

Applying economic methods to humanities and other strange things: four short essays

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Abstract

A dissertação consiste de quatro partes. A primeira é uma resenha sobre a incorporação formal de preocupações com posição relativa (*relative concerns*) nos modelos econômicos. Creio que existe espaço para uma resenha desse tipo visto que nenhuma foi feita desde 1992, quando começou a literatura relevante para a presente discussão.

O ensaio seguinte consiste da prova de um teorema sobre a distribuição igualitária de riqueza no contexto de preocupação com o status social. A conclusão é bastante cínica em relação a uma das vacas sagradas da maioria dos utopismos.

O terceiro ensaio é de novo um teorema, de novo como conclusões cínicas, a respeito da intuição que um sociedade com os membros suficientemente (mas não perfeitamente) altruístas seria estável e sem conflitos.

O último ensaio é uma conjectura baseada num artigo recente de David Friedman. A minha ambição foi tentar explicar o comportamento aparentemente puramente caprichoso e irracional de *law enforcement* nos regimes ditatoriais.

O que une os ensaios é uma tentativa de rever algumas discussões típicas até mais das ciências humanas que sociais valendo se do instrumental formal da teoria dos jogos e a intolerância à ambiguidades nutrida pelas últimas gerações dos economistas.

PAPE I MAME

“I know my theories and findings are hard for you to accept because they are so original and extraordinary. But one day in the future, you will see that I am right. You will be forced to accept my invention as millions of people around you tell you that I am right.”

Alex Chiu, the inventor of Eternal Life RingsTM at an interview

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1 ECONOMICS OF STATUS: A LITERATURE OVERVIEW

1.1 THE RISE OF THE ECON EMPIRE: A PRELUDE ON ECONOMIC IMPERIALISM

The expansive tendencies of the economic field certainly have some deep roots. Marx believed that economics was the motor of history and the social and cultural structures could only be usefully understood in economic context. However, he also believed that the preferences are malleable as tin – something in sharp contrast with what the profession is all about, at least to the majority of its members.

The more relevant seeds of the expansionism is to be detected in the Chicago tradition. Those are statements from Milton Freedman’s and Gary Becker’s manuals edited respectively in 1962 (based on 1946 class notes) and 1971:

“ An economics problem exists whenever scarce means are used to satisfy alternate ends. ... This concept of economics problem is very general and goes beyond matters ordinarily thought of as belonging to economics. ... Indeed, strictly speaking there hardly is any problem purely technological.”

“ ... I argue that the broad definition of economics in term of scarce means and competing ends should be taken seriously and as a source of pride...”

sound remarkably similar to the legendary Gengis Kahn’s testament that bequested to his heirs all the land to be touched by the foot of a Mongolian horse.

However, in 1973, Axel Lejonhufvud could still write in his “ Life Among the Econs” :

“The Econ tribe occupies a vast territory in the far North. Their land appears bleak and dismal to the outsider, and travelling through it makes for rough sledding; but the Econ, through a long period of adaptation, have learned to wrest a living of sorts from it. They are not without some genuine and sometimes even fierce attachment to their ancestral grounds, and their young are brought up to feel contempt for the softer living in the warmer lands of their neighbors, such as the Polscis and the Sociogs.”

In more recent times however, the opportunistic raids at those warmer lands have escalated to full-blown occupations, entire domains of sociology, political science and legal theory being ruled either directly from the economic departments or through pro-consuls. So far, though not all the occupied embraced the conqueror's way, much loathing¹ but little coherent resistance has arisen. The honorable traditions of internal feuding of this fields have, no doubt, made the conquest easier.

Which is not to say, however, that ruling an empire is a safe business. Actually the Econs are no more immune than Mongols to the famous Chinese conqueror's curse. As a long string of empire-builders have discovered, you could, with a well trained army, take advantage of the China's internal strifes and emperor's weakness, occupy the land, establish yourself at the imperial palace and your lieutenants at the main cities... only to wake up one day and discover that you became just one more Chinese emperor with all the weaknesses bequeathed. Venturing too far may be quite dangerous. The ideas like:

“...it was not possible to explain long-run poor economic performance in a neo-classical framework. So I began to explore what was wrong. Individual beliefs were obviously important to the choices people make, and only the extreme myopia of economists prevented them from understanding that ideas, ideologies, and prejudices mattered. Once you recognize that, you are forced to examine the rationality postulate critically.”

“...I began to puzzle seriously about the rationality postulate. It is clear that we had to have an explanation for why people make the choices they do; why ideologies such as communism or Muslim fundamentalism can shape the choices people make and direct the way economies evolve through long periods of time. One simply cannot get at ideologies without digging deeply into cognitive science in attempting to understand the way in which the mind acquires learning and makes choices.”

sound a bit too fringy to many economists, even coming from the Nobel Prize winner Douglass North.

