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Maria Pia Paganelli

Trinity University, [mpaganel@trinity.edu](mailto:mpaganel@trinity.edu)

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**Smithian Answers**  
**to Some Puzzling Results in the Experimental Literature**

Maria Pia Paganelli

Yeshiva University

maria\_paganelli@yahoo.com

Forthcoming in The Elgar Companion to Adam Smith

## Smithian answers to some puzzling results in the experimental literature

Maria Pia Paganelli<sup>1</sup>

This paper draws attention to the increased use of Adam Smith's work in the experimental economics literature. It also offers examples of how studying Adam Smith can help formulate possible answers to some otherwise counter-intuitive (if the intuition is based on the Rational-Choice paradigm) experimental results. The first part of the paper presents a short account of how, in recent years, the field has come to recognize the importance of considering other-regarding preferences as well as self-regarding preferences and how it is noticing the wealth of Adam Smith, who dealt with both. The central section of the paper offers examples of how the Smithian apparatus can provide plausible explanatory stories for data from experimental games such as, but not limited to, the Ultimatum Game, the Dictator Game and the Trust Game, which usually cannot be explained using only strict Rational Choice. Smithian resentment, love of praiseworthiness and dread of blameworthiness on the other hand seem to be plausible explanations for the seemingly irrational punishment and generosity observed in these experimental games. Concluding remarks end the essay.

Adam Smith is considered the father of economics. The concept of Homo Economicus, the rational agent with self-regarding preferences, can be regarded as his most famous child, for good or bad. Adam Smith somehow generated Homo Economicus with

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one sentence: 'it is not from the benevolence of the butcher, baker, brewer that we expect out dinner, but from their regard to their own interest' (WN I.ii.2). Of course, there is more in Smith than the self-interest of the 'baker, butcher, brewer'. But for some time not many economists bothered with it. Out of either shame or arrogance, most economists dismissed this embarrassing and/or uninteresting side of their old father's work. As a result, the other-regarding Smithian components fell into oblivion, leaving us with the lonely Homo Economicus. But:

Two implications of the standard model of self-regarding preferences are in strong conflict with both daily observed preferences and the laboratory and field experiments. ... The first is the implication that agents care only about the outcome of an economic interaction and not about the process through which this outcome is attained (e.g., bargaining, coercion, chance, voluntary transfer). The second is the implication that agents care only about what they personally gain and lose through an interaction and not what other agents gain or lose (or the nature of their intentions). Until recently, with these assumptions in place, economic theory proceeded like mathematics rather than natural science; theorem after theorem concerning individual human behavior was proven, while empirical validation of such behavior was rarely deemed relevant and infrequently provided. (Gintis et al. 2005, p. 6).

Recently something has changed. With experimental economics, the empirical validation of self-regarding behaviors has become feasible and it is so frequently provided that it can no longer be easily ignored. Results from experimental economics research cannot always be explained by self-regarding preferences alone, in their strict forms at least.

Moreover, an openness to multidisciplinary interaction is often required to interpret the complexity of human behaviors emerging from some of these experimental results.

In light of the development of some branches of experimental economics, a handful of economists is realizing at least two things about Adam Smith. First, that ‘the butcher, baker, brewer’-sentence is only *one* sentence in the almost 1500 pages that Smith published in his lifetime. And second, that Smith’s analysis has such a deep and broad breadth that is often able to provide plausible explanations for some of the ‘anomalies’ reported in experimental results.

Adam Smith, and not just his ‘economic’ book, but the whole body of his work, is being increasingly read, even by economists. The Theory of Moral Sentiments (TMS), the ‘other’ book by Smith, the book that often embarrassed economists because of its strong other-regarding bent, is now the source of a relatively large literature. It is indeed that very TMS that today receives the applauses of economists, or at least of some of them. The same characteristics of Smith that were previously a source of dismissal, are now a source of interest, authority and appreciation. Today, with our hyper-specialization, we wonder in front of the beauty of the complexity of the human system described by one person. So we have Smith again - this time in his glory, with both WN and TMS widely appreciated. A simple citation count in the economic journals alone of JSTOR shows that in the decade from 1945 to 1955, WN was cited 1267 times, while TMS only 98. In the decade 1995-2005, WN is counted about 40 percent more times (1804 times), while the number of citations of TMS almost doubles over the same period of time, reaching 180. Nava Ashraf, Colin Camerer and George Loewenstein testify this increasing usage of Smith with their 2005 article in the Journal of Economic Perspectives, where they show how well Adam Smith’s analysis explains behavioral results. They motivate their work in the following way:

