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Comments on John Roemer's first welfare theorem of market socialism*

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ABSTRACT
In this comment on John Roemer's "theory of cooperation with an application to market socialism", I extend Roemer's first welfare theorem of market socialism in two directions. First, I prove a version of the theorem that deals with non-linear taxation. Second, I offer a connection between the theorem and welfare equality. I then argue that the models and questions that Roemer contribute to bring to welfare economics raise questions that go much beyond the research on socialist ethics. In particular, I introduce a positive model of moral behavior that yields different predictions from Roemer's Kantian model. I conclude that individual morality should become a central concern of welfare economists.

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1. Introduction

In recent contributions (see Roemer 2015, 2017a, 2017b, 2019), John E. Roemer proposed a new version of the socialist ideal, that combines an objective of distributive justice based on equality with a behavioral principle of Kantian optimization. This principle states that agents, when identifying the actions that maximize their welfare, consider the effect of their choices on their outcomes by assuming that all agents in society will choose a similar action, the precise definition of which depends on the context in which the choice takes place.

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In support to the claim that socialism could be achieved under the combination of these two ingredients, Roemer proves a first welfare theorem of market socialism. This theorem states that if agents are Kantian maximizers in a general private and public property economy with linear capital and labor income taxation, any degree of income equality can be achieved at no efficiency cost.

This series of works is remarkable in several aspects. First, it contributes to introducing the morality of individual agents into the research agenda of welfare economics. Second, it proposes a model of moral behavior that does not add any argument to individual utility functions but that does have to do with the way moral agents consider the actions of others when determining their optimal action. Third, it redirects the research on socialism from the institutional design problem to the behavioral model, suggesting that socialist institutions, by succeeding in limiting (income) inequalities, could be more efficient than capitalist institutions in helping agents develop their innate desire and ability to cooperate with fellow citizens and produce socially desirable outcomes in a decentralized way.

In this article, I extend Roemer's first welfare theorem of market socialism in two directions. First, I show that Roemer's focus on linear income taxation is a non-necessary one, in the sense that there exists a more general Kantian ethos that guarantees that non-linear income taxation does not distort labor supply and does not impede Pareto efficiency. Second, I show that this generalization to non-linear taxation allows us to connect the outcome of Kantian optimization to the objective of equality in welfare, as opposed to equality in income. Indeed, if agents are Kantian optimizers in the general sense, there exists a tax scheme that implements the allocation in which all agents reach the same satisfaction level in the hypothetical case in which they all have the same preferences but possibly different skills.

This article allows me to show that relevant normative economic questions can be raised outside the realm of the research on socialism. Indeed, I do believe that individual morality should be brought into all branches of normative economics. I exemplify this belief below, first by providing another model of moral behavior that differs from Kantian optimization. I argue that this model has some positive value. Second, I raise questions that have no relationship to the design of socialist institutions. Third, like Roemer's, the questions that I review have both a positive and a normative content.

2. A generalization of the first welfare theorem of market socialism

In this section, I recall John Roemer's first theorem of market socialism/social democracy. These institutional devices are characterized by a uniform tax rate on all incomes. The theorem proves that under these institutions, any equilibrium at any tax rate $t \in [0,1]$ is Pareto efficient. Then I show that the theorem can be generalized to non-linear taxation, provided the notion of a Walras-Kant equilibrium is adjusted.

Compared with the original model, I assume away capital and the state. It is purely to save on notation. These two ingredients can easily be thrown back into the model at no substantial cost, as they do not play any role in the derivation of the result.

