INEQUALITY, EXPLOITATION, JUSTICE AND SOCIALISM:

A THEORETICAL-HISTORICAL APPROACH

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1. Introduction

Although this paper, it is hoped, will be self-contained, it is the third in a project whose purpose is to generalize the Marxian concept of exploitation in capitalist economies. The motivation of this project is to understand the formation of inequality, strata and classes, and perhaps exploitation, in socialist societies. The "laws of motion" of socialist society have not been studied by Marxists in a Marxist way; there is no widely accepted materialist theory of the development of classes and inequality under socialism. Perhaps more noticeably, there is no widely accepted materialist (Marxist) theory of the political behavior of socialist states. Indeed, the response of many or most Marxists to wars between socialist states, for example, is that at least one of the countries involved is not socialist. This argument is tautological and not scientific: since two socialist countries could never fight each other, therefore the major premise (that they are each socialist) must be false.

The example of wars between socialist countries is given to point out the nature of the crisis in Marxian theory: that theory, formulated in the late nineteenth century to explain the development of nineteenth century capitalism, is not terribly useful when applied to late twentieth century socialism (and capitalism, perhaps). Late twentieth century Marxists cannot, for instance, agree on the nature of Soviet society. Is it socialist, capitalist, state capitalist, or transitional? What precise definitions might one give to decide?

One tenet of historical materialism is that political behavior of nations is corollary to economic behavior. Consequently, from the Marxian point of view, to understand the politics of modern socialist

nations one must first understand the "internal laws of motion" of their economies. This paper and its two predecessors are an attempt to approach this problem in an abstract and, at this point, quite narrow way. The question they lead to is this: Is it meaningful to speak of exploitation in socialist society?

Although this question might strike one as independently interesting, why is it an appropriate question to ask in regard to understanding the laws of motion of socialism? The power of the Marxian description of capitalism is predicated on its theory of value and exploitation for capitalism. The guiding methodological intuition is that an understanding of inequality and strata under socialism, perhaps "socialist exploitation," can therefore form the core of an understanding of the dynamics of socialist society. If we follow the historical materialist dictum that "all history is the history of class struggle," then a guide to the history of socialism is to study the peculiar form of class struggle under socialism, whatever that may mean.

First, we require a definition of exploitation under socialism: is there a generalization of the Marxian notion of capitalist exploitation which might apply also to socialism? To develop an intuition, we have experimented with the Marxian notion of exploitation to see how general it is.                    It is shown in Roemer (1979) that Marxian exploitation can be logically conceived of as existing in pre-capitalist, subsistence, exchange economies, in which there is no institution for labor exchange (only produced commodities are traded). In particular, neither a labor market nor accumulation is necessary to produce a phenomenon Marxists would call exploitation. Marxian exploitation is a phenomenon which can exist in economic mechanisms without several of

the distinguishing features of capitalism.

The task of this paper is to propose a general taxonomy of exploitation, which will have as special cases feudal exploitation, capitalist exploitation, and socialist exploitation: if you will, this taxonomy constitutes a general definition of exploitation. Although our intention is to apply this taxonomy to understand socialist development, as has been briefly described, there are several unrelated but interesting applications of the taxonomy. Since a society in which "exploitation" is absent is a "just" society, we shall also, inadvertently, be offering a "theory" of justice. The quotation marks on "theory" are meant to underscore that, at least initially, our task is to produce a taxonomy or definition, considerably less than a theory. Nevertheless, a general taxonomy of exploitation should have some bearing on other (non-Marxian) theories of justice, and we address some of these in Section 7 below.

Another benefit from such a taxonomy is its provision of a common language, within which social scientists can agree to disagree. Neoclassical economists often challenge Marxists to defend their notion of exploitation: granted, surplus value (if **one wants to call it that**) exists under capitalism--but why should one call that exploitation? It is shown below how both the "neoclassical" conception of exploitation and the Marxian conception are special cases of the general taxonomy. We can make precise what is the inherent normative disagreement between neoclassicals and Marxists on this issue.

The outline of the paper is as follows. First, the taxonomic device is explained.                **It is then applied to** produce definitions of feudal exploitation and capitalist exploitation. Although the terms of the definitions are completely different from the usual Marxian language

of surplus value, it is shown that the proposed definition of capitalist
exploitation is equivalent to the classical Marxian definition.  To do
this, we examine the models which were developed in Roemer (1979, 1980).
Next, in Section 5, we discuss how history, according to the Marxian
vision, successively eliminates these two forms of exploitation.  In
Section 6,                 a third application of the taxonomic device
definessocialist exploitation, and we discuss some of the limits of this
concept for understanding inequality in modern socialist society.  Section
7 discusses briefly the Rawlsian theory of justice, as another applica-
tion of the taxonomic device, and some neoclassical notions of justice.
In Section 8, the question is addressed:  To what extent can this taxonomy
be considered a theory of exploitation?  And Section 9 returns to the
motivating question of socialism, and asks what added perspectives on
inequality under socialism we derive from this work.


2.  Exploitation and Alternatives

        In virtually every society or economic mechanism, there is inequality.
Yet not all inequality is viewed by a society as exploitative, or unjust.
Certainly, however, the notion of exploitation involves inequality in
some way.  What forms of inequality does a particular society view as
unjust inequality, and what forms does it consider just?  The inequality
of master and slave was viewed as just in ancient society, as was the
inequality of lord and serf in feudal society, although today most of
us consider both of these relationships exploitative.  Similarly,
Marxists view the inequality in the capitalist-worker relationship as
exploitative, although this inequality is conceived of as just by many
people in capitalist society today.  We wish to propose a theoretical

device for helping us decide which types of inequality a particular society treats as exploitative: or, more precisely, what device can we propose which distinguishes accurately exploitative from non-exploitative inequality, according to the norms of a particular society?

To capture what is meant when it is said that a particular person or group is exploited, we propose this: a group is conceived of as exploited if it has some alternative under which its members would be better off. Precisely what the alternative is we leave unspecified for the moment. The general claim is that this device can be applied whenever people use the word "exploit" referring to the human condition. If two people disagree on whether a particular group is exploited in some situation, then our device leads us to ask: Are they specifying the alternative for the group differently? We wish to propose different specifications of the alternative which will generate different definitions of exploitation.

Formally, this amounts to specifying a game played by coalitions of agents in the economy. To define the game, we specify what any particular coalition can achieve on its own, if it withdraws from the economy. The alternative to participating in the economy is for a coalition to withdraw and take what it can achieve on its own, under the specified definition of the game. If a coalition can do better for its members under the alternative of "withdrawing" then it is exploited under that particular specification of the rules for withdrawal.

To make this less abstract, consider the usual notion of the core of a private ownership exchange economy. The core is the set of allocations which no coalition can improve upon by withdrawing under these rules: that it can take with it the original endowments of its members.

Under these particular withdrawal rules, there is a certain utility frontier available to any coalition, and we could say a coalition is exploited if it is receiving utilities which can be dominated by a vector of utilities achievable by the coalition on its own, given those withdrawal rules. More generally, if we adopt a different rule of withdrawal, which is to say a different way of specifying the achievable rewards of the various coalitions on their own, we will have a different game and a different core. Our definition is simply this: exploitation occurs, at a given allocation, if that allocation is not in the core of the game defined by the particular withdrawal specification under consideration. That is, a coalition is exploited if it can block an allocation, under the rules of the game.

This simple device captures effectively the idea that we conceive of exploitation as the possibility of a better alternative. Our proposal for what constitutes feudal exploitation, capitalist exploitation, and socialist exploitation amounts simply to naming three different specifi- cations of withdrawal rules. One can then, if one wishes, compare different concepts of exploitation by comparing the different rule specifications which define their respective games. We exhibit a particular concept of exploitation in explicit form, as it were, as the rules of a game.

## 3. Feudal Exploitation

We shall not be terribly precise concerning the underlying model of feudal economy. Think of agents with various endowments, who are engaged in production and consumption under feudal relations. We say a coalition is feudally exploited if it can improve its lot by withdrawing under these rules: the coalition can take with it its own endowments.

Thus, non-feudally exploitative allocations are, in fact, precisely the usual core of the exchange game, as conventionally defined, and discussed above. The claim is this withdrawal specification is the correct one for capturing feudal exploitation, as it gives the result that serfs are exploited and lords are exploiters, which is the notion we wish to capture. Moreover, non-serf proletarians, for instance, will not be an exploited coalition, under these rules, and so the definition captures only feudal exploitation.