As more and more resources of the profession are drawn to the overseas conquests, some

¹Titles like “First Thing We Do, Let's Kill All The Economists” [F. Cross; Texas Law Review, v.70] capture the mood.

economists wonder if empire-building is such a good idea after all.² Their argument is that we are not as tough and successful as we believe we are. For example, the profession still does not have a really convincing model for money, arguably the oldest question it ambitions to understand. Is not it be preposterous to meddle in the other areas while we still cannot put order in our own house? That's certainly a very good point. A possible answer is that maybe the tools of economic theory are more effective in explaining criminal law or family than they hitherto have been in explaining money or price rigidity.

But just as the influence of economics and its ability to "project power" outside its border grows, two disciplines are acquiring some influences in the very heart of the economic metropolis. A more widely known is the behavioral psychology. The other one is the evolutionary biology (or, to be more specific, evolutionary psychology). Far from representing the decline of the economic approach, it is a sign of its importance. All the influential researchers looking for insights in those fields are clearly not trying to overthrow "the system" but to refine it from inside. This is especially true of the insights derived from the evolutionary biology, whose primary interest is to see what kind of utility maximizers could have weathered the evolution.

My present exposition is about interaction of three areas at once. The status literature includes not only the refinements of existing economic models, but also some incursions into the traditional sociologists' domain of social stratification as well as research into the evolutionary roots of status seeking, inspired by biology.

1.2 MINE IS BIGGER THAN YOURS

People clearly care where they stand relative to the other people. Everybody wants to be not only rich, well educated, good-looking and smart, but also richer, better educated, more good-looking and smarter than the neighbors. The evidence to support the hypothesis is truly overwhelming and citations supporting it could easily be regimented not only from Veblen, but also from Adam Smith and even from Plutarch.³ The importance of relative

²Pursuing once again a historical parallel, we can call them Little Englanders.

³"In his journey, as he was crossing the Alps, and passing by a small village of the barbarians with but few inhabitants, and those wretchedly poor, his companions asked the question among themselves by way of mockery, if there were any canvassing for offices there; any contention which should be uppermost, or feuds of great men one against another. To which Caesar made answer seriously, "For my part, I had rather be the first man among these fellows than the second man in Rome." Plutarch in Caesar.

concerns can well be downplayed, but their existence is really hard to deny.

Why should economists care about relative concerns? There are at least three good reasons. First of all, the competition for status might be a source of inefficiencies because of “rat races” it creates (economic equivalents to peacock tails). A less immediate obscure, but potentially very important, reason is because status-seeking can generate herd behavior – apparently a much more common phenomenon than most models acknowledge. This potentially, can open the whole field of social norms for the economic analysis. Finally, many run-of-the-mill economics models dealing with such traditional questions as growth and asset pricing can be improved by widening the scope of agents concerns.

Helas, there is no free lunch, even a theoretical one. Two very serious objections to the approach can be made and hence, before we proceed to the analysis of the literature, they should be discussed.

The first objection is the general one concerning incorporation of the status (or, of anything else) into the utility function.⁴ In McCloskey’s words, are not we making “Why did the man drink the motor oil? Because he had a *taste* for drinking motor oil!” argument? There is no point denying the tradeoff. The only possible answer to that is that the insight gained by the approach should be weighted against the increased sloppiness resulting. After all, the fact that introduction of new variables always improves the statistical fit is regarded as a cautionary tale, rather than *prima facie* rejection of multivariate statistics.

Another, complementary, question is how exactly do you incorporate status concerns? Cannot different models generate similar predictions creating an identification problem? The answer (quite cowardly) is that more empirical research is needed.

However, I believe there is a methodological point that can be made on behalf of the relative concern models. After all, they are usually called in to explain puzzles. It might be worth to remember that for many the answer for these puzzles is a general skepticism towards rational models and evocation of increasingly popular irrationalities. Particularly where attitude towards risk is concerned, incorporation of relative concerns seems to be an attractive way to fit the data without throwing the rationality out.

⁴As we shall see, some models manage to get round this, but at a price.

1.3 SO MANY WAYS TO BE BETTER THAN YOU

Personally, I became interested in the theme for a reason. After the Russian crisis of 1998 I read about a community particularly badly hit by the default of the internal debt by the Russian government. It was the elite of Monterrey, Mexico. The story behind it was quite simple. Two rich guys without any kind of economic training or knowledge of financial markets decided to gamble a little bit. During one of the many confidence crises in 1994 they bought some fifty thousand dollars into the Russian bond market. They quadrupled the invested in a few days. Next time they decided to gamble, some friends asked to join. Finally in 1998 a sizable portion of the wealth of Monterrey was at their hands to gamble at the Russian bond market. They lost it all. The question, of course, is: “Where their friends stupid?”. At first I decided that they certainly were. But then I changed my mind. Imagine that all your neighbors are embarking in a risky investment that you, particularly, may find a bad idea. However if you dread the prospect of being the only one not to share the bonanza in case of success more than you rejoice the opportunity to be the only one to stay away from the folly you may still join in (even an unfair gamble!).