There is a technology transforming labor input into the production of a consumption good. It is described by a strictly increasing, concave and differentiable production function $G : \mathbb{R}_+ \to \mathbb{R}_+$. There is a set N of agents. Each agent contributes an amount $\ell_i \geq 0$ of labor, measured in efficiency unit, and consumes an amount c_i of good, $i \in N$. The aggregate feasibility constraint reads

$$\sum_{i \in N} c_i \leq G\left(\sum_{i \in N} \ell_i\right).$$

The institutions of this economy are as follows. Each agent $i \in N$ has property rights on the firm denoted by θ_i, with $\sum_{i \in N} \theta_i = 1$. The firm maximizes profit. Labor times and goods are exchanged on a competitive market. We normalize the price of the consumption good to 1 and we let w denote the market wage rate. All incomes, profits and wages, are taxed at a rate of $t \in [0,1]$. Total tax return is redistributed equally to all agents. This basic income is called the demogrant.

Agent i maximizes utility under the following budget constraint:

$$c_i \leq (1-t)\left(w\ell_i + \theta_i\left(G\left(\sum_{j \in N} \ell_j\right) - w\left(\sum_{j \in N} \ell_j\right)\right)\right) + \frac{1}{n}\left(tG\left(\sum_{j \in N} \ell_j\right)\right).$$

Real income of an agent is composed of three parts. The first two parts are taxed at a rate of t, and they are the agent's labor income and the agent's share of profit. The third part is the demogrant. Taking G, t, and the θ's as exogenous, we can summarize the budget constraint of an agent as $c_i(\ell_j; j \in N)$, that is, an agent's consumption depends on the profile of labor contributions of all agents.

When choosing her labor time so as to maximize utility, an agent makes assumption on how the other agents will react to their own change in labor time. Under the classical Nash or competitive behavior model, each agent maximizes her utility assuming the labor time of others is fixed. This is captured by the equilibrium condition

$$\frac{\partial c_i}{\partial \ell_i} = (1-t)w,$$

with the resulting distortion in labor supply, as Pareto efficiency requires $\frac{\partial c_i}{\partial \ell_i} = w$.

Under additive Kantian behavior, each agent considers the effect of a change in her labor time on her consumption, under the assumption that all agents modify their labor time by the same amount. The effect on consumption is then

$$\frac{\partial}{\partial \rho} c_i(\ell_j + \rho; j \in N)$$

computed at $\rho = 0$. The effect on the agent's consumption becomes

$$(1-t)w + (1-t)\theta_i n\left(G'\left(\sum_{j\in N} \ell_j\right) - w\right) + \frac{t}{n} nG'\left(\sum_{j\in N} \ell_j\right).$$

Profit maximization implies that $G'(\sum_{j\in N} \ell_j) = w$. The derivative then becomes $(1-t)w + \frac{t}{n}nw = w$. That is, the condition for Pareto efficiency is recovered.

As this result does not depend on the value of t, it means that society can achieve any degree of income equality with no sacrifice in efficiency. Note that the assumption that profits and labor income are all taxed at the same rate is imposed for convenience only. It is transparent, because of the equality $G' = w$, that profits could be taxed at a different rate (as it will be the case below) without any impact on the result.

Let us now show that it can be generalized to non-linear taxation, provided the notion of a Walras-Kant equilibrium is adjusted. We assume that the profit of the firm is taxed at a rate of t_0. Then, there is a tax scheme $t : \mathbb{R}_+ \to \mathbb{R}$ so that agent i's after-tax labor income is equal to $w\ell_i - t(w\ell_i)$. An agent's budget is now described as follows.

$$c_i \le w\ell_i - t(w\ell_i) + (1-t_0)\theta_i \Pi\left(\sum_{j\in N} \ell_j\right) + \frac{1}{n}\left(t_0 \Pi\left(\sum_{j\in N} \ell_j\right) + \sum_{j\in N} t(w\ell_j)\right),$$

where Π stands for the profit function, that is, $\Pi(\ell) = G(\ell) - w\ell$.