Adam Smith's psychological perspective in *The Theory of Moral Sentiments* is remarkably similar to "dual-process" frameworks advanced by psychologists..., neuroscientists... and more recently by behavioral economists, based on behavioral data and detailed observation of brain functioning.... It also anticipated a wide range of insights regarding phenomena such as loss aversion, willpower and fairness... that have been the focus of modern behavioral economics.... The purpose of this essay is to draw attention to some of these connections. Indeed, as we propose at the end of the paper, *The Theory of Moral Sentiments* suggests promising directions for economic research that have not yet been exploited (p. 132)

Ashraf et al., citing the literature for which TMS is relevant, list for example Kirkpatrick and Epstein 1992; Damasio 1994; Le Doux 1996; Sloman 1996; Panksepp 1998; Smith 1998; Metcalf and Mischel 1999; Benhabib and Bisin 2004; Bernheim and Rangel 2004; Camerer and Loewenstein 2004; Fudenberg and Levine 2004; and Loewenstein and O'Donoghue 2004.

Vernon Smith, 2002 Nobel Prize Winner for his contribution in experimental economics (see Smith 2003), opens the door to this new appreciation of the whole Adam Smith in his Southern Economic Society Distinguished Guest Lecture, published in the Southern Economic Journal in 1998. Here, Vernon Smith goes straight to the embarrassing part of Adam Smith. TMS and its other-regarding behaviors, the source of the infamous Adam Smith Problem, should be considered seriously because, among other things, it does not contradict the book about self-regarding preferences; to the contrary, it is a complement to it. And so, using experimental results, Vernon Smith shows that the contradiction

between the two books does not exist, as both books are about exchange, either material or intangible:

[Adam] Smith had but one behavioral axiom, ‘the propensity to truck, barter, and exchange one thing for another,’ where the objects of trade I will interpret to include not only goods, but also gifts, assistance, and favors out of sympathy, that is, ‘generosity, humanity, kindness, compassion, mutual friendship and esteem’ ...

[Adam Smith’s behavioral axiom] explains why human nature appears simultaneously self-regarding and other-regarding. It may also provide an understanding of the origin and ultimate foundation of property rights. ... Both social exchange and trade implicitly recognize mutual rights to act, which are conveyed in what we commonly refer to as ‘property rights.’ In what sense are such rights ‘natural?’ The answer, I think, is to be found in the universality, spontaneity, and evolutionary fitness value of reciprocity behavior. Reciprocity in human nature (and prominently in our closest primate relative, the chimpanzee) is the foundation of our uniqueness as creatures of social exchange, which we extended to include trade with nonkin and nontribal members long, long before we adopted herder and farmer life styles. (p. 3)

And while in 1998 Vernon Smith gives evolutionary and experimental evidence ‘that trade can be hypothesized to have grown out of social or gift exchange’ (p. 5) , the previous year Jeffrey Young (1997) interprets Adam Smith as saying exactly the same thing, as Ashraf, Camerer and Loewenstein 2005 recognize. Vernon Smith states that

the key to understanding our long ‘propensity to truck, barter, and exchange’ is to be found, I think, in our evolved capacity for reciprocity, which formed the foundation for social exchange long before there was trade in the conventional economic sense. All humans, in all cultures, engage in the trading of favors. Although the cultural forms of reciprocity are endlessly variable, functionally reciprocity is universal. We do beneficial things for our friends, and implicitly we expect beneficial acts in kind from them. ... You invite me to dinner and two months later I invite you to dinner. (p. 4)

Jeffrey Young offers the argument he believes ‘[Adam] Smith would have made, to explain why voluntarily exchange emerges and why he viewed markets as essentially benign social institutions’ in the following way.