So far so good. But why do you “dread the prospect of being the only one not to share the bonanza in case of success more than you rejoice the opportunity to be the only one to stay away from the folly?” Is it because you keep comparing yourself with your neighbors? Or is it because if you suddenly become poorer than everybody else you stop being invited for dinners, while if you become richer little will change in this respect? Or is it because and the guy next door are competing for the heart of the same girl, who, other things equal, will favor the richer one?

This is one of the most important questions the literature deals with. We will examine the answers directly.

1.3.1 Is the privilege a mean to the other ends or an end in itself?

According to Paul Krugman, “it is an open secret that the chief payoff from being really rich is, as Tom Wolfe once put it, the pleasure of ‘seeing ’em jump.’ Privilege is not merely a means to other ends, it is an end in itself.” What does the literature think about it? Essentially, there are two stands: that of the trio composed by Harold Cole, George Mailath, and Andrew Postlewaite (from now on CMP) and, essentially, everybody else (given the size of the field it is not as impressive as it sounds). CMP are adamant in their belief that the

objections presented above manage to beat the hell out of the idea of putting status into the utility function. There is a higher horse. The agents do not care directly about the utility, but rather indirectly, as their relative wealth determines their mating opportunities. Definitely, CMP had a very interesting idea.

However, they claim to achieve higher standards and look down at the “status is utility” crowd. Well, as George W. Bush famously put it during the campaign, “You can’t take the high horse and then claim the low road.” Their paper does make some very, very strong assumptions. Those are, as they point out, empirically testable. However, even if the assumed is true, it seems that they trade one puzzle for another.

Their general claim is that a whole range of goods, from invitations to exclusive dinners to mating opportunities, are distributed not through the marketplace, but as prizes in a contest for relative social standing. This is why people ought to care about their relative position. Very reasonable. But one may be tempted to ask why is it so at the first place. After all, if we want to explain a social norm, it is hardly the best strategy to claim that it is reasonable in light of another social norm. Actually, they try to provide a more detailed answer for the mating opportunity question in their model. Once married, the couple consumes everything jointly. So a woman married to a richer man will consume more and married to the poor one less. But wait a minute. How much a man “wines and dines his wife” is negotiable. Allowing for the increasing returns at the household, that would not eliminate the problem. Actually, if there are possible multiple production processes at the household and all of them exhibit increasing returns, the room for bargaining is amplified. So in practice it would be possible for a poorer man to offer a better deal by pledging to spend a larger part of his wealth to satisfy his wife’s needs. This would undermine CMP’s results. All this is ruled out by the CMP’s technological restrictions. But the more serious problem is that, again, one social norm is explained by another. Monogamous marriage is also given and not endogenous. But it *is* a social norm.

In light of the above, it might be prudent to give the status in utility a chance. A very good argument for proceeding in this manner is that this hypothesis appears to make evolutionary sense. First of all: what do I mean by evolutionary sense? The evolutionary approach deals with two similar, but not necessarily identical questions: what kind of preferences would give the best advantage for survival (fitness) in a given environment and what if in the group of people with one kind of preferences suddenly appears a mutant with a different kind (evolutionary stability). As an example of an interesting development along this line

we could cite the debate about the stability⁵ of altruism in a pure or modified form. Why should we care about testing the preferences for evolutionary stability and fitness? Because the homo sapiens is a product of evolution and the inspiration for the homo economicus. It seems like a good practice not to use preferences which do not pass the evolutionary checks (which does not mean that all the preferences that could be shown as fit and stable will necessarily be verified in practice).

To this, surprisingly, we get some quite definite answers: yes people who keep an eye on the others have more chances of survival. One of the approaches for the discussion is associated with Arthur Robson, the other one with Larry Samuelson.

Robson's 1996a article has a very elegant argument. Clearly, the most fit preference for children is risk neutrality. If the production function of children from commodities is concave, then the concave, expected utility will be the most fit preference. However, we are talking about risks not correlated among agents. What if agents face both idiosyncratic and common risks? The law of large numbers provides an automatic biological insurance for the specie. No such insurance is available against aggregate risks. So the most fit preference is to be more risk averse towards aggregate risks than towards idiosyncratic ones. This may explain why people are more scared of terrorist attacks than of not wearing a seatbelt. Robson 1996a does not tackle the issue of preferences for status. However, it is not too difficult to think of aggregate risks being endogenously generated, by people's choices. By this venue people may well start caring about their position relative to other people. A simple example of this kind of rationalization is done in Robson's 1996 G&EB article.

Larry Samuelson's argument is that preferences astew from a tradeoff between costly rationality and the survival likelihood. People may want to survive and so think more or less like this: "I want to survive. Therefore I must eat. The optimal feeding process involves having a steak in about 20 minutes time. Therefore, I'll eat a steak." This kind of agent must have a lot of brainpower and brainpower is costly to maintain (brain consumes a lot of energy). The alternative is to have an agent saying "I feel hungry. I'll have some steak." This preferences are, however, hard-wired and so may lead to large deviations from optimal strategies in some scenarios (say, overeating). The concern for other people acts, is modeled by Samuelson as a cheap way to take optimal decisions by imitating. The tradeoff is that you have the risk of jumping the bridge along with everybody else.

⁵Note that altruistic cooperation may give the most chances of survival and still be unstable.

Heuristically, the unification of the two approaches may well be more than the sum of the parts. An agent may think: “I’m risk neutral for children. Therefore, I’ll have to solve an intertemporal period model like CMP’s and evaluate the Nash equilibrium for this period. Aha.. let me check this equation. Yes, I should care about what other people do!” The alternative is someone thinking: “I want to be rich and very good in something so that chicks like me.” The relative plausibility is at the eyes of the beholders, of course.

1.3.2 What exactly is status?

One of the advantages of the CMP approach is to go round this problem and be concerned instead with the claims to the social goods (such as marriage prospects) allocated by non-market mechanism dependent (this dependence arises endogenously) to the relative position. Becker, Murphy and Werning 2001 (afterwards BMW) take an approach most similar to the Max Weber’s definition of status as an “effective claim for social esteem” and put it into the utility function. Their crucial assumption is that there is a limited amount of social esteem to get around and that it can be bought in a marketplace (say in form of gold or diamonds).

Another approach, most notably associated with Robson (it is also the alternative approach used by BMW) is the most intuitive one – to see status as a ranking within a given group (see Section’s 2 application). Clearly, moving one position up or one position down the agents generate ample externalities to the others.

Finally we can talk about status associated with some occupations. Or relatively to the average (in this case what norm shall we choose? Euclidean? standard deviation? something else?).

1.4 SO WHAT?

From the said above, it may appear that the status literature mimics the behaviour it intends to describe by passing more time on each other throats (or fighting for the first place) than delivering the goods to profession at large. This impression is wrong and to prove the point here are some results worth mentioning.

1.4.1 Why people gamble, why the income distribution may be endogenously determined and why men take more risks than women. Why people do not diversify as much risk as the theory predicts

Sometimes people just tend to take too much risk. A very interesting example is, maybe, the modern day Chicago gangsters' value for life estimated by Levitt and Venkatesh at US\$8000. Or, to be less extreme, people gamble and buy lottery tickets. One of the most documented puzzles indicates that people do not diversify their labor income risk and their portfolios as much as they should. All this behaviors are exactly what relative concerns literature predicts they should do.

We have already discussed how the demand for risky assets may be affected in the Monterrey example. Another possible application may be to explain the sudden ballooning of demand for equity in USA during the 90s. Robson's 1992 article as well as BMW formalize the intuition in somewhat distinct ways. CMP's working paper goes some way in explaining home bias puzzle of non-diversification. Robson (1996) argues that males being not a scare resource, from the evolutionary view point, must imply more risk taking by males than by females.

Probably the most interesting application of all is due to BMW. If people want to get ahead of each other, it seems intuitive that some income distributions are inherently unstable (if everybody is just like you, taking some very little risk can make you king. If the gap between the rich and the poor is vast, the poor must take huge gamble to "really get somewhere" so far as status is concerned)⁶. BMW build on Pareto's insight that the pattern of wealth distribution appears to be much more similar among different country that one might expect. In BMW model the agents choose a distribution of wealth by taking fair gambles and converge to similar final patterns from very different initial conditions (one of the implications is that the government's ability of choosing a wealth distribution by redistribution is very limited).

1.4.2 The properties of the growth models are altered

Perhaps the main reason why status is not more widely studied by economists is because the argument, taken to the extreme, implies that the search of economic development is the

⁶More igualitarian societies encourage greater risk-taking. How is this compatible with the evidence that crime and inequality are inversely related? By noting that there are better venues for risk-taking than crime.

most futile of the possible endeavors. If all I care is “staying ahead of Joneses” it does not matter if we are equally rich or equally miserable.

But the literature shows that without going to the extremes it is possible to obtain some very interesting results. The most appealing contribution of the approach is doubtlessly the CMP’s 1992 article. If higher savings bring a more attractive mate, oversaving naturally emerges with wealth being for the human reproduction what tail is for the peacock. The interesting idea is that there is a way around it. To prevent oversaving, an “aristocratic equilibrium” where status is attributed to birth, not wealth can emerge.⁷ But how to prevent low-status males to work really hard so as to compensate in eyes of the potential partners his lowly origins? A rule they envisage to make the equilibrium stable is that the child born in an inter-class marriage has lower status than either of the parents. Or rather, as Mr. Darcy puts it in Jane Austin’s “Pride and Prejudice” :

“In declaring myself thus I am fully aware that I will be going expressly against the wishes of my family and friends and I hardly need add, my own better judgment. The relative situation of our families is such that any alliance between us must be regarded as a highly reprehensible situation.”

Another JPE article, by Chaim Fershtman, Kevin Murphy and Yoram Weiss, “Social Status, Education and Growth” studies the impact on the economic development of status attached to some occupations. Their dismal prediction is that the more status is attached to the white collar jobs, the more stupid and unproductive rich kids would get them, ruining the economy’s performance.

1.4.3 “Madness of crowds” and herd behavior

For a long time, at the very least since 1841 when Charles Mackey published a delightful book “Extraordinary Popular Delusions and the Madness of Crowds”⁸ economists tried to understand why what can be called herding happens. After a little thought it seems very reasonable to wonder whether such things as social norms (which may vary widely among quite similar societies) can be explained as some kind of herding.

The three alternative explanations each stresses one of the three possible ways of that interactions between the economic agents might take place: through the constraints (actions

⁷However, the existence of this kind of equilibrium crucially hinges on their joint consumption hypothesis.

⁸Till today the required reading for the Wall Street rookies in Goldman Sachs among other places.

of one agents reflect on the constraints faced by the others – the prime example is the study of market interactions), expectations (signaling models are a prime example) and preferences.

The simplest explanation why people tend to do similar things was formalized by Gary Becker in “A Note on Restaurant Pricing and Other Examples of Social Influences on Price”. This explanation involves the observation that people like to share experiences about their consumption. This might be called a case of increasing social returns. Plausible as the model is, it is hard to believe that people buy same stocks because they enjoy chatting about the same stocks or that they obey the same ethical rules because they enjoy sharing ethical principles.

Another explanation of the herding behavior is through asymmetric information. The pioneering model of the type is due to Banerjee (1992). A very interesting application of the asymmetric information to explain social norms is due to Bernheim (1994). For a use of social norms framework to explain why publishing a paper in a top economic journal takes today so much longer then 30 years ago, see Ellison (2000). Interesting as expectations interactions explanations are, in most cases of interest they involve trully draconian hypotheses about information distribution in a society (and are very sensitive in this regard).

As we have seen, relative concerns explain a lot of herding in investment and risk taking decisions in general. We can plausibly conceive justifying such things as a low and high risk taking corporate and national cultures as multiple equilibria of relative concern model (if everybody believe in not sticking the neck out, you better not to, but if everybody takes risks, it may be better, as we have seen to take risks too). Another interesting path is investigating how social rewards could be used by the society to minimize the externalities problems as do Chaim Fershtman and Yoram Weiss (1996). An important contribution is Andrew Clark and Andrew Oswald (1996) Of course there are much more to preference interactions than status. Altruism, for example, is certainly very important. Nevertheless, it seems to be a promising venue for the future research.

2 A SAD THEOREM ABOUT EQUALITY

The normative discussions about the income distribution are widespread and far from settled. As a matter of fact, they are not, and never were, restricted to the economic profession. Traditionally, it was philosophers' turf. The discussion is closely related to the concept of justice and so we have terms like "unjust income distribution." Whatever it means is at the eyes of the beholder.

A particular income distribution has being a starting (and many times ending) point of the discussion. The egalitarian distribution is simple and corresponds to many people's ideas of what is just (Rawls is a particularly visible modern thinker forwarding this view).

The critiques of the view traditionally stressed what they saw as inequity of such a situation. The argument is that people are unequally deserving because some put more effort into the work than the others. Furthermore, the enforced inequality is obviously inefficient. Those are good arguments, but they have nothing to say about the simple model of endowment economy.

Why is the endowment economy interesting? After all, manna rarely falls from the sky in the real world. True, but the interesting ethical question is what to do given that people are born with unequal capital and genetic endowments.

The present essay attempts to apply the tools developed by the status literature in economics since 1992 (reviewed at the previous essay) to this discussion. Our objective here is to prove a very general result about a very particular income distribution. Though the egalitarian distribution has zero practical interest, normatively its relevance is evident

Let's state our assumptions.

A1) it is non-decreasing at relative consumption;

A2) the individual status corresponding to the equalitarian equilibrium is not the highest status that can be achieved by an individual at our economy.

Together, A1 and A2 imply that $v(1) > v(\text{mediocrity})$: passing from the mediocrity to the absolute precedence results in a discrete jump of the utility. The separability assumption is rather strong and a way to relax it will be discussed latter on. Note that the preferences can be heterogeneous, as long as every one of them satisfies the conditions above.

Theorem 1 *In an economy with N agents (with $N \geq 2$) an equalitarian wealth distribution with strictly positive value of the initial endowments is never Nash equilibrium as long as*

there is a complete competitive market for fair lotteries and preferences satisfy the conditions imposed below.

A1) The expected utility framework is valid. The proof relies on one of the consequences of the von Neuman-Morgenstern framework – local neutrality to risk. This assumption clearly rules out some unimportant cases such as lexicographic preferences.

A2) The preferences can be represented by

$$U_i(c, s) = u_i(c) + \theta v_i(s).$$

where $u_i(\bullet)$ is a von Neumann –Morgenstern utility over consumption defined over R^+ , θ is any positive real number and $v_i(\bullet)$ is a function with a finite range defined over the rank at the distribution which must satisfy A1 and A2.

2.1 Proof

The theorem is immediate at the case when $u(\bullet)$ is convex and so the agents are risk lovers (there is no tradeoff between risk taking and status achievement).

The non-trivial case is when agents exhibit risk aversion (our proof will take care of the risk-neutrality case). The intuition says that if agents are sufficiently risk averse and status is sufficiently unimportant then we should have zero demand for fair lotteries. This intuition, however, is squarely wrong.

By assumption, every fair lottery is available to the agent. Furthermore, in a perfectly competitive market, the price of risk is zero (since it can be trivially produced at no cost). By assumption, $v(1) > v(\text{mediocrity}) \geq v(N)$ and $v(N)$ is finite. Then there is a p belonging to $(1, 0)$ such that

$$pv(1) + (1 - p)v(N) > v(\text{mediocrity}).$$

Here p is the probability of wining more than you bet. There are infinite fair lotteries satisfying this condition. To prove that there is always at least one such fair lottery, we will construct it in the following way:

$$px + (1 - p)0 = 1$$

represents a fair lottery where with probability $(1 - p)$ the bet is lost and with probability p an amount x is paid out. We see that:

$$x = 1/p \text{ which serves both as away to find } x \text{ and as a proof that } x > 1.$$

We have proved that there is a fair lottery leading to a strict expected increase in utility derived from status if our agent is the only one to buy a lottery. The big question is, of course, about what happens with the utility in large. In the case of risk-neutrality, the answer is trivial: the agent will always buy the status-increasing lottery.

What happens in the case of risk aversion? As we have mentioned before, we only have to remember that, for a sufficiently small investment at the risky asset, we have risk neutrality. In other words, the utility loss due to risk aversion can be made arbitrarily small by simply purchasing less of the risky asset. The impact on status of such a decision will be nil, for, as we have seen, it depends at the relative probabilities of winning and losing and not at the magnitude of the deviation.

The ugliest assumption made so far is doubtlessly the separability of the utility function. However, the theorem can be proved under a weaker assumption. For an arbitrary utility function satisfying expected utility framework,

$$U_i = F(c_i, s_i),$$

we need a new condition:

$$F(w, 1) > F(w, \text{mediocrity}) = F(w, N) > -\infty,$$

where w is the positive initial endowment, uniform among the agents. The proof follows in the manner as in the separable case.

The condition is clearly satisfied for any agent who prefers more status to less, no matter how much he consumes. I believe that this is a very, very mild requirement.

3 UTOPIES ARE CLOSED: A THEOREM

The utopias, since Plato's Republic, are concerned with the description of the ideal state that societies should aspire. This state is, usually, described at great detail. However, utopians tacitly agree that the exact implementation of their proposals is not feasible. Would an implementation which is "close enough" do? Plato discusses this matter explicitly in "The Republic":

"But still I must say, Socrates, that if you are allowed to go on in this way you will entirely forget the other question which at the commencement of this discussion you thrust aside: — Is such an order of things possible, and how, if at all? For I am quite ready to acknowledge that the plan which you propose, if only feasible, would do all sorts of good to the State. I will add, what you have omitted, that your citizens will be the bravest of warriors, and will never leave their ranks, for they will all know one another, and each will call the other father, brother, son; and if you suppose the women to join their armies, whether in the same rank or in the rear, either as a terror to the enemy, or as auxiliaries in case of need, I know that they will then be absolutely invincible; and there are many domestic advantages which might also be mentioned and which I also fully acknowledge: but, as I admit all these advantages and as many more as you please, if only this State of yours were to come into existence, we need say no more about them; assuming then the existence of the State, let us now turn to the question of possibility and ways and means — the rest may be left.

If I loiter for a moment, you instantly make a raid upon me, I said, and have no mercy; I have hardly escaped the first and second waves, and you seem not to be aware that you are now bringing upon me the third, which is the greatest and heaviest. When you have seen and heard the third wave, I think you be more considerate and will acknowledge that some fear and hesitation was natural respecting a proposal so extraordinary as that which I have now to state and investigate.

The more appeals of this sort which you make, he said, the more determined are we that you shall tell us how such a State is possible: speak out and at once.

Let me begin by reminding you that we found our way hither in the search after justice and injustice.

True, he replied; but what of that?

I was only going to ask whether, if we have discovered them, we are to require that the just man should in nothing fail of absolute justice; or may we be satisfied with an approximation, and the attainment in him of a higher degree of justice than is to be found in other men?

The approximation will be enough.

We are enquiring into the nature of absolute justice and into the character of the perfectly just, and into injustice and the perfectly unjust, that we might have an ideal. We were to look at these in order that we might judge of our own happiness and unhappiness according to the standard which they exhibited and the degree in which we resembled them, but not with any view of showing that they could exist in fact.

True, he said.

Would a painter be any the worse because, after having delineated with consummate art an ideal of a perfectly beautiful man, he was unable to show that any such man could ever have existed?

He would be none the worse.

Well, and were we not creating an ideal of a perfect State?

To be sure.

And is our theory a worse theory because we are unable to prove the possibility of a city being ordered in the manner described?

Surely not, he replied.”

(Emphasis added.)

Though no important utopian explicitly disavowed any implementation which is not perfectly according to the blueprint (even if few, as Plato, stated explicitly that an implementation is good enough), I’m less interested in what the philosophers actually said, but rather how they are understood. It seems rather obvious that utopias would have vastly less followers if nothing, but exact implementation would be believed to be acceptable. In other words, if the utopias’ properties are closed at the mathematical sense (so that coming closer to the ideal does not make the society acquire the desirable properties) that they can hardly be seen as a guide for action.

Not that the issue of implementation is ignored by the utopians. The last century saw many a battle about the issue. The followers disagree what part of the great vision should be implemented with the most urgency. However the fundamental issue was rarely discussed since Plato.

Here I try to analyze the question mathematically. The model below does not allow for multiple interpenetrations. The convergence is well defined.

The objective is to show that the topological openness cannot be taken granted. While probably not representing exactly any famous utopian's worldview, I believe it to be a pretty good proxy of the worldviews of their followers.

3.1 Model

Let there be N agents with utility function of i th agent being:

$$U_i = \theta u(c_i) + \sum_{j=1}^N u(c_j),$$

where $\theta > 0$; $u(c_i)$ are strictly concave individual "pleasure" functions.

With increasing N and diminishing θ these preferences come arbitrary close to that of the egalitarian social planner, making our agents overqualified for sainthood under most conventional definitions. We allow θ , a preference parameter to change, assuming, as the utopist almost invariably do, that the preferences are malleable as tin. Would we have an idyllic society?

With $\theta = 0$ we have precisely the kind of conflict-free, altruistic society that the utopists so long aimed at.

Now let us see what happens when the condition of loving "thy neighbour as thyself" is only approximately met. In other words, $\theta > 0$.

Imagine that at the communal field grows an apple tree (it's an utopian apple tree, so a few liberties will be taken). It can be harvested at the period $t=1$ and each utopian would gain one apple. Or it can be fallen at the period $t = 0$ and one apple is produced. To simplify the matter, we will assume that apples are indivisible and that an utopian is indifferent between having an apple at $t = 0$ and $t = 1$.

The tree is safe of course. No altruist would try to bring it down before it's ripe. Helas, this intuition is wrong.

The game emerging from the situation allows payoff of $(N + \theta)u(a)$ for every agent if the tree is harvested at $t = 1$ and of $(1 + \theta)u(a)$ if he treacheosly cuts down the apple tree down before time⁹ and of $u(a)$ if somebody else does the deed.

Is trivial that if $N > 1$, nobody wants the tree to be cut down before time. However, it is not enough. Surely, nobody touching the tree is one Nash equilibrium of the problem. However, there is an another. If the utopian believes the tree will fall anyway, he prefers that it does so by his own hands for $(1 + \theta/N)u(a) > u(a)$ (in words this means that an apple is good, not a "bad").

Furthermore, and rather paradoxically, for $N \rightarrow \infty$ (and consequently the damage done by the tree falling increasing), the tree-falling becomes the risk-dominant equilibrium of the game since

$$(1 + \theta/N)u(a) > (1/2)^N(N + \theta)u(a) + (1 - (1/2)^N)u(a)$$

for a sufficiently large N. This follows from the fact that

$$\frac{N^2 - N + \theta N}{2^N} \rightarrow 0$$

as $N \rightarrow \infty$.

Apparently, a society arbitrary close to the uthopists perfection would be, at the best case, at the brink of chaos and destruction. Contrary to what Plato supposed, an approximation would not do.

⁹If k people decide to destroy the tree, the expected payoff of each of them would be $(1 + \theta/k)u(a)$.