To see the first claim, we will assume that feudal serfs owned their own land.[1] Feudal law required them to work the corvée, not to have access to the family plot, but in spite of this access. Thus, were a group of serfs to be allowed to withdraw from feudal society with their endowments, in which we shall include the family plots, they would have been better off, having the same consumption, but providing no labor for the corvée. Withdrawal, under these rules, amounts to withdrawal from feudal bondage. In fact, it has been argued that many serfs would have been better off if they could have withdrawn from bondage, even without their land; surveillance of serfs was necessary to prevent them from running away to the towns, to which they could presumably carry only their non-land endowments. Indeed an efficient improvement in capitalism as an economic mechanism contrasted with feudalism was the absence of such surveillance costs: proletarians could not survive simply on their own endowments, and so would participate in a voluntary labor market. (See Brenner (1977).) Similarly, feudal lords constituted an exploiting group under those with-drawal rules: that is, a coalition of lords would have been worse off by withdrawing with its own endowments, since serf labor would not have been forthcoming.[2]

There is, however, a possible counterargument, which could have been put forth by a feudal reactionary:  serfs would not be better off, he might say, by withdrawing with their own endowments, because they receive various benefits from the lord which they cannot produce on their own, the most obvious being military protection.  Also one might believe the lord possessed certain skills or abilities of organization of manor life, without which the serfs would be worse off.  (Indeed, the story has a familiar ring.)  These arguments do not sound terribly compelling today, and so I will not attempt to seriously rebut them.  Let me simply observe that, concerning military protection, even were it necessary, the serfs' corvée labor produced a good deal more than that, witness the castles and extravaganzas of the lords.  (One aspect of extravaganza was, of course, military adventure.)  But more to the point, serfs did run away to towns in numbers (even without their land), and they rebelled countless times against feudal law, despite its attendant benefits; so if we take a revealed preference approach, we must conclude that serfs would have been better off with the freedom to withdraw from bondage.[3]

The final claim, that non-serf proletarians are not feudally exploited, will become clear in the next section.


4.  Capitalist Exploitation

To test whether a coalition of agents is capitalistically exploited, we specify a different set of withdrawal rules to define the game.  When a coalition "withdraws," it is allowed to take with it its per capita share of society's alienable property.  That is, a coalition can block a particular allocation if that allocation can be improved upon by the coalition, when the initial endowment of alienable assets is an equal-

division, egalitarian endowment. While the test for feudal exploitation
amounts to equalizing every agent's access to <u>freedom</u> in constructing
the alternative against which a current allocation is judged, the test
for capitalist exploitation amounts to equalizing every agent's access
to society's tangible property (means of production) in constructing
the hypothetical alternative. Under feudalism, we ask how well agents
do if relations of feudal bondage are abolished; under capitalism, we
ask how they fare if relations of alienable property are abolished.
Given this phrasing of the alternative, it is not surprising that capi-
talist exploitation, as here defined, is equivalent to the usual Marxian
definition of exploitation in terms of socially necessary labor time
and surplus value.

To see this more precisely, we show the equivalence of capitalist
exploitation with Marxian exploitation as it is defined in the models
of Roemer (1979, 1980).[4] First, we treat the simplest model of a pre-
capitalist, subsistence exchange economy in Roemer (1979). Let
$\xi = (p, x^1, \ldots, x^N)$ be a reproducible solution for the economy without
labor market, $E(p)$ , where the endowment of produced commodities of
agent $\nu$ is $\omega^\nu$ and the technology is $(A, L)$ and the individual subsistence
requirement is $b$ . Let a coalition $S \subseteq \{1, 2, \ldots, N\}$ be <u>Marxian-exploited</u>
at the reproducible solution, which is to say the total labor time worked
by the coalition exceeds $sL(I-A)^{-1}b \equiv s \wedge b$ where $s = \#S$ :

$$\sum_S Lx^\nu > s \wedge b .$$

When the coalition withdraws, it is assigned a total endowment $\dfrac{s}{N} \sum_1^N \omega^\nu$ ;
since there are constant returns to scale, a reproducible allocation is

available to the coalition with these endowments, as the entire economy possessed a reproducible allocation with endowments $\sum_{1}^{N} \omega^{\nu}$ . At a repro-ducible allocation for the coalition, its members work precisely $s \wedge b$ total labor time. Consequently, labor times may be assigned to the members in such a way that each works less time than he worked at society's reproducible solution $\xi$ . (If every agent of S is _individually_ Marxian-exploited at $\xi$ , then we simply assign each agent a work-time of $\wedge b$ in the coalition. But in general, a coalition S can be Marxian-exploited even if not all its members are, and our argument applies to this general case.)

Conversely, it is easily seen that any coalition which is capi-talistically exploited is Marxian-exploited. For if, when a coalition S withdraws, it can do better for all its members, then the total work of its members at $\xi$ must have been greater than $s \wedge b$ , which is how long the coalition must work to reproduce itself on its own. This argu-ment also shows that coalitions which are Marxian-_exploiting_ are precisely those which are capitalistically exploiting.

The same equivalence of Marxian-exploited and capitalistically exploited coalitions holds for the model of an accumulating economy without subsistence requirements, studied in Roemer (1980). Since agents in that model do not have utility functions, we must specify how to evaluate whether a coalition can make itself better off. The objective function of agents in that model is to maximize profits at the ruling (equilibrium) prices. These prices will also constitute an equilibrium for a coalition which withdraws with its _per capita_ share of society's produced goods, and we can show the following: if a coalition is Marxian-exploited at an equilibrium in the accumulation economy then, under the stipulated

rules of the game, it can make more profits for all its members when
it withdraws. If a coalition is Marxian-exploiting, there is no allo-
cation of profits in the coalition operating on its own with its _per_
_capita_ share of endowments which improves the position of every member.
We can also phrase the "better off" criterion without reference to prices
in this way. If a coalition is Marxian-exploited, then when it withdraws,
it can product an aggregate net output vector which strictly dominates
(component-wise) some net output vector available to it as a coalition
in the parent economy. Furthermore, no net output vector available
to the coalition in the parent economy dominates the net outputs which
the coalition produces on its own. (However, there will in general be
feasible assignments of net output to the coalition in the parent economy
which neither dominate nor are dominated by the net output available to
the coalition on its own.)

Although the specific arguments in these paragraphs will be un-
familiar to readers who have not encountered the models discussed, the
intuitive content should be clear. Marxian exploitation has been modeled
in this way: agents all have access to the same technology and all have
the same skills and labor power. They differ only according to the vectors
of initial endowments of produced goods they possess. Production takes
time, and production today requires one to lay out the costs of production,
which are financed out of current holdings of produced assets. (If one
wishes to borrow to finance production, the cost is the interest rate.)
Consequently, those with more endowment of produced goods have more oppor-
tunities open to them, and fare better. In the simplest model (the sub-
sistence model), agents who are endowment-poor end up working longer than
is "socially necessary" to reproduce themselves, in the Marxist sense.

In the test for capitalist exploitation, we hypothetically annilihate
the only difference among agents, which is to say, their differential
endowment of produced goods. It is not surprising, then, that the endow-
ment-poor become better off after this annilihation, and the endowment-
rich worse off. In most summary form, our specification of the games
which define feudal and capitalist exploitation capture precisely what
is meant when we say feudal exploitation is that inequality which comes
about because of specifically feudal relations, and capitalist exploita-
tion is that inequality which is the consequence of relations of private
property in the produced means of production (capitalist relations of
production).

Just as our feudal reactionary argued that, in fact, serfs would
not have been better off had they withdrawn with their own endowments,
so a "bourgeois reactionary" might argue that those who are Marxian-
exploited (that is, whose surplus value is appropriated by others) would
not, in fact, be better off were they to withdraw with their per capita
share of society's produced goods. The surplus value which workers con-
tribute to the capitalist is, in fact, a return to a scarce skill possessed
by him, necessary for organizing production (for instance). We should
notice that in terms of the formal models of Marxian exploitation which
have been studied (in Roemer (1979, 1980) and elsewhere) this is not
an issue, as capitalists are pictured as simply owning resources, and not
as the vessels of entrepreneurial talent. Nevertheless, the bourgeois
reactionary's argument is in theory a correct one: if, in fact, equali-
zation of produced assets would not be sufficient to make Marxian-exploited
workers better off on their own, then they are not capitalistically
exploited. This is a non-trivial bone of contention between Marxist

and bourgeois thinkers. I will call this the subtle disagreement on the existence of capitalist exploitation under capitalism.