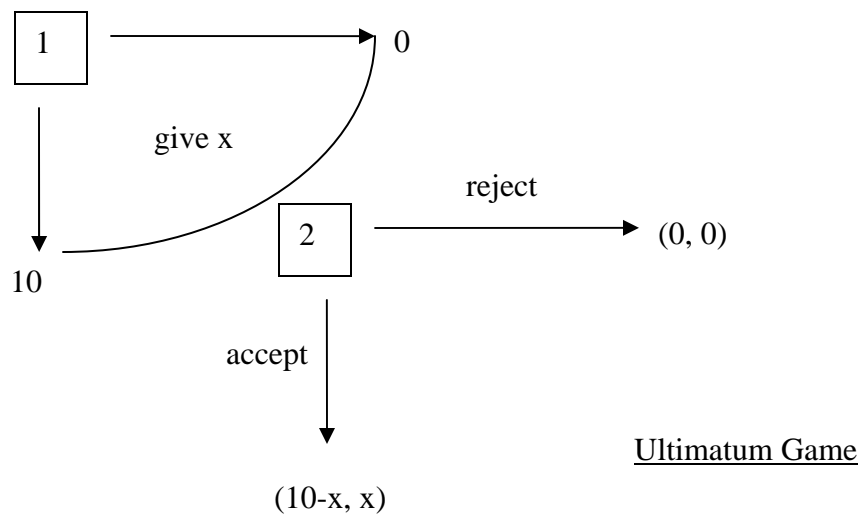
Market exchange is a social activity which depends for its origin on each person wanting both fellow-feeling and material goods. The other-regarding principles of human nature which binds people together in society are a necessary condition for the emergence of the exchange of surplus produce among neighbors. [Adam] Smith uses the moral side of human nature to help explain why voluntarily agreement and not violence takes place when these two hunters meet. Anti-social manifestations of self-love are ruled out on the ground that the offending individual would lose the concord of feeling which is agreeable in its own right. However, he would also lose the approbation of his neighbors (represented internally as the impartial spectator even when he is alone out in the woods) a prospect which is also disagreeable in itself, because of his human desire to be approved of. As a result he will eventually



lose his dinner since the neighbors will cease bringing him gifts and/or no one will trade with him. No one would want to have the reputation of being ungrateful, that is, one who does not reciprocate gifts. (p. 62)

Both Vernon Smith and Adam Smith, as here interpreted by Young, present the relevance of reciprocity, both positive and negative. Positive reciprocity is present when someone reciprocates a cooperative action with a cooperative action. Negative reciprocity is instead the willingness and ability to punish non-cooperation in a social exchange. In social exchanges, the (impartial) spectator withdraws his approbation if one does not cooperate, just like our neighbor withdraws his invitation for dinner if we are caught free-riding.

The relevance of negative reciprocity is also highlighted by what Adam Smith calls resentment, an emotion whose manifestation is captured in an experimental game known as the Ultimatum Game. In this game there are two human players, usually, but not always, undergraduate students. As in all economics experiments, subjects voluntarily come to the experiments and are paid in local currency the amount they earn by playing the experimental game. They read the instructions of the game and make their decisions either on sheets of paper or on computer terminals. For each experiment, the number of total participants is chosen so that the experimenter has enough observations to statistically analyze the results. In the standard Ultimatum Game players' anonymity is strictly preserved. Player 1 (Sender) receives an amount of dollars (usually \$10 for undergraduate students in the US) and is asked to send any of those dollars to Player 2 (Receiver). Should the Receiver accept the Sender's offer, the \$10 are divided according to the terms of the offer. If the Receiver rejects the offer, both the Receiver and the Sender do not earn anything.



The Rational Choice prediction is a sub-game perfect Nash equilibrium where Player 1 gives as little as possible and Player 2 accepts any amount.

When this game is played in experiments, the results persistently do not match the Rational-Choice prediction. Even when conditions and payoffs are changed, subjects tend to split the amount 50/50 and tend to reject offers that are less than 50 percent (Guth and Tietz 1990; Roth et al. 1991; Camerer and Thaler 1995). So the question is: Why? Why human subjects do not behave like Homo Economicus?