4 A COMMENT ON THE ECONOMICS OF PURGES, CRACK-DOWN CAMPAIGNS AND EFFICIENT PUNISHMENTS.

In an article recently published by the JPE, David Friedman (1999) noted that there exists an efficient punishment at the disposal of every society and asks why this scheme is not universally adopted. This efficient punishment consists in substituting of prison terms with a death penalty lottery of equivalent deterrence effect, but less costly to the society. The prisoners should only be maintained alive, in this scheme, if the proceeds of their work compensate for the costs of guarding them. He also asserts that no modern society uses this kind of punishment. However, precisely the modern experiences lend the best evidences about when and why the Friedman's punishment is used.

The evidence to be discussed is the one regarding the modern totalitarian regimes – the Soviet Union and the mainland China. The most salient characteristics of the law enforcement systems of these regimes are the harshness of the punishments and a considerable sporadicity. The second point deserves some further comment. The Soviet Union, especially in the Stalin era, knew a series of purges and campaigns against one kind of misbehavior or another. In the present day China the law enforcement of any particular crime sporadically changes from very lenient to very harsh with little beforehand notice. The transgressions widely tolerated yesterday are mercilessly pursued today and will probably be tolerated again tomorrow, as the law enforcement organs concentrate on the execution of another campaign.

Friedman asserts that the inefficient punishments, as practiced in the Western democracies serve as a check against the rent-seeking by the state. To test the hypotheses we need to ask: “In what kind of state are such kind of checks least likely to be found?” The logical answer is that a “stationary bandit” kind of state, maximizing the surplus extracted from its subjects would not worry about the rent seeking. It would worry, however, on spending scarce resources on inefficient punishments. The China's care for the efficiency of the punishment for the state finances is well known – the condemned to shooting are obliged to pay for the bullet.

How would such a state punish its opponents (which represent a potential danger to its hold to power)? One possibility is that it will try the corner solution if it has few opponents to begin with – spend very large resources to hunt down every single one of those and submit

them to the worst possible punishment. This no-crime equilibrium can be sustained if every potential transgressor knew that, if he misbehaves, all those investigators with nothing to do would go after him.

This strategy, however, can fail (especially with the crimes about which the regime may not know about – like badmouthing the wisdom of the leadership in friend’s company) and the state will have to face a choice between a prohibitive price of the continuous pursuit of such a policy or tolerating some crime in equilibrium. However, if the dissenters are allowed to go unpunished, the regime would lose the power. And if the ordinary crime is left unchecked much surplus would be lost (and, again, the regime’s hold on power could be undermined). What a stationary bandit state should do?

Friedman’s punishment scheme seems to be the answer. It is to be noted that while the death penalty is hugely popular, most of the world’s totalitarian regimes tend to prefer sending the dissenter to labor camps. It is the rational thing to do if the loss in terms of deterrence value is compensated by the surplus to be extracted from the production at the camp.

Note that by displacing a subject from an ordinary job to a labor camp the state loses money (guarding prisoners is costly, after all). A possible exception to this rule for the case of theoretical scientists (as described in Alexander Soljenitsin’s “First Circle”) does not invalidate it in general. At the same time is very reasonable to suppose that because of the transition costs (from the arrest to the disruption of production process at the detainee’s workplace) it’s cheaper to detain one worker for ten years in the concentration camp than two equivalent workers for five (or even, to maintain the deterrence effect constant, one is detained for fifteen years rather than two for five).

If the previously made hypotheses are true we should expect the government constantly pursue a fraction of criminal and impose very harsh punishments. However, in case of multiple possible crimes (and with the evidence that may enable to get to the criminals deteriorating over time), it would be equivalent to choose a “crime of the year”, ruthlessly pursue those in fault and than choose the next “crime of the year.” If this process is i.i.d. (with probabilities corresponding to the relative gravity of different crimes at the regime’s eyes), the deterrence effect is equivalent. However implementing crime-specific campaigns rather than rolling a die for all the crimes all the time can be more efficient from the point of view of the central supervision – the efficiency of the execution of the campaigns is easier to supervise – if a couple of unharressed Falun Gong members are found after a anti Falun Gong

campaign, the central authority has every reason to suspect the zeal of the local bureaucrats (if it can reasonably assume that the evidence against them was there at the time of the campaign), while in case of simultaneous application of Friedman's scheme to every crime no such easy check is available. Besides, the central authority remain firmly in control of the emphasis given by the law enforcement to particular crimes.

It seems that methods of the totalitarian regimes yield considerable support to the Friedman's observation of the efficiency of punishments and what kind of societies can be expected to use what kind of punishments. At the other hand, the approach itself helps to understand the rationale behind the phenomena like purges and crack-down campaigns which sporadicity could easily be cited as the evidence of capricious behavior. Only the Soviet and the Chinese cases are discussed, however many other totalitarian regimes, from Nazi Germany to Castro's Cuba to Taliban, exhibited many traces of very similar behavior.

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