There is, however, a much less subtle disagreement also. A common "neoclassical" position, I believe, is that exploitation (whatever that means) does not exist at a competitive equilibrium, because everyone has gained from trade as much as possible. How can one say A is exploiting B if A has voluntarily entered into trade with B? Now the models of Marxian-exploitation which have been referred to, show that gains from trade and Marxian exploitation are not mutually exclusive. (The proletarian gains from trading his labor power, since otherwise he starves, but his surplus labor time is nevertheless expropriated.) What is at issue here is precisely the difference between feudal and capitalist exploitation. The statement that no coalition can gain further from trade amounts to saying the allocation is in the (feudal) core of the economy: no group of agents, withdrawing with its endowments, can trade to a superior allocation for its members. Hence this variant of the neoclassical position says "There is no feudal exploitation under capitalism," a statement which is true by the well-known fact that competitive equilibria lie in the core of the economy!

It is not always obvious whether objections to the Marxian notion of exploitation are of the subtle form (in which case there is a substantial disagreement about the contribution of agents' intangible assets to production), or of the non-subtle form (in which case there are two different varieties of exploitation under discussion). In the non-subtle case, the antagonists can agree to disagree: they are simply adopting different specifications of the hypothetical alternative which they respectively view as normatively cogent for testing "exploitation." I

would argue that the non-subtle disagreement is quite prevalent. In
particular, if both parties to the discussion agree to model agents as
differing only in their ownership rights of produced goods, then the
disagreement must be of the non-subtle variety. When the "neoclassical"
party says that the proletarian is not exploited by the capitalist because
the latter requires a return to his capital (being, we insist, produced
goods, not skills) for whatever reason, what is in fact being said is
that ownership rights of produced means of production must be respected,
and therefore the test for capitalist exploitation is not appropriate.

To force more precision in discussions of this nature, it is
convenient to differentiate between entrepreneurs and coupon-clippers
among the class of "capitalists." Entrepreneurs presumably earn a high
return to their intangible endowments, while coupon-clippers earn a
return only to their tangible endowments. If we conceive of the capitalist
class as predominantly composed of the former, then the statement that
"exploitation does not exist under capitalism" can be consistently inter-
preted as referring to capitalist exploitation; if the latter, then that
statement can only refer to feudal exploitation.

There is, however, one most important piece of circumstantial
evidence against the hypothesis that the prevailing disagreement about
exploitation under capitalism is of the subtle variety. Prevailing norms
of neoclassical (liberal, pluralist) social science respect private property
in the means of production. (In contrast, they do not respect relations
of personal bondage of either the slave or feudal type.) Consequently,
prevailing liberal philosophy cannot accept the test for capitalist exploita-
tion which has been proposed, for that test nullifies property relations.
Note that a proponent of the existence of capitalist exploitation would

not judge all inequality under capitalism as being of the exploitative type--only that part of it which has its origins in capitalist exploitation which could be eliminated by an egalitarian distribution of endowments of tangible resources.

I will therefore tentatively conclude that a fair summary of prevailing liberal opinion, which argues against applying the term exploitation to the idealized equilibria of a private ownership market economy, is, in the terms of this taxonomy: "There is no (feudal) exploitation under capitalism." This is a true statement. Marxists would argue, however, that there is (capitalist) exploitation under capitalism, although --and this is critical--not all inequality would be eliminated by abolishing private ownership of the means of production.

## 5. The Elimination of Successive Exploitations: Historical Materialism I

In the passage from feudalism to capitalism, feudal exploitation, in our technical sense, is eliminated. At the capitalist equilibrium, there is no feudal exploitation, precisely because every coalition is free to withdraw with its own resources and improve its position. In fact, the capitalist revolution does more than this: it abolishes by law the very basis of feudal exploitation, prohibiting bondage. People cannot even voluntarily enter into bondage. Under capitalism the prevailing morality views relations of bondage as exploitative, and abhorrent, so much so that society does not allow individuals to choose whether they wish to suffer those relations.

In the passage from capitalism to socialism, capitalist exploitation is eliminated. Private ownership in the means of production is made illegal. Individuals are (with certain minor exception) not allowed

to enter into relations of wage labor with other individuals, even should they so voluntarily choose. (We have not discussed the linkage between the wage-labor relationship and private ownership of the means of production; this is dealt with in detail in the previous two papers in this series. The general conclusion is that those who hire labor power are Marxian-exploiters in capitalist economy, and those who sell it are Marxian-exploited. Under capitalism, <u>class</u> <u>relations</u> such as these arise endogenously as agents optimize given their endowment constraints.) It is clear that, at least in principle, capitalist exploitation is eliminated under socialism, if we view socialism as an economic mechanism in which every agent has equal access to the alienable means of production. (This is discussed more below in Section 6.) Under socialism, the prevailing morality maintains that inequality which is due to unequal access to society's alienable assets is exploitative, abhorrent.

We see, therefore, the moral parallel in these two revolutionary transitions. Society appears progressively to adopt stricter criteria for what kinds of inequality shall be considered exploitative or unjust. After the capitalist revolution, all members of society are viewed as

entitled to equal access to freedom. After the socialist revolution, all members are to be guaranteed equal access to society's alienable resources. We do not ask, at this point, <u>how</u> this evolution of ethics occurs. We note, simply, the formal parallel, from which some perspective on our own (bourgeois) morality can be gained: to wit, the arbitrariness of it. Under feudalism, serfs had no "right" to freedom. (They did have, however, certain rights not possessed by slaves.) The ethical code of feudalism justified the place of the serf in society. We regard, today, such freedom as a "human right"; yet we do not recognize

a human right to equal property ownership. Indeed, the ethical code of capitalist society justifies in many ways the unequal distribution of alienable property. Under socialism, equal access to society's alienable property is viewed as a human right.

One might argue that expropriating private property hurts the well-endowed owners of it, and so a consequence of exercizing my freedom (from property relations) is to impinge on your welfare; but the same is true when feudal rights are "expropriated" from lords. I do not think there are any essential, qualitative differences between the alternatives posed by the rules of the games which define feudal and capitalist exploitation, which would enable us to categorically accept one game as appropriate and the other as inappropriate, from the vantage point of some supposed universal morality. History, it appears, sets itself the task of successively realizing for society's members the hypothetical alternatives posed by these withdrawal games. This is a formal phrasing of one of the tenets of historical materialism, to which we return in Section 8.


## 6. Socialist Exploitation

We now pose the rules of the game which define socialist exploitation; the reader may already have done this during the preceding discussion. Some endowments were not hypothetically equalized in formulating the core of the game to test for capitalist exploitation:  endowments of inalienable assets, skills. Let us picture an idyllic socialist economy where private property is not held, in tangible resources, but intangible assets are still held by individuals. Under market arrangements, those with scarce skills will be better off than the unskilled. This inequality

is not, of course, capitalist exploitation, as no one holds any private tangible property, and so no coalition can improve its position by withdrawing with its per capita share of society's tangible means of production. (Formally, either assume that tangible means of production are unnecessary and non-existent, or that each individual is assigned his per capita share of them in the socialist economy. More on this later.) We may, however, wish to refer to this inequality as socialist exploitation, characterized as follows. Let a coalition withdraw, taking with it its per capita share of all endowments, tangible and intangible. If it can improve the position of its members, then it is socialistically exploited at the allocation in question.

There are, of course, formidable problems with actually carrying out this procedure, as has been discussed by parties to the Rawlsian debate over talent pooling. (See, for example, Kronman [1979].) How can talents be pooled without destroying them, and so on? We shall discuss this problem in Section 8; although the potential realization of the alternative is problematical, as a hypothetical test, it can be well-specified, and for the sake of concreteness, a model is presented in an Appendix which does just this.

Thus, if we conceive of all individual endowments as being of either the tangible or intangible type, then an allocation is free of socialist exploitation precisely when it is in the equal-division core. Before examining more critically this proposal, we should note how a certain classical conception of socialism and communism is reflected in this definition. The historical task of the socialist revolution is to bring about a regime where each labors according to his ability and is paid according to his work, while the communist revolution (from socialism)

transforms the formula so that each is paid according to his _need_. Thus, socialist exploitation is to be expected under socialism: the elimination of differential rewards to ability is not socialism's historical task, only the elimination of differential reward to property ownership. The communist revolution is the one which eliminates socialist exploitation. This is as it should be, following the historical parallels of the demise of feudal exploitation in the capitalist revolution, and of capitalist exploitation in the socialist revolution.

Hence the rules of the latest game seem to fit classical definitions. The troublesome question is: To what extent can we attribute inequality in real socialist economies to "socialist exploitation"? I have only the beginnings of some thoughts on this question; even these, however, were much less clear without the taxonomic device which has been developed here.

The first relevant, important phenomenon is the existence of inequality in socialist countries which comes about by virtue of _status_. We are familiar with the remuneration to status (Communist Party membership, etc.) in socialist society. To the extent that status is itself a "competitive" remuneration to skill, it can be viewed as the conduit (or signal) which permits differential remuneration to skill. In principle, party members possess some scarce skills (the ability to lead the revolution, and so on), but there will be little debate here if I claim that not all (or even most) of the remuneration to status can be explained by remuneration to skill. How, then, should we treat inequalities due to that part of status which is not a signal for skill? Formally, this is most appropriately viewed as _feudal exploitation_: feudal exploitation is precisely exploitation by virtue of status. If we ask whether a coalition

under socialism could improve the position of its members if the rights of status were abolished,          the test is the same as for feudal exploitation.  (Some of the product of low-status individuals goes to high-status individuals; if the low-status ones could exempt themselves from their dues of status, they would be better off.  If in fact the high-status people are not especially skilled, the low-status people will be better off simply by withdrawing with their own endowments.)

Why has feudal exploitation reappeared in this more advanced historical form?  A conjecture is because of the absence of markets in current socialist mechanisms.  A long literature testifies to the belief that if the market is squelched, bureaucratic power must replace it. (A pithy Marx statement, on this issue:  "Rob the thing [money] of this social power, and you must give it to persons to exercize over other persons" (Marx (1973), pp. 157-8).)  Hence the question whether feudal exploitation must necessarily be concommitant with socialism is, under this conjecture, equivalent to the more familiar question of whether the practice of socialism conflicts with the use of a market mechanism.  A Hegelian might, at this point, propose that the recurrence of feudal exploitation must be a historical contradiction and transient phenomenon which will be resolved by the eventual use of markets under socialism.  I cannot pursue this issue here; at least this point suggests that the existence of exploitation by status in contemporary socialism may be a quite secondary phenomenon, in the sense of being the consequence of a particular tactic (the non-use of markets) of socialist development which may be of passing historical significance.

A second important question, with respect to the applicability of the theoretical characterization of socialist exploitation to current

socialist inequality, is this:  has socialism abolished capitalist exploita-
tion?  If a coalition of socialist workers were to withdraw, taking with
them their per capita share of society's tangible assets, could they
perhaps improve their position?  The reason this question emerges force-
fully is that tangible assets are not doled out in an egalitarian manner
to individuals under socialism--as they would be under a syndicalist or
anarchist mechanism--but are centralized in the hands of the state.
This, indeed, is precisely the left-anarchist critique of socialism:
in our terms, that capitalist exploitation will not be abolished so long
as property is not in the hands of individual producers, because there is
no  guarantee that the state will follow the best interests of the direct
producers.  Proponents of the thesis that state capitalism is the proper
way to describe the Soviet state are also saying that the state apparatus
is controlled by a stratum which employs the means of production in its
own interest.  As with the previous question, it is beyond our scope
to pursue this further.

Suffice to say, the taxonomic device allows an analytic approach
to the problem of inequality under socialism, in the sense that we can,
in theory, decompose inequality under socialism into three types:  feudal
exploitation (or exploitation by status), capitalist exploitation (or,
exploitation because of the imperfect control by producers over the means
of production), and socialist exploitation (or, exploitation due to dif-
ferential remuneration of skills).  This suggests a potentially fruitful
program, I think, for pursuing empirical research on the nature of
inequality in contemporary socialist societies, which could lead to their
appropriate characterization in the sequence of historical materialism.
We return to this briefly in Section 9.

## 7.  Neoclassical and Liberal Theories of Justice

A theory of exploitation is inversely a theory of justice, for a just society is one in which exploitation is absent.  It is consequently of interest to ask how neoclassical and liberal theories of justice fit into the taxonomic scheme which has been developed.

More generally, the approach we should take is this:  Given a distributional theory of justice, can we construct a game whose core consists of the "just distributions" of that theory?  Our method is to gain perspective on the theory in question by exhibiting it in explict form as isomorphic to the rules of a game.

### A.  Marginal Productivity Theory

Perhaps the most conventional conception of a non-exploitative income distribution in neoclassical economics is that every member of society get  paid the value of his marginal product.  "Exploitation" is due to departures from such a regime, which could occur because of monopolistic elements, informational problems, and so on.  It should be said that most neoclassicists would view "non-exploitative" as a weaker term than "just," in the sense that extremely skewed income distributions can be non-exploitative in the marginal productivity sense, whereas most would balk at calling these just.  Nonetheless, this conception of the interpretation of exploitation in neoclassical economics is sufficiently common to merit some remarks.

Ostroy (1978) has proposed a formalization of the idea of marginal productivity in a game-theoretic fashion, in a general equilibrium model, which is useful for translating the marginal productivity issue into a form accessible to our taxonomic device.  He views an exchange economy

as a game, and proposes that an agent can block an allocation for the economy if the complementary coalition to him is hurt by his withdrawing with his own endowments.  This notion of blocking is, at least a priori, quite different from the usual notion: Ostroy's blocks are punitive, in that the blocking agent bargains by reducing the welfare of the rest of society, whereas the usual notion of blocking is passive, in the sense that the coalition asks only if its own welfare can be improved.  Punitive blocks are akin to strikes, where the workers suffer, but they hope to bargain by inflicting hardship on the capitalist; the usual notion of passive blocking is akin to  Oneida-like socialist communities, who block by setting up a society which is superior, for them, to their situation in society-at-large.

Ostroy remarks that his notion is an attempt to capture in a general way the notion of marginal productivity.  If an allocation cannot be Ostroy-blocked by any agent, then each is getting the "value of his marginal product," in the sense that if he leaves, he will take with him precisely what he added to society's product, and so the others are not hurt.  One should be careful to point out that this is only marginal productivity in an abstract sense.  In Ostroy's exchange economy, an agent's value to society is embodied in the endowments he brings to trade; there need not be production in the usual sense.

What Ostroy shows is that for large economies (i.e., as the number of agents approaches infinity), the allocations which cannot be Ostroy-blocked approach the exchange core of the economy.  That is, the alloca-tions in which every agent gets his "marginal product" become, precisely, the allocations which cannot be blocked in the usual sense, by coalitions passively withdrawing with their own endowments.  But this is precisely

our definition of the absence of what we have called feudal exploitation.

Consequently, the absence of "neoclassical exploitation" (i.e., non-marginal productivity remuneration) is precisely the absence of feudal exploitation, which reenforces this same conclusion, arrived at earlier in Section 4.

## B. Rawlsian Justice

Can we propose a game whose core consists precisely of the maximin distribution which Rawls considers to be the "just" distribution? Although the terms of the Rawlsian discussion are quite different from the language of conventional economic models, the answer to the question is yes. We shall not present the solution here; it is developed elsewhere (Roemer and Howe [1980]).

Notice that the core of a game has an immediate interpretation as a social contract. Social contract embodies the notion of necessity, that individuals participate in society under certain restrictive rules because there is no option which is stable in the aggregate for society. This necessity is captured in the idea of a core: individuals may not be ecstatic with their rewards in society, but they agree to their "justness" on the grounds that there is no way for them to participate in a coalition which can improve the lot of its members, under rules of coalition-formation which society has previously recognized as legitimate. Thus, the "Rawls-game" which is proposed exhibits explicitly the contractarian nature of the Rawlsian theory of justice.

Moreover, displaying Rawlsian justice in explicit form allows us to remark upon some special assumptions of Rawls, about which there has been some debate. It becomes clear that Rawlsian agents are objectively extremely risk averse. The Rawlsian game also immediately suggests a

whole continuum of justice notions, of which Rawlsian justice is one
extreme point.

Rawlsian justice is not immediately comparable to the types of
exploitation which are discussed in this paper, because the focus of the
theory is a set of very different questions: in its game form, it becomes
clear that the distinguishing features of Rawlsian justice are due to
(1) the risk-averse nature of the agents, and (2) the incentive problems
which accompany a redistribution of income. By relaxing these two fea-
tures independently, we get two different theories of justice which are
more familiar. If we relax the risk-averseness of Rawlsian agents, and
model them as risk-neutral, but we still retain the incentive characteri-
zation of agents, then the "just" distributions become precisely the
no-redistribution distribution! Each member of society keeps what he
can produce as a consequence of his endowments. This is identical to
a marginal productivity distribution, and as such, this variant on the
Rawlsian theory becomes justice-as-the-absence-of-feudal-exploitation.
On the other hand, if the risk-aversion of the agents is kept but we
strike out the incentive problem—so that agents' pre-tax production
is independent of the tax rate which they are assigned—then the variant
of Rawlsian justice which results is a perfectly egalitarian distribution,
which is equivalent to our justice-as-the-absence-of-socialist-exploitation.

Hence, Rawlsian justice can be considered a variation from either
of these two positions in our taxonomy; the peculiar nature of Rawlsian
justice is due to the two special assumptions. (One might ask, why is
there not a variant of Rawlsian justice which is equivalent to our justice-
as-the-absence-of-capitalist-exploitation? Because in the way we, at
least, have modeled the Rawlsian problem, there is no essential difference

between alienable and inalienable endowments; the difference between capitalist and socialist exploitation rests on precisely this hierarchy of endowments.)

## C. Theory of Fair Allocations

Another proposal for distributional justice is that of fair allocation, and various variations on that theme. (These ideas have been developed in Varian (1974, 1975), Panzer and Schmeidler (1974, 1978), among others.) Consider an exchange economy where agents each have a utility function. A <u>fair allocation</u> is one in which no agent prefers the bundle of any other agent to the one which he has. In addition, some writers insist that an allocation be Pareto-efficient to be fair.

The problem with this fairness notion is its sensitivity to the subjective preferences of the agents. This is, perhaps, a controversial point: I believe a theory of justice should be independent of the individuals' subjective quirks. Whether an agent becomes "exploited" should not depend on the tastes he has, but should be determined by factors outside his control. This point is developed more extensively in Roemer (1980), where it is argued that the Marxian theory of exploitation is independent of individuals' subjective preferences. Similarly, Rawlsian justice is independent of subjective preferences: essentially, Rawlsian agents all have the same needs for the basic "good." I believe from a historical point of view these preference-independent theories of justice are more robust and cogent than theories where subjective preferences become paramount.

Rather than arguing this point philosophically, I will give an example of the pathologies which can accompany "fairness." Consider

an exchange economy with Crusoe and Friday. Crusoe has all the scotch,
and Friday has all the water, and there are no other goods. Friday is
a normal in the sense that he would prefer to have all the water to all
the scotch. The alcoholic Crusoe, on the other hand, prefers all the
scotch to all the water. The preferences of Crusoe and Friday are
illustrated in Figure 1. Friday, who likes an occasional drink, would
prefer having a bundle consisting of half the scotch and half the water
(E) . According to these preferences, which can be made perfectly rea-
sonable in theory (that is, they can be made convex as in the figure),
the original allocation is fair—even though the allocation can be thought
of as one where Crusoe has virtually all the wealth. (Note the alloca-
tion is also Pareto optimal.) There is, however, "capitalist exploitation"
occurring, because Friday would do better by withdrawing with his per
capita share of scotch and water. This points out how an allocation
can be fair solely because of the pathological tastes of the rich. To
make our example slightly more socially abrasive, we might envisage rich
white capitalists who own diamond mines and consume diamonds and caviar,
and poor black workers who work in the diamond mines and consume beer,
bread and soup. Yet, the poor workers may prefer the beer, bread and
soup to caviar and diamonds, in which case the allocation is "fair."
(This example is not quite precise, because I have introduced production,
which involves the consumption of another good, leisure. This is not
important to the issue at hand, however.) The example may grate against
our intuition: we think the poor would certainly opt for the diamonds
and caviar because they could trade them for much more beer, bread, soup,
steak, vacations, and so on. But such trades are not allowed in the
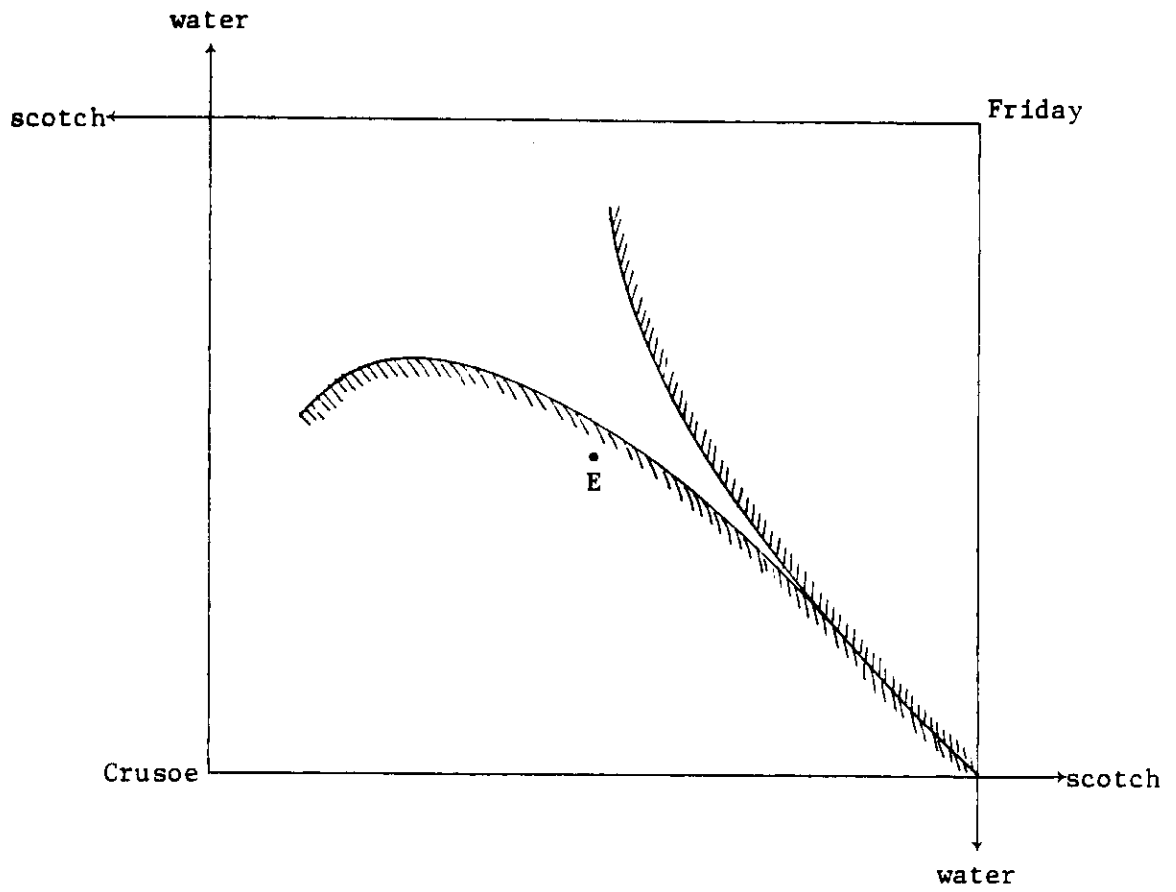evaluation of the fairness of an allocation! One can only ask: do I

FIGURE 1.  A Fair, Capitalistically-Exploitative Allocation.

envy him for what he <u>has</u> not for what he could <u>get</u> with what he has?

Panzer and Schmeidler (1978) have introduced the equity concept of Pareto efficient egalitarian equivalent allocation (PEEEA), which is a generalization of fairness. An allocation is PEEEA if there is some <u>one</u> bundle of goods which would give <u>every</u> agent the same utility level he has in the actual allocation. This appears to capture the notion of egalitarianism, but it does not. In fact, fair allocations, when they exist, are also PEEEA. In particular, the Crusoe-Friday allocation of Figure 1 is PEEEA. The defect of PEEEA as a concept of justice is therefore the same as in the fairness concept; it is too sensitive to individual utility specifications to produce a theory which eliminates situations which many of us would view as unjust. To pursue the point of the previous paragraph, the problem with the hypothetical egalitarian bundle which agents "receive" in the PEEEA allocation is that they must <u>keep</u> it; they cannot trade from it. If all agents were given the same bundle and then trading were allowed, we would be in a equal-division-core situation (although the hypothetical egalitarian bundle of a PEEEA allocation is not an equal-division bundle, since it is in general not a feasible allocation for the economy).

Nevertheless, if we pursue the fairness concept in large economies, it becomes equivalent to some of the exploitation concepts in our taxonomy. Varian defines a generalization of fairness as <u>coalition-fairness</u>; an allocation is coalition-fair if no coalition envies the bundles which another coalition of similar size has received. (In the original fairness definition, the only admissable coalitions were ones with one member.) It is then proved (Varian [1974], Theorem 4.2) that in large economies, coalition-fair allocations are in the equal-division core. Hence, the

perversities of the scotch-water example are not possible with a continuum

of agents, and coalition-fairness becomes the same as the absence of

capitalist exploitation, in a pure exchange economy.[5]

In dealing with <u>production economies</u>, Varian introduces the concept

of wealth-fair allocations and Panzer and Schmeidler (1974) introduce

income-fair allocations. I think that for large economies, wealth-fair

allocations become equivalent to allocations in which capitalist exploita-

tion is absent, and income-fair allocations are those in which socialist-

exploitation is absent. Or, instead of passing to infinite economies,

if one assumes all agents have the same preference orderings for goods

and leisure, but may have different abilities (or different capacities

for work), then the same result holds.

Hence I would argue that if the pathologies accompanying bizarre

tastes are disallowed, which can be done either by assuming all agents

have the same tastes or by considering a continuum of agents, then the

various fairness notions are encompassed by our taxonomy; and if bizarre

preference orderings are not disallowed, then I think the fairness notions

do not capture any reasonable concept of justice.


8.  <u>Taxonomy or Theory?  Historical Materialism II</u>

Until this point, we have argued the hierarchy of exploitation

is a taxonomy, not a theory. For the taxonomy to become a theory, some

mechanism would have to be displayed which could explain <u>why</u> feudal,

capitalist, and socialist varieties of exploitation should be adopted

as appropriate concepts of justice, at various points in historical

development. In this section, it is proposed that by invoking the theory

of historical materialism, the taxonomy can graduate to the status of

theory. The taxonomy, as an analytical device, should be valid and useful regardless of whether the more powerful claim is accepted that it provides a theory of justice, as corollary to a historical materialist approach.

By the various choice of adjectives in the taxonomy of exploitation, it is clear that according to the theory we shall propose, the conception of justice will not be universal but historically contingent. Under feudalism, what was just will not be just under capitalism or socialism. This at once distinguishes this theory from liberal theories of justice, which claim to abstract from history and propose universal criteria for justice. Universality is clearly a claim of the theories which have been discussed in Section 7; moreover, it is true also of Nozick's (1974) theory, despite the dynamic nature of that theory, as we shall remark upon below.

We must distinguish again between inequality and exploitation, and remark that according to the taxonomy, the criteria change for deciding which types of inequality are exploitative. What determines which types of inequality are just and which are exploitative in a given historical period? Our theory of justice is simply this: all inequality is unjust except those forms which are socially necessary during a given period. This is a historical materialist theory, because it recognizes the necessity of certain social institutions in prescribing a notion of ethics, and because it follows from the historical materialist conception that a given mode of production lasts so long as its social relations do not fetter the development of the productive forces. We reproduce here the oft-quoted locus classicus on this question:

> The mode of production of material life conditions
> the social, political and intellectual life process
> in general. It is not the consciousness of men
> that determines their being, but, on the contrary,
> their social being that determines their conscious-
> ness. At a certain stage of their development, the
> material productive forces of society come in con-
> flict with the existing relations of production, or
> --what is but a legal expression for the same thing
> --with the property relations within which they have
> been at work hitherto. From forms of development of
> the productive forces these relations turn into their
> fetters. Then begins an epoch of social revolution.
> (Marx [1978a, p. 5]).

How does this generate a theory of justice? In a given mode of production, when the social organization, superstructure, social relations, etc., are progressive then the prevailing morality should treat the social relations as non-exploitative or just. So long as feudal relations are progressive and contributing to social welfare, feudal allocations are just. How can one measure the progressiveness of feudal organization? Precisely by the withdrawal criterion. Is there a coalition which could do better for its members by extricating itself from feudal relations only? If so, then feudal relations are acting as a fetter; if not, then the feudal allocation is non-exploitative, because people have no superior alternative. When feudal relations come to be a fetter, there emerge coalitions which are feudally exploited in the technical sense. Eventually (according to historical materialism) society trans-forms itself and overthrows the feudal fetters, introducing capitalism. There can no longer be feudal exploitation; we then ask whether the next level of inequality, that due to capitalist relations in alienable prop-erty, is exploitative. Again, the criterion may be applied: so long as capitalist property relations are necessary and therefore progressive, capitalist exploitation does not exist. In early capitalism, coalitions

of proletarians would not have been better off to withdraw with their
_per_ _capita_ share of alienable property, because capitalists performed
a progressive function of developing the means of production. (This
can be viewed as the period when competition and innovation transformed
labor productivity much more rapidly than a utopian-socialist community
of workers would have.) Many bourgeois theorists today argue capitalism
is still in that stage, as we have discussed above; Marx argued the pro-
gressivity of capitalism in its early period. Thus, although inequality
due to property ownership was extreme, that inequality was socially
necessary, in the sense that historical development had not made the
socialist alternative viable. It is, again, when capitalist relations
act as fetters on the further development of the productive forces, and
hence, potential social welfare, that the inequality of property owner-
ship gives rise to capitalist exploitation: for by exempting themselves
from such relations, large coalitions of proletarians have a better alter-
native.

We come next to socialism, and argue as above. So long as inequality
in property rights of intangible assets is socially necessary, then
socialist exploitation does not exist. A less abstract corollary of
this sounds more familiar: material incentives (for scarce skills) are
necessary in developing socialism, for the alternative at this stage
is the collapse of socialism and the reversion to capitalism. This is
precisely what is recognized by the old standard, "...work according to
ability and be paid according to work" as the socialist recipe. Under
socialism, society (human nature?) has not reached the stage where skills
will be developed and offered, unless they are appropriately compensated.
_If_ the point comes when society can continue developing in the absence

of such differential remuneration to scarce skills, because, for instance,
people will voluntarily offer those skills without such remuneration,
then such inequality will produce socialist exploitation; coalitions
will be able to do better by exempting themselves from socialist remuner-
ation, and withdrawing to form communist society. During this historical
period, according to historical materialism, the communist revolution
removes the fetters of socialist practice. Concerning feudal exploita-
tion and capitalist exploitation which may exist under socialism, as
discussed in Section 6, the same criterion may be applied. If, in fact,
the inequalities due to status are socially necessary, then such inequality
will not result in feudal exploitation (under socialism). How might this
be so? Perhaps the abolition of status-inequality implies the abolition
of hierarchical organization, which implies the re-introduction of the
market, which implies the regeneration of capitalism. One might plausibly
argue that inequalities of status are therefore necessary for the further
development of social welfare. If, however, the re-introduction of the
market does not imply the regeneration of capitalism, then this argument
fails, and one would argue that coalitions could exempt themselves from
status-inequality, introduce a market when they withdraw, and operate
a market-socialist sub-economy in which everyone is better off. Status-
inequality becomes feudal exploitation. Hence the verdict on status-
inequality as a form of exploitation under socialism depends on the
viability of the market-socialist alternative.

The notion of necessity in the historically contingent norms for
justice, can be seen in Marx's phrase: "Therefore, mankind always sets
itself only such tasks as it can solve; since, looking at the matter
more closely, it will always be found that the task itself arises only

when the material conditions for its solution already exist or are at
least in the process of formation" (Marx [1978a, p. 5]). It would be
utopian to set ethical standards which are impossible to achieve in a
given historical period. When Marx discusses in the Critique of Gotha
Program how remuneration of workers will differ according to their skill
in the early phase of communist society, he concludes "Right can never
be higher than the economic structure of society and its cultural develop-
ment conditional thereby" (Marx [1978b, p. 531]).

While this discussion perhaps explains why certain inequalities
are not considered exploitative during a given historical period, it
does not explain why society should tend to a notion of justice which
demands complete equality of individuals. I am not sure, however, whether
one must explain this: or, to put it differently, it is perhaps sufficient
to observe that history has been moving towards that end. Some people
read the historical materialist position teleologically: so long as
inequality exists, revolutions in social organization (and social morality)
will continue. (I do not think this is included in the Marxist position
that all history is the history of class struggle. It is, rather, a
converse to that statement, of the form "If there are classes (or dif-
ferential remuneration), then there will be struggle." The original
Marxian statement is really, "If there is struggle, it must be caused
by class antagonism.")

Thus, we do not attempt to justify the historical materialist
theory of justice by appeal to any moral or ethical position. We say,
rather, that historical tendencies are sufficient to define justice:
those forms of inequality are exploitative which society is capable of
eliminating. The conception of justice evolves as does man's capabilities

for social organization. We take increasing equality as the central

theme because that is what history has done. This central theme can,

in addition, either be justified teleologically, or its inevitability

can be induced by the ubiquity and persistence of class struggle, so

long as classes exist.

A remark on the ahistoricity of Nozick's theory of justice, despite

its dynamism, is in order. According to Nozick, one can evaluate the

justness of a distribution by knowing the initial state, many years ago,

and the path which led from there to the distribution in question, in

the present. The ahistoricity of this proposal is manifest in its claim

that certain universal criteria can be applied to evaluate the justness

of an allocation. While the dynamic aspect of this theory is appealing,

one would have to modify it in this significant way according to the his-

torical materialist conception: the very standards by which one judges

initial positions and paths must change as history progresses. For instance,

during the capitalist period, certain exchanges will be legitimate, such

as those which occur on the labor market, while during socialism, one

would judge such exchanges as illegitimate, hence destroying the justness

of an otherwise untainted path. Although a meta-theory could be proposed

à la Nozick, incorporating the possibility of such variable criteria,

our point is simply that Nozick's theory as it stands purports to offer

universal criteria for the problem of justice; it is not a theory of the

historically contingent variety, and as such, it is quite likely that it

embodies the prevailing morality of the day, as theories claiming univer-

sality tend to do. Universal man appears usually as the man with whom

we are familiar.

## 9. Perspectives on Socialist Society

Since the initial motivation for this study was to gain a mater-
ialist understanding of contemporary socialist society, it is appropriate
to devote final remarks to this issue.

Perhaps the most important result of the analysis is the decom-
position of inequality it directs us to investigate, (1) feudal,
(2) capitalist, and (3) socialist exploitation. It is certainly true
that there are inequalities in socialist society due to (1) differential
status, (2) differential access or control over the alienable means of
production, and (3) differential endowments of inalienable assets. We
are led to ask if coalitions can improve the welfare of their members,
under appropriate hypothetical specifications of withdrawal rules, by
exempting themselves from (1) relations of status, (2) relations of state
control over the means of production, and (3) property relations in in-
alienable assets. Carrying out such a test is, of course, tricky:
that is where political disagreements between defenders and opponents
of the regime in question will arise. In Section 8, we have shown that
the ability of a coalition to improve its lot under rules of the game
which permit its members to exempt themselves from a certain type of
property relation is equivalent to that property relation being socially
unnecessary, at that stage of social development. (In Marx's terminology,
in such a case that property relation is a fetter on social development.)
In the game-theoretic language we have employed, the principal problem
in the empirical testing for the existence of, say, exploitation of status
will be defining the game, that is, specifying what the pay-off to each
coalition acting on its own and exempting itself from status inequalities
would be. It is at this juncture that concrete detail and knowledge

of the society in question become important.

The approach suggests a different political perspective on the problems of developing socialism than has been prevalent among Marxists. Much Marxist thought, which has been critical of the evolution of socialism, has attributed the pattern of development to errors that were made--by Lenin or Stalin or Mao. If the communist parties these figures led had better understood Marxism, these errors could have been rectified. Our approach suggests this is a utopian position. One should expect certain inequalities to persist under socialism. The historic task of socialism is to eliminate capitalist exploitation only. Perhaps Marxists have had too imprecise a vision of what forms of inequality remain after the inequality due to differential ownership of alienable assets is ended. Many Marxists have fallen, perhaps, into the error of believing that all inequality should be eliminated with the passing of capitalism. This penchant to idealize socialism is in part due to the absence of a materialist discussion of socialism by Marx and Engels, a discussion in which they did not engage, for their task was to display the revolutionary possibilities from capitalism, not to lay out the plan for the new society. (Indeed, it would have been distinctly un-Marxian for Marx to give instructions concerning a phenomenon with which he had no familiarity.) Unfortunately, many Marxists have receded to an idealist analysis of socialism, failing to recognize the progressive aspects of contemporary socialist experiments, and failing to deal with the surprises in a materialist way.

Clearly the present theory or taxonomy of exploitation does not provide a complete answer to the riddle of socialist development. There is a bifurcated path indicated, at this point, as a research program from this analysis. One branch of the path might pursue a systematic

empirical study of the decomposition of inequality in socialist society. The other branch might develop the theoretical implications of the analysis of inequality under socialism for the formation of classes under socialism, and a consequent political theory of socialism, as indicated in the introductory section of the paper. Can we say that a class formation emerges as a consequence of socialist inequality, or simply strata? What is the appropriate generalization of the concept of class to socialist society? (For a formal model of class formation in pre-capitalist and capitalist societies, and the relation of class to exploitation, see the first two papers in this series.) If a meaningful class phenomenon exists, is there a corollary politics of socialist states, which can explain what we see in the world today?

This is a program suggested by the hypothesis that an historical materialist analysis can explain the historical development of socialism. It is convenient to think of Marxism as the application of the historical materialist hypothesis to nineteenth century capitalism. The methodological error of much twentieth century work in the Marxian tradition has been to try and explain late twentieth century society (both socialist and capitalist) by an application of Marxism. Metaphorically, this is akin to constructing epicycles on a theory, so that it may perform work for which it was not intended. With such an approach, one does not explain very much, and is continually surprised by new developments. An appropriate methodology for those of us impressed with the power of Marxism to explain the capitalism of the nineteenth century, and to provide the foundations for socialist revolution, is not to modify it with epicycles, but to apply the underlying principles (which are those of historical materialism) to formulate a new variant whose terms (class, exploitation, state) apply

specifically to modern societies.

At an even deeper, more dispassionate level, one might call into question the hypothesis of historical materialism. But by the principal of Occam's razor, it is not necessary to take this step until the possibilities for an application of historical materialism to late twentieth century conditions have been pursued, and found insufficiently powerful for explaining what we see. At this stage in the development of a historical materialist analysis of modern socialism, it is too early to reach a verdict on this central question.

Appendix:   A Model of Socialist Exploitation

We present a model to show the idea of socialist exploitation,
making several heroic assumptions for the sake of simplicity.  First,
we assume we are in a "socialist subsistence" economy.  The producers
wish to minimize labor time expended subject to producing some common
subsistence vector  b .  We do this in order to show the relationship
between socialist exploitation, capitalist exploitation, and Marxian
exploitation.  To discuss Marxian exploitation, readers of Roemer (1979,
1980) will know the added simplicity which is achieved by the subsistence
assumption.  This assumption could be dropped, but only at the cost of
a more complicated definition of Marxian exploitation, as in Roemer
(1980).  As our purpose here is to outline an example, the subsistence
simplifying assumption is justified.

We assume there is a single indecomposable, productive Leontief
technology  $(A,L)$ , with  $L > 0$ , and  n  sectors, but that each pro-
ducer has access to only some subset of the  n  processes.  Producer
$\nu$  has knowledge of sectors indexed by integers in the set  $S^{\nu} \subseteq \{1, \ldots, n\}$ .
This models the idea that producers have different skills.  Note, however,
that each producer possesses some socially necessary skill, since the
economy is indecomposable.  A more general model might posit a von Neumann
technology with many processes, and some producers would have knowledge
of only inferior processes.  Such a model would necessitate a more com-
plicated definition of socially necessary labor time, and hence we avoid
it, although it too can be developed to illustrate our points.

Let, then,  $(A^{\nu}, L^{\nu})$  indicate the set of processes of  $(A,L)$
of which producer  $\nu$  has knowledge.  $A^{\nu}$  is an  $n \times n$  matrix which has
a column of zeros for each process  $j \notin S^{\nu}$  which  $\nu$  cannot operate,

Similarly $L^\nu$ is a n-row vector which has some of its components the same as the components of $L$, and the other components are zeros. We model the socialist nature of the economy by remarking that there is no "wealth constraint," as in the producer's optimization program in capitalist and pre-capitalist economy. Any inputs he needs are instantly available from the center. It is perhaps more convenient to think of producer $\nu$ as a socialist collective, a worker-managed firm, which has access to the produced means of production. Collectives differ according to their technological know-how.

The subsistence requirement for each producer (collective) is the vector $b$. As in the previous models, each producer seeks to minimize labor time expended subject to being able to pay for the inputs he procured from the center. His program is:

$$\text{choose} \quad x^\nu \in R^n_+ \quad \text{to} \quad \min L^\nu x^\nu$$

$$\text{subject to} \quad px^\nu - pA^\nu x^\nu \geq pb$$

$$L^\nu x^\nu \leq 1$$

$$x^\nu_j = 0 \quad \text{for} \quad j \notin S^\nu .$$

The purchases of inputs are $pA^\nu x^\nu$ and $pb$ is the value of subsistence, so the constraint expresses the fact that the value of gross product is sufficient to pay these two costs. Let $\Omega^\nu(p)$ be the set of solutions to $\nu$'s program.

Definition. A price vector $p$ and activities $x^1, \ldots, x^N$ constitute a reproducible solution for the socialist subsistence economy with $N$ producers if:

(1)  $x^\nu \in \Omega^\nu(p)$ , for all $\nu$

(2)  $x = \sum x^\nu$  and  $(I-A)x \geq Nb$ .

A reproducible solution allows each producer to optimize, and social net output is sufficient to feed everyone. That is, what inputs are used up  $(Ax)$  are replaced.

As in the other models of this genre in the previous papers of this series, it follows that:

Proposition A1. At a reproducible solution aggregate work time is:

$$Lx = NL(I-A)^{-1}b \equiv N\Lambda b$$

where  $\Lambda = L(I-A)^{-1}$ .

Proof. At a RS,  $(I-A)x \geq Nb$  and so  $x \geq N(I-A)^{-1}b$ , implying  $x > 0$  since  $A$  is indecomposable so  $(I-A)^{-1} > 0$ . This implies  $p \geq pA$ : for a sector  $j$  with  $p_j - pA_j < 0$  would never operate (examine the producer's program). But  $p \geq pA$  implies  $p > 0$  by indecomposability of  $A$ , and the fact that  $A$  is a productive matrix.

At an individual optimum,  $x^\nu \in \Omega^\nu(p)$ , it is clear from the program each producer sets

$$p(I - A^\nu)x^\nu = pb ;$$

for if  $p(I - A^\nu)x^\nu > pb$  then  $\nu$  could reduce his labor time further since  $L > 0$ . Hence summing these equality constraints over all  $\nu$  gives:

(a)  $\qquad p(I-A)x = Npb$ .

However $(I-A)x \geq Nb$ by reproducibility; it follows from (a), and because $p > 0$, that $(I-A)x = Nb$. The result follows.

Q.E.D.

We identify $\Lambda b$ as socially necessary labor time, for reasons with which the reader is familiar. Proposition A1 thus informs us that at a RS, society as a whole works socially necessary labor time.

However, it is possible that some producers work longer than $\Lambda b$ and some less than $\Lambda b$. (Again, a full investigation of a related phenomenon is in Roemer (1979).) Such inegalitarian reproducible solutions virtually always exist. If

(b)    $Lx^{\nu} > \Lambda b > Lx^{\mu}$

a Marxist might be tempted to say $\nu$ is exploited and $\mu$ is an exploiter. Note that such inegalitarianism is an explicitly social phenomenon, in this sense. Suppose $\mu$ has knowledge of the whole matrix $(A,L)$, but $\nu$ has knowledge only of certain columns, and they are the only two producers in the economy. Then inequality (b) may very well be the case at a reproducible solution. (In particular, $\mu$ can never work longer than $\nu$ at a RS.) Now suppose $\nu$ leaves the economy. Without $\nu$, $\mu$ can reproduce himself, but he must work $\Lambda b$ time to fulfill $(I-A)x \geq b$ (note $N = 1$, now). Hence $\mu$ becomes worse off with $\nu$'s departure. Thus $\mu$ is better off because of $\nu$'s presence; one might argue surplus value is being transferred from $\nu$ to $\mu$ through the exchange mechanism, and be tempted to call such expropriation of surplus value, exploitation.

Note that according to our taxonomic device, this inegalitarianism is not capitalist exploitation. Indeed, if $\nu$ withdraws in a coalition

of one, taking with him his _per capita_ share of society's alienable assets he cannot improve his position. (This is clear, since alienable assets are available in unlimited amount from the center in this economy.) In fact, he cannot even reproduce himself on his own, as he does not have knowledge of the whole technology.

However, this inequality is socialist exploitation. How do we formulate the withdrawal rule for a coalition to test for socialist exploitation? We allow the coalition to take with it its _per capita_ share of society's intangible assets. Precisely, each member of the withdrawing coalition is assigned the "technology" $(\frac{1}{N}\sum_{\nu}A^{\nu}, \frac{1}{N}\sum L^{\nu})$ . This means he can operate each producer's talents for $1/N$ of the day. Under this average or composite technology, we easily show:

Proposition A2. Let $(p, x^1, \ldots, x^N)$ be a RS. Then $\mu$ is socialistically exploited if and only if $Lx^{\mu} > \Lambda b$ .

Proof. Let $Lx^{\mu} > \Lambda b$ . At the RS, $(I-A)x = Nb$ , so $\frac{1}{N}(I-A)x = b$ . But this means that $\mu$ can produce for himself the net output vector $b$ with the composite technology which he has been assigned, as he has precisely the capabilities of $1/N$ of society in the aggregate. Thus he operates activity levels $\frac{1}{N}\sum x^{\nu}$ and reproduces himself, working time $L(\frac{1}{N}x) = \Lambda b$ , thus improving his situation.

The converse is immediate.

Q.E.D.

In fact, it is just as straightforward to prove a slightly more general proposition, which states that a coalition $J$ of producers is socialistically exploited if and only if

$$\sum_{\nu \varepsilon J} Lx^{\nu} > (\#J)\Lambda b \ .$$

Similarly, a coalition  J  is socialistically exploiting if and only if

$$\sum_{J} Lx^{\nu} < (\#J)\Lambda b \ .$$

FOOTNOTES

1.  This is actually a gross simplification, adopted for our purposes.
    In fact, the relations of property in land under feudalism were ex-
    tremely vague by capitalist standards (see, for instance, Cohen and
    Weitzman (1975)). What is important for our argument is that lords
    did not own the serfs' plots or the commons.

2.  Some may notice that according to this definition, a coalition and
    its complementary coalition could, in principle, both be exploited.
    Suppose the economy involves production with increasing returns to
    scale. Then it is possible that a coalition and its complement are
    both hurt by withdrawal, since by themselves they cannot "exploit"
    the scale returns of the economy. This would seem to be a defect
    of the definition, since we would like the complement of an exploited
    coalition to be an exploiting one. Nevertheless, in the models dis-
    cussed in this paper, this is not a problem. We require
    always an appropriate form of constant returns for the game-theoretic
    approach to produce the results that the complement to an exploited
    coalition is an exploiting one.

3.  After serfs withdraw from bondage, they become, among other things,
    proletarians. Must we therefore ask to verify the claim: are pro-
    letarians better off than serfs? This clearly becomes a complicated
    problem of comparative statics, and also of dynamics. (If all the
    serfs had withdrawn at once, would they have been better off in the
    ensuing chaos?) To avoid these problems, we insist upon interpreting
    the feudal economy as a game, in which withdrawal is modeled by per-

mitting agents access to the same production technologies, etc., after they have withdrawn, which they had knowledge of before. That is, the usual conventions for the treatment of the opportunities open to blocking coalitions apply. However, a parallel issue is treated more seriously in Section 8.

4. The next few paragraphs will not be intelligible to readers unfamiliar with the models of Roemer (1979, 1980).

5. The perverse scotch-water examples disappear with a continuum of agents because preferences of agents vary continuously across agents. The scotch-water pathology is generated by creating two extremely different preference orderings, with no intermediating agents to smooth in the preference map in between.

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