The explanation usually offered is a combination of two factors: fairness and strategic behavior due to fear of rejection. Fair behavior under these conditions for U.S. undergraduates is a 50/50 split. An offer of less than that may be rejected because it is perceived as unfair. Senders know this and decrease the risk of being punished by offering 50 percent of the pie. Thus, Rational Choice theory may explain why Senders send 50 percent. But what about the Receiver's rejections? These are one-shot games, so punishment with the aim of influencing future behavior is not an option.

Receivers who reject offers, when asked, tend to explain their behavior by saying that they wanted to punish unfair behavior. Unfair Senders deserve to be punished, even at a personal cost. Indeed, if the Sender is a computer rather than a person, low offers are rarely rejected (Blount 1995). Such results suggest that Homo Economicus does not work well as an exclusive explanatory device.

Data from Trust (or “gift exchange”) Games mirror these results. Here, Player 1 can either keep a fixed sum of money or send part of it to Player 2, who will receive the amount sent multiplied by a predetermined factor. Player 2 can then take all of what s/he received and leave Player 1 with nothing, or send back some of the money. The Rational Choice prediction here is that Player 2 takes all that is sent to her/him and sends nothing back to Player 1. Because Player 1 is able to anticipate Player 2’s behavior, s/he initially sends nothing. Despite this prediction, a surprising amount of trust is usually observed, and the ‘returns to trust’ tend to be positive (Fehr, Kirchsteiger and Reidl 1993, Berg, Dickhaut and McCabe 1995).

Reciprocity seems to be a plausible explanation for these ‘counter-intuitive’ results. One rewards what is perceived as fair and kind, and one punishes what is perceived as a mean and intentional violation of fairness, even if punishment involves incurring a direct personal cost. Colin Camerer (1997) reminds us that formal models of these results are possible with the use of a utility function with “sympathy coefficients” [which] were mentioned in Adam Smith’ (p. 169) (see also Rabin 1993). The recognition of Adam Smith is not just nominal.

Adam Smith indeed seems to provide explanations for why we tend to reject unfair offers in the Ultimatum Game if those offers come from another human player, for why we tend to accept low offers if they come from chance or from a machine, and for why we send

money back in a Trust Game. We resent Player 1 in an Ultimatum Game if s/he does not split fairly the amount s/he receives, and we punish her/him as a consequence. We are grateful to Player 1 in a Trust Game, and we reciprocate the trust by sending some money back to her/him. But we do not think that a computer trusted us or was unfairly greedy toward us, so there is no need to reciprocate either positively or negatively. In Adam Smith's words:

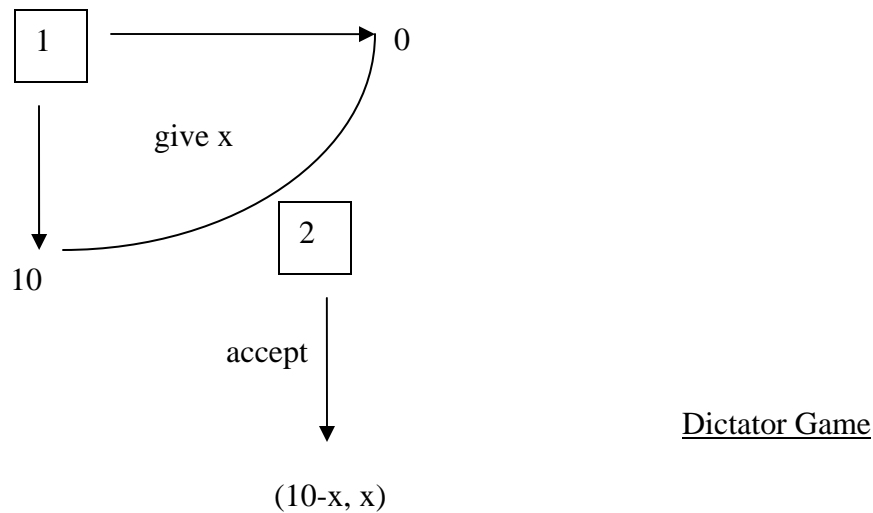
Before any thing, therefore, can be the complete and proper object, either of gratitude or resentment, it must possess three different qualifications. First, it must be the cause of pleasure in the one case, and of pain in the other. Secondly, it must be capable of feeling those sensations. And, thirdly, it must not only have produced those sensations, but it must have produced them from design, and from a design that is approved of in the one case, and disapproved of in the other. It is by the first qualification, that any object is capable of exciting those passions: it is by the second, that it is in any respect capable of gratifying them: the third qualification is not only necessary for their complete satisfaction, but as it gives a pleasure or pain that is both exquisite and peculiar, it is likewise an additional exciting cause of those passions.

(TMS II.iii.1.6)

From the results of the Ultimatum Game, one can hypothesize that a Receiver punishes out of resentment and that a Sender sends out of fear of that resented punishment. But is that the end of the story? The answer is no. Experimentalists are aware that the design of the Ultimatum Game does not allow us to clearly infer the motivations of the Sender. One cannot completely discharge either fairness or strategic motivations. One can say that

the self-regarding Sender gives to the Receiver because s/he does not want to be hated and punished. But one can also say that the other-regarding Sender gives to the Receiver because it is fair to do so. Do I give money to the beggar because I fear being attacked if I do not, or because I feel it is the right thing for me to do?

Experimentalists designed another experiment to control for the Sender's strategic behavior and isolate fairness. This game is a modified Ultimatum Game, where the Receiver's ability to retaliate against an unfair Sender is eliminated and it is known as the Dictator Game. In the Dictator Game, the Sender (Dictator) faces the same choice as in the Ultimatum Game: choose how much of the money given to her/him to send to her/his anonymously paired Receiver. But here, the Receiver cannot reject the offer of the Sender. The Receiver must take what the Dictator sends without any possibility of revenge. Thus, the game's dynamics imply that the choice of the Sender will not be motivated by strategic behavior intended to decrease the risk of rejection. If a Sender sends a positive amount to the Receiver, s/he would be motivated only by other-regarding preferences. Given that there is no cost associated with this self-regarding action, the Rational-Choice prediction is that the Dictator keeps everything and sends nothing.



But the experimental results of this game also do not conform with the Rational Choice prediction. 20-30 percent of the Senders give 50 percent, while 30 percent of the Senders take the whole pot (Roth et al. 1991, Forsythe et al. 1994, Henrich et al. 2004). The average giving is around 30 percent, significantly more than the Rational Choice prediction of zero. Although it is true that we do observe more aggressive low offers, which indicates that the fear of rejection does play a role in the giving of the Ultimatum Game, we also observe that strategic behavior is not the whole story. Some fairness is present in these results.

Adam Smith, again, provides us a plausible explanation. Adam Smith would say that resentment does not come only from the actual Player 2, or more generally from another person. Resentment comes also from the impartial ‘inhabitant of our breast’, from ‘the man within’ us. Indeed Adam Smith writes:

There can be no proper motive for hurting our neighbour, there can be no incitement to do evil to another, which mankind will go along with, except just indignation for evil which that other has done to us. To disturb his happiness merely because it stands in the way of our own, to take from him what is of real use to him merely because it may be of equal or of more use to us, or to indulge, in this manner, at the expence of other people, the natural preference which every man has for his own happiness above that of other people, is what no impartial spectator can go along with. ... Though it may be true, therefore, that every individual, in his own breast, naturally prefers himself to all mankind, yet he dares not look mankind in the face, and avow that he acts according to this principle. ... If he would act so as that the impartial spectator may enter into the principles of his conduct, which is what of all things he has the greatest desire to do, he must, upon this, as upon all other occasions, humble the arrogance of his self-love, and bring it down to something which other men can go along with. ... [The impartial spectator] readily, therefore, sympathize[s] with the natural resentment of the injured, and the offender becomes the object of [the impartial spectator's] hatred and indignation. He is sensible that he becomes so, and feels that those sentiments are ready to burst out from all sides against him. (TMS II.II.11)

So for Adam Smith we do not 'indulge...at the expence of other people' not just because we fear their resentment but because we fear the resentment of the impartial spectator who voices from within us what is right and what is wrong.

The positive consequences of this self-directed resentment are described by Young 2005:

Smith defines the laws of justice as those that guard a person against injury in the form of loss of life, health, possessions, estate, or personal rights (TMS, II.ii.2.2). Such injuries arouse the resentment of the impartial spectator and cause him to sympathize with the victim's desire for revenge. The sense of justice arises out of the unsocial passions: 'Resentment...is the safeguard of justice and the security of innocence' II.ii.1.4. (p. 95)

Adam Smith goes further in the analysis. He distinguishes between an action that is meant to generate a payoff from another person, and an action with no external payoff. Smith refers to payoffs in terms of approbation, not in terms of monetary payoffs as we observe in experimental games. Yet, I believe his argument is strengthened, not weakened, by a monetary component. Adam Smith distinguishes between our willingness to be praised and to avoid blame—to receive a positive or negative payoff from another person, even if in terms of approbation or disapprobation—and our willingness to be praiseworthy and not to be blameworthy—to do the right thing even if there is nobody there to praise or blame us. He claims that we do the right thing, even in the absence of a threat of punishment from another person, because not only we love praise and dread blame, but we also love praiseworthiness and dread blameworthiness.

Man naturally desires, not only to be loved, but to be lovely; or to be that thing which is the natural and proper object of love. He naturally dreads, not only to be hated, but to be hateful; or to be that thing which is the natural and proper object of hatred. He desires, not only praise, but praise-worthiness; or to be that thing which,



though it should be praised by nobody, is, however, the natural and proper object of praise. He dreads, not only blame, but blame-worthiness; or to be that thing which, though it should be blamed by nobody, is, however, the natural and proper object of blame. (TMS III.2.1, p. 113-4).

The resentment of ‘the man within’ which makes an ‘offender’ the ‘object of hatred and indignation’ in the eyes of his conscience, and eventually generates justice in society, seems to be a plausible explanation for the Sender’s giving which is observed in the experimental settings described above.

Adam Smith’s analysis of the difference between praise and praiseworthiness offers us an additional point of reflection. Adam Smith seems to warn us against attempts to dress up explanations of self-regarding preferences as other-regarding behaviors when he says:

The love of praise-worthiness is by no means derived altogether from the love of praise. These two principles, though they resemble one another, though they are connected, and often blended with one another, are yet, in many respects, distinct and independent of one another. (TMS III.2.2, p. 114)

The fairness observed in the experimental results may indeed have little to do with self-regarding preferences. Herbert Gintis, Samuel Bowles, Robert Boyd, and Ernst Fehr, who begin their 2005 book stating that, ‘The ideas presented in this book are part of a continuous line of intellectual inheritance from Adam Smith...’ (p. 3), say indeed that,

if altruism is actually misapplied self-interest, we might expect altruistic behavior to be driven out of existence by consistently self-regarding individuals in the long run. If these arguments are correct, it would likely lead to the collapse of the sophisticated forms of cooperation that have arisen in civilized societies. ... Moreover, the alternative suggests that agents can use their intellect to “learn” to behave selfishly when confronted with the results of their suboptimal behavior. The evidence, however, suggests that cooperation based on strong reciprocity can unravel when there is no means of punishing free-riders but that it does not unravel simply through repetition. (p. 25-26)

Furthermore, some contributions in their volume set out to demonstrate that:

Strong reciprocity evolved because groups with strong reciprocators were capable of stabilizing prosocial norms that could not be supported using principles of long-term self-interest alone, because it is generally fitness-enhancing for an individual to punish only transgressions against the individual himself, and then only if the time horizon is sufficiently lengthy to render a reputation for protecting one’s interests. On the other hand, the same mechanisms that have the ability to enforce prosocial norms can almost as easily enforce fitness-neutral and antisocial norms. (p. 30)

To one familiar with the work of Adam Smith, these results should not be surprising. Levy 1992 notices that, although we observe Rational Choice utility-maximizing behavior in experiments with animal subjects, we do not observe the more complex forms of cooperation more typical of human societies such as ‘fair and deliberate exchange’ (WN

I.ii). We need more than just self-regarding preferences, as Adam Smith recognized. Young (2001) indeed notes that ‘the modern procedure of attempting to derive cooperation from the self-interest assumption alone is [not] a faithful representation of the way Smith actually thought about the problem. ... