economy, the production function annulled the unmentionable political question implied therein by providing a *scientific* answer to the strategy to which all "players" *must* agree. The answer was given by the economic models.

This ideological feature of the models converges with the surface appearance of capitalist practice itself. Capital did not wait for a "dynamized Cobb-Douglas function" to overlook *in practice* the real nature of surplus value. Marx already noted that "since all sections of capital equally appear as sources of the excess value (profit), the capital relation is mystified [...] Yet the way that surplus-value is transformed into the form of profit, by way of the rate of profit is only further extension of that inversion of subject and object which already occurs in the course of the production process."[46] *Inversion* because the "subjective force" of living labor presents itself as a part of dead labor which itself is "personified."

Economic Rationality as fictitious Limitation

In their public interventions, the economists increasingly presented their science as increasing the rationality of social organization. They attributed their

[46] Marx, Karl. (translator: David Fernbach). *Capital: a critique of political economy*, *v 3*. (London: Penguin Books. 1981 [1894]), 136.

actions not to wisdom or judgment but to a special access to an abstract economic rationality. Yet the "theories of rationality" and the calculative tools actually used by the administrators and economists at the Plan were not only for public amazement. Beyond a spectacular dimension, by their structure, they contained the logic for reasserting the exigencies of Capital.

The way in which cost-benefit analysis contains the logic of capital is illustrated by the "discount rate" applied to future benefits. The position of the rational calculator imagined by cost-benefit analysis is that of the investor, who must decide how to use a certain amount of capital. This capital is imagined to be totally liquid, to be money-capital. It assumes the money could also be lent out on the capital-market, yielding a "return on investment." This potential return on capital, expressed by the interest rate, is assumed in cost-benefit analysis so this foregone income (i.e. "benefit") is subtracted from the future anticipated benefits. It stands to reason that the discount rate is also called "rate of actualization," in the sense that future benefits are said to be expressed in their present or actual value.

These calculation techniques rely on a market imaginary. Wilfredo Pareto had developed the analysis of perfectly competitive market equilibrium, where maximization of discounted revenue by each producer brought about a collective

optimum.[47] In this imagined world, the discount rate regulates investment decisions and leads them to an optimum. In the perfect Paretian world this rate is the same as the interest rate, since it necessarily expresses the value of money-capital, return on capital. In such a situation, a perfectly efficient market would thus naturally guide investment decisions.

In practice, however, the discount rate and the interest rate were not the same, so economists at the Plan were faced with the problem of deciding on a discount rate. To the extent that the Plan invested not only in public works, but also made funds available to key private sectors, the discount rate promised to provide an important regulatory instrument, one which would lead to greater rationality, in part by limiting the extent of arbitrary decision from the managers of the Plan. While an analyst at Commissariat of the Plan, Lionel Stoleru regretted that "everything happens as if the current functioning of the market for capital results from the incapacity of the interest rate to guaranty, by its own action, the equilibrium of the market." In order to remedy this inconsistency of the market with its ideal rationality, "it seems desirable to add to the interest rate another instrument of equilibrium which would not be a volume, as in the spending envelopes, but a price: it is the cost of immobilizing capital, or the

[47] Duharcourt, Pierre. "Choix des investissements publics et taux d'actualisation." *Revue économique*, v. 23, n.3. (1972).

discount rate. This would hence define a policy founded on two homogenous instruments: the interest rate, reflecting the cost of capital and the discount rate reflecting capital's rarity."[48]

My point is that through the introduction of these calculative tools in administrative decisions, capitalist rationality was erected as necessary rationality. Indeed, the very idea of the discount rate imposes the abstract form of capitalist investment decisions on all forms of investment action. Contained in the idea that a discount rate must be applied to future benefits is the view of all capital as "interest-bearing capital," which Marx described as "the capital relationship" having reached its "most superficial and fetishized form...money that produces more money, self-valorizing value, without the process that mediates the two extremes;" which is to say, the production process.[49] In this form, "capital appears as a mysterious and self-creating source of interest, of its own increase...Thus it becomes as completely the property of money to create value, to yield interest, as it is the property of a pear tree to bear pears."[50]

When construed as a frame for the decisions of a political sovereign, standing outside the objective constraints of capitalist valorization, such an

[48] Stoleru Lionel. Taux d'intérêt et taux d'actualisation. In: *Economie et statistique,* n.5, (Octobre 1969), 3-11
[49] Marx, Karl. (translator: David Fernbach). *Capital, v 3,* 515
[50] Ibid., 516.

accounting exercise seems strange. When the abstracted logic of capital is applied to the *real materiality* of productive forces, the hiatus between matter and form inherent to capitalist production appears more starkly. A hydroelectric plan is not capital intrinsically, but only by virtue of the social relations in which it exists. The hydroelectric plant can be treated as producing electricity whether or not it exists in capitalist relations, the production of electricity thus existing independently of a particular metrology of economic value.

Pierre Massé himself demonstrated awareness of this: He noted that in the Soviet Union, hydroelectric kilowatt-hours are generally less costly than thermal kilowatt-hours, unlike in most western nations, because "there is no interest rate to discount on the capital invested." Still, the USSR chose to construct thermal plants, since they could be built faster and using fewer resources. Soviet planners saw that the resources freed up in so doing could be used productively in other sectors. Massé argued that the soviet planners reached the same conclusion than had they used an interest rate on capital invested; and he takes this to prove that the "point of view of the firm and that of the Nation are reconciled in a more satisfactory way by the use of an interest rate."[51] While he did not elaborate the reason why this reconciliation is more satisfactory, at other times, Massé expressed positions more consistent with the view that any decision about

[51] Massé, Pierre. *Le plan ou l'anti-hasard.*, 82.

the particular use of productive capacities will escape simple calculation. This is because, "physical capital is not a stock of equivalent units and labor is not a flux of replaceable units." While Massé continued to include an interest rate in his calculations, he sought a model that would take into account the actual physical parameters rather than merely their monetary value, to "makes it possible to work out the interest rate without knowing the capital value, but the value of the physical parameters directly linked to the model [...] a very delicate job to identify these in the real economy."[52]

When the discount rate enters the arena of public decision in such a central way, as it did with the so-called rationalization of economic policies, it loses its narrow univocity and appears more clearly as a kind of substitute of politics. As one economist noted at the time, the discount rate is "a public macro-decision translating a political option."[53] With this new function, the discount rate was imputed with a remarkable function; to represent the polity's valuation of time, a choice between saving and spending. These metaphysical proclamations, however, cannot be understood unless they are situated within the

[52] Massé, Pierre. "The French Plan and Economic Theory ." *Econometrica*, Vol. 33, No. 2. (1965), 276.
[53] Llau, Pierre. "La rationalite du taux d'actualisation: Réflexions sur l'actualisation des valeurs dans le Ve Plan." Revue économique, Vol. 17, No. 4. (1966).

particular historical moment when the discipline of numbers was mobilized to impose the discipline of capital.

Conclusion

Clarifying the historical metamorphoses of economic representation in French economic policy permits some important interventions in current debates about capitalism and the role of the state. Within the apparatus of the state itself, there appears to be an historical dialectic between changing modalities of the state-form and the value-form. This has been under-appreciated by many interpretive currents in their considerations of the post-war state as effectively a "welfare state." These interpretations tend to present the welfare state as permitting the extended reproduction of the laboring population, and conclude, on the question of planning that the post-war state acted as an "ideal total capitalist," using Marx's term.[54]

My concern here has not been the welfare state as such, but more narrowly state planning. Against a rather ahistorical and merely structural understanding of the state, we see that the more fundamental historical movement has been grounded by the subversion or conservation of the value-form, as dominion of the abstract over the concrete. While planning began as a

[54] For instance, see: Walker, Gavin. "The 'Ideal Total Capitalist': On the State-Form in the Critique of Political Economy." *Crisis & Critique*. (2016), 434-455.

way to supersede the contradictions of capital, the danger emerged that this could act in a non-capitalist way through its objective control. That is, the form of economic representation in post-war state planning, along with certain institutional arrangements treated wealth to a greater extent as real use-value rather than as economic value, the particular form of wealth dominant in capitalism. I think Marx had perceived the possibility of just this kind of development when wrote that "within bourgeois society, the society that rests on *exchange value*, there arise relations of circulation as well as of production which are so many mines to explode it." These appear in the same way that "the division of labor creates agglomeration, combination, cooperation," in other words, " so many antithetical forms of the social unity,"[55]

During the turn against national accounts and GPD, proponents of the new models objected that these measures expressed economic value as too closely linked to its material support—to factories and physical assets. It was again Pierre Massé who expressed this with a revealing formulation when he wrote, in 1986, that the "raw evaluations" of the national accounts fail to see that economic value is "*more of a sign than a thing.*"[56] The practices and representations such as cost-benefit analysis or value-based models were indeed called upon to enforce

[55] Marx, Karl. *Grundrisse*. 159.
[56] Pierre Masse "*L'intelligence economique a l'epreuve*." 118.

economic value as the valorization of capital, against concrete activity, the production of real material wealth.

Chapter 8:

Conclusion

> "In contrast to other social animals, human beings do not just live in society, they *produce society in order to live.* In the course of their existence, they invent new ways of thinking and of acting—both upon themselves and upon the nature which surrounds them. They therefore produce culture and create history, History."[1]
> -Maurice Godelier

For a history of economic knowledge

This citation by the anthropologist Maurice Godelier might be the basis for the peculiar history of economic knowledge developed in the preceding pages. In the production of their existence, humans in society establish a metabolic relationship with their physical and biological environment. This many be called "economic." While this production and reproduction of societies forms the material basis of society, it does not confront individuals unmediated; individuals enter into preexisting social relations. These are sustained, are made possible, by virtue of another seemingly unique human quality, the sharing of mental representations by use of the symbolic function (e.g. language). With these representations, humans invest the world. Godelier provided an arresting vision

[1] Godelier, Maurice. 1984. *L'idéel et le matériel : pensée, économies, sociétés*. Paris: Fayard.

of human history: he proposed to explain the origin of social castes and classes by the human "creation" of imaginary entities that come to dominate humans themselves.

To the extent, then, that the history of societies is a material one, this history is, paradoxically, the history of mental representations. To say this, however, does not imply that the mental or the cultural determines the course of history. In the production of their social relations, which are a conjunction of the mental and material, humans create social structures that escape the conscious control of any one individual. History is made by the contradictions resulting from these relations of relations.

Along these lines, has a materialist history of economic representations ever been written? As I see it, to write such a history is not to rely on any kind of purported determinism by trans-historical economic laws, but to write the history of the economic as a social sphere, where this sphere is the expression of contradictions and antagonisms arising in the process of production and reproduction of society. In order for such a history to be possible, it would be necessary to question the category of *economic* itself. In non-capitalist societies, there does not appear to be a distinct "economic" sphere, just as there is no *labor* nor commodities in any recognizable sense of the term. Marx criticized the political economists such as Adam Smith for projecting the economic categories of

capitalism onto past social formations—for instance, when they assumed the value of goods in exchange was determined by labor time as a characteristic of production in general. Against this view, Marx positioned the concept of mode of production, expressing the historical specificity of economic categories.

The historical specificity of economic categories have not been given its due importance neither in the history of economic knowledge, nor in economic history. Certain currents of Marxism have relegated the economy to the infrastructure, and have imagined that institutions and their attending cultures have developed in the superstructures above. In Althusser's version of this schema, the functions of the infrastructures are then explained in a most banal way by the dominant contemporary economic sciences. To the contrary, we must understand—once again citing Godelier—that "Marx's hypothesis concerning the determinate role in the last analysis of economic structures...should not be taken to imply the existence of a hierarchy of levels or instances, nor even of institutions, which would be the same everywhere."[2] With this understanding, it becomes necessary to ask why the economy appears a separate institution, opposed even to the cultural, during the modern period.

One line of thought has postulated economic forces as acting on mental representations from without. Consider for instance the work of the Annals

[2] Ibid. pg.148.

School, who often seemed to hope they would find the cause of social change in the patterns of European grain prices and wages. In this category, we might also give as example the now less popular "Keynesian" theory of E.J. Hamilton, who explained, in 1929, the rise of early capitalism in 16th century Europe by the influx of precious metals from newly opened mines in the Americas. Hamilton proposed that the temporary rise in prices caused by inflation from the influx of metals acting as money, along with the lag in wage increase, allowed merchants to amass a greater surplus of currency, which spurred accumulation.[3] Writing history this way used contemporary economic science rather uncritically, assuming it expressed more or less trans-historical laws that could be found anytime money or goods circulated.

In this situation, cultural history was an immense progress to the extent that it implied an intensified study of the mental representations no less constitutive of the relations of production and the productive forces. It stands to reason that in the Anglophone world, E.P. Thompson is often said to have inaugurated a new kind of cultural history with his study of the "moral economy" of the English crowd. But even the concept of "moral economy," insofar as it is taken to assert the "cultural" dimension of resistance to rising capitalism, posits as its opposite the economic as an a-cultural sphere—in other words, as a sphere

[3] Hamilton, Earl J. 1929. "American Capitalism and the Rise of Capitalism." *Economica.*

which is not sustained by its own shared mental representations. What's more, the historiographical turn to the cultural has sometimes decayed into the confortable position of ignoring the aforementioned importance of the material reproduction of societies, on the grounds that the importance of non-economic factors has been demonstrated. Following Bourdieu's sociology, certain currents in cultural history (viz. Roger Chartier) have even identified the cultural as precisely that which is not economic. Such an approach seems to me to pose intractable theoretical difficulties. Again, such a claim falls short of the need to consider all social relations as imbricated in dialectical relations, where the relations organizing material and social reproduction have not only played a crucial role, but are also constituted by the cultural.

The difficulties encountered by the social sciences might be lifted, I suggest, through a reflexive critique of the way they contain and express certain assumptions about the economic as independent sphere. A secondary argument running through this monograph is that the social sciences, such as sociology, political science, anthropology, etc have in some fundamental ways inherited concepts of the economic which are political in the deep sense of the word; that is, that the social forces constantly reasserting the separation of the political and economic sphere have left their mark on the social sciences. To use the example

of Bourdieu again, and not incidentally, it could be said his sociology projected the market-form of interaction on all spheres of society.

My aim has been to go beyond current histories of economic knowledge, which too often assume their object is given. To speak of "knowledge" is here already a prejudice; whether or not something is knowledge is neither fully an actors' category, nor to be judged by the standard of our contemporary orthodox economic theory. For this reason, histories of economic thought which narrate a progress towards neoclassical economics will be of no aid. Furthermore, we cannot assume that "economists" are the primary producers and holders of economic knowledge, because knowledge expresses itself in a certain control over the word, yet what is knowledge can only really be judged from a more totalizing perspective, and more likely once the owl of Minerva has already taken flight. To the extent that economists and economic knowledge play a role at all it is as *a constituent part of the social contradictions themselves*, which they magnify or attempt to annul.

In order to understand the argument I propose, it is essential to understand the distinction I make between the *sphere of exchange* and *the market.* It is barely controversial to claim that the entity called "markets," as

studied by much of contemporary economics, does not exist in reality. If there is no such thing as a market, why do people believe there is?

The sphere of exchange is a necessary condition of the value-form, which means that society reproduces itself through the production of commodities, a medium through which members of a society exchange amounts of labor time. This social form holds the key to explaining the belief in the existence of markets. In its historical deployment, the value-form tends to push to a kind of social mediation where it replaces all other forms of social cohesion. However, this movement towards a society mediated totally by exchange value is an impossibility, is approached only asymptotically, if only because commodities do not meet on their own. I will show that that rise of exchange value as the dominant form of main social intercourse called forth the need for a market ideal.

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The economic knowledge of those societies in which the capitalist mode of production prevails presents itself as an enormous accumulation of numerical data. The explanation of this fact holds the key to the presence of an "economic sphere" unique to capitalist societies. I argue that the rise of quantitative objectivity, visible in this mountain of data, results from but also helps bring about the rise of the value-form, in other words *abstract labor.* In the capitalist mode of production the human activity by which society is produced and

reproduced, insofar as it is mediated by money, is no longer a concrete activity but is *abstracted*, gains existence as labor in the abstract. Abstract labor, a certain quantity of human labor-time, is synonymous with the expression of *value*. The existence of money is a necessary condition for the emergence of abstract value, but money by itself does not bring into existence abstract value.

The emergence of abstract labor is the central facet to the emergence of capitalism: the dissolution of the social relations of production of the feudal order and their replacement by forms compatible with capital, mediated through money. The most salient case is the emergence of wage labor from the progressive abolition of guilds, manorial servitude, and serfdom.

The economic and the political, in their modern form, emerge from a process of mutual exclusion in which numbers, as a social practice, is mobilized to act on a certain fraction of life in order to exclude it from political contest. In 18^{th} century France, the expansion of the sphere of exchange, which was co-extensive with the rise of abstract labor and the value form, displaced the mental structures in which exchange had taken place before. To the personally incarnated authority of the grain measurers was substituted the numbers of the *échelle mobile*, stipulating the admissible price levels throughout France. Political liberalism was not tuning-in to the underlying reality of naturally existing markets. A sphere within society where judgment was excluded, either of a moral

or political kind had to be produced. Numbers were mobilized for this reason. I take the replacement of the venal office of the measurers by the *échelle mobile* as example of the simultaneous and mutually exclusive constitution of the economic and the political in the modern sense of these terms.

To understand the importance of numbers as a social practice in generating the economic, one must recognize that the idea of market as a force generating the truth of prices did not exist until the second half of the 19th century. That this claim surprises at first might betray an anachronistic retro-projection of the current vision of economic exchange onto the past. Neither the physiocrats nor the classical economists placed the markets at the center of their systems, as an entity carrying normative force. The arguments in favor of a natural order to the economic during this time were rooted in the tradition of natural law, carrying over elements from Grotius and Locke. They centered on the right of individuals to dispose of their property as they saw fit. Granted, such a view had much to do with loosening the "traditional" feudal and absolutist structures of economic production and exchange. Still, the "objectivity" of natural law was of a quite different kind than the objectivity secured by the numbers. The source of normativity is different, in the latter case the normativity comes from the apodictic force of the numbers themselves. They act as substitutes of authority, suspending questions from the political realm.

The production of the economic as independent sphere resulted from conflicts concerning exchange value. These conflicts exploded on the scene with force precisely because, with the rise of capitalism, the sphere of exchange became the general site of social validation and the necessary passage point. How did the sphere of exchange become the market? As I suggest, this occurred later than might be expected. The discourse of natural law, to the extent it was used to legitimate the right to dispose of property, functioned well enough for the capitalist class. It was rather the contradictory role of the state which required the theorization of the market as theorization of the state's own self-limitation. For this reason, some of the first to theorize a mathematical theory of monetary exchange at the scale of a single market, or for a single good, were engineers in the French civil service. Some are known today as "precursors" of neoclassical economics; Dupuit and Cournot for instance. The French state engineers were first and foremost interested in *public* utility. Before the 19th century, this was not seriously considered to be quantitatively measurable. In the 19th century, drawing on liberal political economists such as J-B Say, they increasingly began to think of utility as related to exchange value. This was due to, on the one hand, real changes in the economic organization of France, and on the other hand, pressure from political economists and liberals criticizing the state's control of public works. The measurement of public utility was a way to prove or

disprove the effectiveness of the state engineer's management, either for particular projects, or as a principle in general. Still, the French corps of civil engineers did use these numbers as the basis for standardized calculation techniques.

Revolutions throughout Europe in 1848, the rise of labor movements, the Paris Commune in 1871, along with the publication of the writings of Marx, conditioned a multi-polar renewal in political economy, comparable by a shared effort to demonstrate that economic value did not have its origin in labor. In France, Leon Walras radicalized the methods for calculating utility developed by Dupuit and Cournot, turning the market into the normative locus of economic organization. If Walras is read as a political theorist, two ontological power-grabs are salient: Walras delineated the sphere of the economic as precisely that sphere ruled by utility, while the political is ruled by justice. Thus, Walras positioned the economic as ontologically independent, and obeying different laws. Second and more importantly, Walras turned the market into a machine that could speak for him. On the question of the price of land, he was able to make apodictic demonstrations using his mathematical theories. What matters in that case are not the numbers themselves, but the system of equations, which became the market itself, was imagined to express something more ontologically prior to the economic order empirically visible. It would be tempting, but exactly

wrong, to assume that Walras was extending the hold of the mathematically inclined state functionaries over the economic world. Situated in its historical context, Walras' political intervention was aimed precisely at turning the table on the personal judgment and authority held by the state functionaries like the state engineers. By doing it using mathematics, Walras was able to mobilize against the engineers in a way unprecedented by the liberal political economists. With the walrasian general equilibrium, individuals become mere vessels moved by an impersonal force outside of them. This force stipulates exchange value. The authority of the individual to say what something is worth has been *transferred* to an impersonal entity. It is not by mere co-incidence that this occurred through the language of numbers.

This great division of the world, the epistemic enclosures still with us today had an origin in the social and political contradictions unleashed by the rise of a new mode of production. Establishing the concrete mediations through which this has come about historically, the claim is by no means outrageous allows us to begin a reflexive critique of the categories using by social sciences in currency today. Through the intellectual movements following Walras, from Pareto to Max Weber to Parsons and so on, calculation was held to be precisely that which defines a social action as an economic action. With such a view, it is nearly impossible to generate a history where the calculative tools and

representations enter into dialectical play with the material basis of society. In other words, where there is constant tension between the quantitative representation of economic activity and the real movement of economic activity—for our period of study, the laws of motion determine the history of the development of capitalism.

The economic as subjectively delineated sphere of social activity thus appeared centrifugally, from the tension between politics and anti-politics. In the second part of the dissertation, I investigate how this independence was generated through legal and political practice. The statesman and economist John K. Galbraith had describe the market as an answer to what he called the "problem of power." Galbraith had a nuanced few of the market; while he did not deploy a thorough critique of market liberalism, he seemed to have doubted it could really remove arbitrary. In the United States, this critique of naturalistic market liberalism found a particularly strong expression in the current of legal thought represented by Robert Hale, today called sociological legal realism. This legal current is described as realist because it sought to describe the really existing power relations within a society, as opposed to a purely formal view of legal relations. As I interpret it, this current of legal thought was expressing a growing tension within then mature capitalism during the early decades of the 20th century.

Numbers were called to answer the problem of power. Through a close study of the activities of the War Industries Board during WWI, I show how the market ideal was mobilized by the leading economist in the US to determine the price at which the federal government would purchase goods for the war effort. The market ideal, in the form of a specific axiomatic apparatus, was called to speak for the War Board. I show that the development of economic theory during this period was closely tied to the questions of "rate-fixing" and "price-fixing"— hypothetical markets were more important than real ones. Statistics, too, were called to solve the problem of power. This was visible in the growing importance of the cost-of-living index. Similarly, a price index was used to regulate the policies of the federal agricultural administration. In the words of George Peek, the director of the agricultural administration during the late 1920s, this index was like a "harp-of-the-winds"— an aeolian harp—by virtue of its similarity to the musical instrument functioning independently of human action. The statistical apparatus would protect the economic rights of farmers from further political squabbling. Peek's image to expresses an ethos, a quest to exclude individual judgment using numbers, conditioned by the specific characteristics of US political structures. The aeolian harp might stand for the market ideal, at least that of market liberalism during this period, organized as it was around the belief that the objective tools of economic science could indeed produce an

economic sphere free of the distorting influences of individual and political power.

The third part of the dissertation examines the quest for objectivity in the representation of the economy as a whole; again using a comparison between the US and France. In its representation as totality, the capitalist economy expresses contradictory aims: on the one hand, representations such as national income accounts and input-output matrices promise to lift the crises inherent to capitalist development. On the other hand, at least in the case of France, to the extent that these representations were associated with greater political intervention in economic life, they came to form a limitation that Capital had to demolish. By the early 1960s, the post-war economic boom came to an end as the secular stagnation in the rate of profit reemerged. Throughout the economically advanced western nations, this conditioned a revolt of Capital. In France, this took the form of efforts to reduce autonomous state spending and to suppress wages. I examine how these imperatives translated to changes in economic representation and changes in the practices of economic objectivity. During the post-war decades, the French direction of economic planning, composed of engineers and economists in the civil service and administration, enjoyed much the same independence from political challenges as the engineering corps during the 19th century. During the late 1960s, cost-benefit analysis and formal

economic modeling were called to clamp down on this relative freedom. The aim of these newly introduced tools was to limit political power, but the form of the economic models and of cost-benefit analysis was such that they also aimed to impose the capitalist value-form on the use of state resources.

The modern concept of rationality can only be fully understood when taking into account these social and political conflicts underlying its development. Cost-benefit analysis, rooted in Pareto's expansion of general-equilibrium, reasoned about rationality as the activity of a capitalist investor. Post-war neoclassical economics generated a theory of rational action with the problem of optimal investment decisions as primary object. The individual, facing uncertainty, who must choose how to allocate resources between competing ends, is the *personification* of the capitalist state apparatus, no less a part of capitalism than the iconic "firm" of business history. Through the mediation of practices of objectivity such as cost-benefit analysis and economic modeling, the problem of allocation was maintained as economic rather than political. Still, cost-benefit techniques never gained more than a suggestive value in French economic administration. In the United States, they formed the basis for the selection and approval of major public investments such as the dam projects of the Bureau of Reclamation. The pricing involved in cost-benefit analysis was in any case not an unproblematic question; generally, the costs used to calculate were a sum of

prices from the sphere of circulation. However, in the 1970s, several departments in the US began quantifying costs and benefits using the so-called "willingness to pay" approach. The dialectical nature of these economic representations is particularly clear in this movement. The measurement by willingness to pay was still rooted in the market imaginary, but it employed the normativity of the market ideal against its own limitations. As Katherine Hood has shown, the willingness to pay method was used by the Environmental Protection Agency, among other departments, to add to calculations new kinds of benefits that could only be measured with difficulty, and to show that the value of the human lives saved by government policies was greater than what purely "economic" measures would reveal.[4] I call this the necessity of "speaking like a state." In other words, the force of an existing practice (and of its co-extensive discourse) determines the nature of the resistance to that very discourse. This dynamic generally strengthens rather than weakens the distinction between the economic and the political, by positing anew the discourse of mechanical objectivity as the tool producing this distinction. In the last few decades, as a result, the new persona of rationality is not the investor deciding the optimal allocation of resources, but the individual situated in a "universal market," the whole world made market,

[4] Hood, Katherine. 2017. "The science of value: Economic expertise and the valuation of human life in US federal regulatory agencies." Social Studies of Science 2017, Vol. 47(4).

having to decide on their willingness to pay for one course of action rather than other. This individual already contains, within, the distinction between the economic and the political. And a whole field of economic, philosophical, and political theorizing has developed in academia, interrogating the psychological paradoxes and rational failings of this persona, as if it was the human in its essential form.

This study illuminates the particular form of the "realm of necessity" in capitalist societies. In our own contemporary capitalist society, everywhere human action appears constrained by the requisites of an economic logic to which, it is said, there is no alternative. I provide a history of this particular mode of economic necessity.

Recall that Marx opposed, in a well-known passage, the "realm of necessity" to the "realm of freedom." He thought that the development of the productive forces had the potential of allowing humans to conquer (some would say re-conquer) a period of daily time for free human flourishing. In this sense, the realm of necessity results from the confrontation of humans with nature, the constant need to produce and reproduce their social and individual existence. But since humans, in their social being, confront humans only through the mediation cultural and social structures, the realm of necessity is created through human representations, through mental constructions, the imaginary world by which

humans exist in the world. Still, the fictitious nature of this rationality is not an accident, since it responds to the historically specific contradictions particular to the mode of production. Understanding the true nature of this human-produced realm of necessity might get us closer to answering the great enigma of our time: to what extent is economic necessity fictitious, and to what extent is it unsurpassable?

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