Let t_i stand for the marginal tax rate faced by agent $i \in N$. The cooperation ethos we now assume is defined as follows. When considering to change her labor time, an agent now assumes that all other agents will change their own labor time, in such a way that the effect on the collected tax is the same. If two agents, say 1 and 2, are taxed at different rates, say $t_1 = 0.2$ and $t_2 = 0.4$, then agent 1 considers the effect of a change of, say, 1 h in her labor time accompanied by a change of half an hour in the labor time of agent 2, because the effect on the taxes of these two labor time changes is the same. Formally, agent i evaluates

$$\frac{\partial}{\partial \rho} c_i\left(\ell_j + \frac{t_i}{t_j}\rho; j \in N\right)$$

computed at $\rho = 0$, assuming no agent is taxed at $t_j = 0$. In words, when an agent considers changing her labor time, she also considers the effect of her change on the total collected taxes, and the cooperative ethos is now that she assumes all other agents to do the same, with the consequence that an equivalent change in another agent's labor time is one that has the same impact on the collected taxes.

The effect on the agent's consumption is now equal to

$$(1-t_i)w + (1-t_0)\theta_i\left(\sum_{j\in N}\frac{t_i}{t_j}\Pi'\left(\sum_{j\in N}\ell_j\right)\right) + \frac{1}{n}\left(t_0\sum_{j\in N}\frac{t_i}{t_j}\Pi'\left(\sum_{j\in N}\ell_j\right) + \sum_{j\in N}t_j\frac{t_i}{t_j}w\right).$$

Again, profit maximization implies that $\Pi' = 0$. The derivative then boils down to $(1-t_i)w + \frac{1}{n}(\sum_{j\in N}t_j\frac{t_i}{t_j}w) = (1-t_i)w + \frac{1}{n}(nt_iw) = w$.

It shows that in the case of non-linear taxation as well, provided all agents consider that others will (or should) adjust their labor time in such a way that the effect on the collected taxes is identical, society can achieve any degree of income equality with no sacrifice in efficiency.

Of course, in the special case in which $t_i = t$ for all $i \in 1, \ldots, n$, that is in the special case of linear taxation, our notion of Kantian optimization boils down to additive Kantian optimization. This allows us to rephrase additive Kantian optimization in the linear taxation context: each agent considers that the others will also change their labor time in such a way that the effect on the collected tax is the same. This explains why multiplicative Kantian optimization is not the appropriate ethos in this case.

This ethos is thus equivalent to additive Kantian optimization when taxation is linear. When taxation is non-linear, the ethos we consider looses the simplicity of additive (or multiplicative) Kantian optimization. In particular, the information that is required to optimize is considerably larger than with additive Kantian optimization. In the latter case, each agent can compute the effect of an hypothetical change in labor input on consumption by knowing their own labor contribution and the total one. In the case we have studied in this section, the computation requires to know the marginal tax rate faced by all the other agents, which implies to know the earning level of each one of them.

There is an essential qualification to this observation, though. The results proven by Roemer in his works and the one proven above teach agents that none of this information is actually needed. Indeed, the theory shows that all those sophisticated computations amount to $\frac{\partial c_i}{\partial \ell_i} = w$, that is, the relevant effect of one's change in labor contribution should be evaluated as if it were equal to the equilibrium wage. This is at the end the only required information, whether taxation is linear or not.

Of course, this remark assumes that agents know Roemer's or this result. If it is not the case and if agents do have to compute the effect of a change in their labor time on their own consumption, then linear taxation has the advantage of making this computation much simpler. Even in the linear taxation case, however, applying the first welfare theorem of market socialism considerably simplifies the information that needs to be processed.

3. Inequality and the Kantian ethos

The major consequence of Roemer's first welfare theorem of market socialism is that any income inequality can be achieved at no efficiency cost. Extreme inequality is achieved in the absence of any taxation, that is, at the laisser-faire allocation implemented by $t = 0$. Income equality is achieved if all incomes are taxed and equally redistributed, that is if $t = 1$. The claim that any degree of income inequality can be achieved at no efficiency cost then comes as the conjunction of two claims. First, Kantian optimization guarantees that the implemented allocation will be efficient. Second, by making t vary continuously from 0 to 1, one implements allocation that are associated to an inequality index varying between the largest value and 0. One may then wonder why we should look for generalizations of the welfare theorem.

In this section, we question the objective of income equality and we show that non-linear taxation allows us to implement fair allocations that cannot be implemented by linear taxation.

To reach this conclusion, we need to characterize the allocations that are implemented by taxation systems under Kantian ethos. We begin by assuming away profits and property rights. This is equivalent to assuming that the returns to scale of production are constant, a typical assumption in optimal taxation theory. We come back to this assumption at the end of this section, to show that what we say can be generalized to the case of non-constant returns to scale.

In the linear taxation case in which the tax rate on labor income is t, the implemented allocation is a Pareto efficient one is which $c_i = b + (1-t)\ell_i w$, where b is the demogrant. This allocation need not be unique. In the non-linear taxation case in which the tax scheme is described by an increasing tax function $t : \mathbb{R}_+ \to \mathbb{R}$ that includes the demogrant (the value of which is then $-t(0)$) the implemented allocation is a Pareto efficient one is which $c_i = \ell_i w - t(\ell_i w)$. Is there any sense in which one of these allocations is normatively appealing?

Let us consider the allocation that implements income equality. In this allocation, $t = 1$ and $c_i = b$, for all $i \in \{1, \dots, n\}$, that is, all agents consume the same quantity of goods. They typically do not have the same labor time, though. In particular, agents with a larger productivity will work more and, therefore, will reach lower welfare levels than lower productivity agents having the same preferences. This suggests that income equality is not fair.

Moreover, it seems that if all agents have the same preferences but possibly different productivities, welfare equality is a more appealing objective than income equality. Again, let us note that identical preferences and heterogeneous productivity is the frame in which optimal taxation theory has been developed after Mirrlees (1971), and welfare equalization has been one of the major objectives studied in this literature.

Let us then assume that agents are characterized by their productivity, w_i, transforming labor time into efficiency units or pre-tax income, and their preferences over labor time/income bundles, described by a common utility function u, increasing in consumption, decreasing in labor time and quasi-concave. For the sake of simplicity, we further assume 1) that preferences are quasi-linear in consumption, that is

$$u(c,\ell) = c - v(\ell)$$

for some increasing and convex function v satisfying $v(0) = 0$, and 2) that there is a continuum of agents, $w \in [\underline{w}, \bar{w}]$. At a Pareto efficient allocation, the labor time of an agent characterized by productivity w is such that $w = v'(\ell)$, or

$$\ell^*(w) = v'^{-1}(w),$$

where $\ell^*(w)$ denotes the efficient labor time of an agent of productivity w. All agents have the same welfare if the consumption inequality perfectly compensates the labor time inequality. When this is achieved, consumption depends on productivity in the following way

$$c^*(w) = b + v\left(v\prime^{-1}(w)\right),$$

where $c^*(w)$ denotes the consumption of an agent of productivity w at the efficient and welfare equalizing allocation, and b is the consumption level of the agents who do not work, if any. Of course, following the assumption of quasi-linearity, b also stands for the utility level reached by the agents. Denoting pre-tax labor income by y, and remembering that $y = w\ell$, we can characterize the efficient and welfare equalizing pre-tax income as a function of productivity as

$$y^*(w) = wv'^{-1}(w).$$

Given the assumptions on v, v'^{-1} is an increasing function of w, so that y is also an increasing function of w. Using $c = y - t(y)$, we obtain the following definition of the optimal tax function:

$$t^*(y) = wv'^{-1}(w) - b - v\left(v'^{-1}(w)\right),$$

which is also an increasing function of w. A quick look at this formula is sufficient to see that t^* has no reason to be linear: linear taxation is unable to achieve welfare equality, whereas non-linear taxation is.

At the risk of stressing the obvious, I would like to underline that none of these two statements is straightforward. One might have thought, indeed, that linear taxation could have achieved welfare inequality. A linear tax of 100% obviously does not do the job (except if $v(\ell) = 0$ for all $\ell \geq 0$), but a lower uniform tax rate could. It is actually the case if preferences are such that t^* turns out to be linear. This is possible, but only in very particular cases. It is not obvious either that non-linear tax functions exist that achieve welfare equalization *in all cases*, that is for all functions v. Indeed, there are utility functions u that do not allow us to implement the welfare equalizing allocation. When there are income effects, y^* may fail to be increasing in w, and the welfare equalizing allocation cannot be implemented. To sum up, linear taxation only allows us to equalize welfare in special cases, whereas non-linear taxation allows us to reach this result in a vast set of cases, including the cases of the absence of income effects (quasi-linear preferences). Of course, the crucial assumption is Kantian optimization, which implies that taxation has no efficiency cost.

These theoretical results question the status of the behavioral models on which they are grounded. One of Roemer's motivation to study Kantian optimization is the evidence that people make this kind of reasoning when they make decisions: what if everybody behaves like me? In complex situations as the ones we have studied, "behaving like me" is not a straightforward concept. In the additive Kantian optimization model, that means that agents imagine that all other agents would affect their labor supply in such a way that they would all change their earning by the same amount. In the optimization model we have introduced, that means that agents imagine that all other agents would affect their labor supply in such a way that they would all change the collected taxes by the same amount. I have to admit that the former seems to me to be more plausible than the latter. I don't believe, however, that real societies are currently composed of agents with such an ethos. This is of course not what Roemer claims, either. Roemer suggests that a Kantian ethos can exist in a socialist society in which institutions guarantee such a low level of inequality that the natural human propensity to exhibit cooperative behavior will fully develop and become the norm.

I do not claim that the kind of Kantian optimization that I introduced above will prevail in a socialist economy. I interpret the result proven above in the following way. First, it begins to bridge the gap between the two main components of Roemer's proposal of a socialist society, that is the distributional objective of equality of opportunity and the Kantian ethos. Of course, this is quite preliminary and much more needs to be done.

Second, it identifies a normative test that concepts of distributive justice, in this case labor income taxation, can pass or not: does there exist a Kantian ethos that guarantees that economic justice can be obtained at no efficiency cost? A concept of justice for which such an ethos exists should be preferred, along this dimension, to one for which no ethos exists.

Third, the nature of the ethos that has been identified this way, and more precisely its plausibility, can be used to evaluate how far we are likely to be from obtaining justice at no efficiency cost. The closer the desired ethos is to how actual people behave the better.

Fourth, this result can be interpreted in the perspective of endogenizing moral behavior. In case there are ways to shape agents' moral thinking, then identifying which reasoning leads to the implementation of the desired concept of justice at no efficiency cost, as we do here, can be useful to define what the desired ethos a society should follow.

Before we close this section, we need to throw profits and property rights back into the model. It turns out to be an easy task. If welfare equality is the objective, under Kantian optimization, profits need to be taxed at 100%. Indeed, as proven in the previous section profit maximization implies that a marginal change in labor supply has no effect on profits, so that how much profits are taxed has no influence on equilibrium labor times. We can mention another way of reaching welfare equality, though. Instead of taxing profits at 100%, indeed, one can simply redistribute them such that $\theta_i = \frac{1}{n}$, and not tax them at all. Under Kantian optimization, both institutions lead to the same outcome.

4. Beyond Kantian optimization

A remarkable feature of the models of Kantian optimization, whether it is additive, multiplicative, or a more elaborate model of optimization, is that preferences of the agents remain the same as in the standard competitive or Nash model in which agents take the actions of the others as given. One appealing consequence is that welfare analysis can be performed exactly like in the standard models.

The Kantian model seems to suggest that moral agents remain selfish in their goals but refrain from selfishly taking advantage of the real opportunities resulting from the actions of other agents. They only take the advantages that all agents could take at the same time. There is no doubt that some moral people reason this way. It is quite likely, too, that other models of morality are relevant.

I think, in particular, that some moral behavior is better described by the assumption that moral agents maximize an anonymous social welfare function, in line with Harsanyi's notion of morality (see, among many others, Harsanyi 1955, 1977). The following formal example seems to me to adequately describe real situations. Assume n individuals have (full) incomes y. They have to contribute C to a charity, collecting funds or time for the very needy.

More formally, the game form can be described as follows: n agents have to choose a contribution level $c_i \in [0, C], i \in \{1, \ldots, n\}$, and one agent, agent $n+1$, does not choose any action but receives $\min\{\sum_{i=1}^{n} c_i, C\}$. For a profile of contributions $(c_i)_{i\in\{1,\ldots,n\}}$, the outcome is the $n+1$-dimensional vector

$$\left(y - c_1, \ldots, y - c_n, \min\left\{ \sum_{i=1}^{n} c_i, C \right\} \right).$$

Payoffs functions are

$$u_j\left((c_i)_{i\in\{1,\ldots,n\}} \right) = y - c_j + \alpha \min\left\{ \sum_{i=1}^{n} c_i, C \right\}$$

for all $j \in \{1, \ldots, n\}$, with $\frac{1}{n} < \alpha < 1$, and $u_{n+1}((c_i)_{i\in\{1,\ldots,n\}}) = \min\{\sum_{i=1}^{n} c_i, C\}$.

Kantian optimizers will contribute $\frac{C}{n}$, because of the condition $\frac{1}{n} < \alpha$ makes it profitable to contribute. Indeed, the categorical imperative stipulates that moral agents should follow maxims that they would like to become universal law.

In case all agents are Kantian optimizers, the charity is able to reach its goal. Now, I don't believe all agents are Kantian maximizers, and it is clear that there is evidence that at least some charities are able to fill their objectives in terms of help (in time or money) to the needy. How can we describe the decision of agents that lead to the charity collecting C?

Nash optimizers contribute $c_i = 0$, because of the condition $\alpha < 1$. If only $n_k < n$ agents are Kantian optimizers, then there is no reason for them to change their behavior, because the universal law is that everyone contributes $\frac{C}{n}$ and not that moral agents contribute $\frac{C}{n_k}$. Therefore, the charity will collect $\frac{n_k}{n} C$. That is, Kantian optimizers have no reason to contribute more than what the charity would need, should *all* agents contribute the same.[1]

Now, consider a society in which $n_e < n$ agents are egalitarian, in the sense that they behave as maximizers of a maximin social welfare function. Their payoffs function are now

$$u_j\left((c_i)_{i\in\{1,\ldots,n\}} \right) = \min\left\{ \min_{j\in\{1,\ldots,n\}} \{y - c_j\}, \min\left\{ \sum_{i=1}^{n} c_i, C \right\} \right\}.$$

Then, each egalitarian agent $j \in \{1, \ldots, n\}$ will best-response to the others by increasing her own contribution c_j as long as she does not become worse-off than the charity, $y - c_j \geq \min\{\sum_{i=1}^{n} c_i, C\}$ and the charity remains the worst-off agent,

$$\min\left\{ \min_{k\neq j} \{y - c_k\} \geq \min\left\{ \sum_{i=1}^{n} c_i, C \right\} \right\}.$$

There are several equilibria,[2] characterized by $\sum_{i=1}^{n} c_i = C$ and $y - c_i \geq C$ for all $i \in \{1, \ldots, n\}$, including one symmetric equilibrium in which all

[1] If the categorical imperative is interpreted as meaning that the maxim should become universal law only among the n_k moral agents, then the charity will collect C whatever the number of moral agents. I don't think, though, that this is the correct interpretation of the categorical imperative.

[2] The equilibria I am considering are the Nash equilibria of this game played by egalitarian and non-egalitarian agents. The usual Nash rationality requirements, therefore, apply. Observe that Kantian

egalitarian agents contribute $\frac{C}{n_e}$ (assuming $C<y-\frac{C}{n_e}$), and, in all these equilibria, the needs of the charity will be filled, whatever n_e.[3] The egalitarian agents in this example stand for the limited number of people in society who volunteer to give time and/or money so that specific needs of sick, disabled, refugee, or excluded people are met. The social welfare function characterizing these agents mean that the specific needs of these people make them qualify in the volunteers' mind as the worst-off. That shows that some existing cooperative behavior is easier to rationalize based on egalitarian social welfare functions than Kantian optimization.

If we agree that socially desirable outcomes can be obtained in a decentralized way when even a limited number of agents are egalitarian-social-welfare maximizers, than new questions arise. Is there a trade-off between teaching egalitarian social welfare function to just a few or teaching Kantian optimization to all? Which institutions emulate egalitarian ethos?

5. Concluding comments

Section 2 above proposed a generalization of the first welfare theorem of market socialism. By doing so, I have exemplified the kind of new questions that normative economics can add to its agenda in line with Roemer's works. These questions, however, were all raised in the frame of Roemer's revision of socialist ethics, which contains the principles that agents should and/or will behave cooperatively in a socialist economy, which is captured by the model of Kantian optimization.

In Section 4, I introduced a simple alternative model of individual morality and I argued that it must have some positive value. This model cannot be reduced to a model of Kantian optimization and it does not deal with specific socialist institutions. In this section, I would like to underline that Roemer's research agenda suggests that new questions should be raised in welfare economics that go beyond the research on socialism. Indeed, I think that Roemer's works should lead welfare economists to add the ingredient of individual morality and moral behavior into the picture of distributive justice, in order to build a more general model of the interactions between institutions, normative outcomes, and individual behavior.

The first set of questions could consist of positively understanding better how morality influences human behavior and deduce models of moral behavior. These models could then be used to better understand how

optimizers in the Kantian game above are able to compute their optimal strategy even if the game is not common knowledge: they only need to know C and n_k.

[3]It is not difficult to show that a limited number of agents following Harsanyi's rule utilitarian ethos may also fail to fill the charity needs.

socially desirable outcomes can be obtained in a decentralized way. If moral behavior is to be part of a theory of justice, then it is crucial to better understand how people trade-off between their private interest and the common good. Behavioral economics has shown the positive value of taking account of many kinds of departures from the classical models of rational behavior, and the main departures have had to do with limited cognitive abilities and agents' other-regarding goals. Altruism is an ingredient that has proven sufficient to explain choices that do not seem to be rationalizable by self-centered optimization but whether altruism is part of the goal that selfish (but other-regarding) decision-makers follow orthe proof of a genuine concern for the common good is often an irrelevant question.

The second task could be to understand the emergence of moral behavior and how institutions can shape them, in particular reward institutions, such as taxation systems. A subquestion is of course the ability of socialist institutions to promote cooperation, as studied by Roemer. The resulting institutional design exercises would then take into account the influence of institutions on moral behavior. Studying normatively how the ability of agents to refrain themselves from exploiting all the possible opportunities they face because of a concern for the common good and understanding the consequences on the ability of institutions to produce socially desirable outcomes could be a very interesting addition to normative economics. Experimental research on the effect of one's conception of justice on her action has already given rise to fascinating results (see for instance Cappelen *et al.* 2013) but general models of the production of social optima that take them into account are still to be produced.

A parallel task could be to abstractly study the ethos that guarantees the implementation of this or that conception of justice. Looking then at the plausibility of such ethos could give us more hints into the ability to reach economic justice or the efficiency cost of it.

The ultimate objective would be to have a complete theory of economic justice, of which the case of purely selfish and self-centered agents, which is the case on which most of the efforts up to now have been concentrated, would be no more than one component.

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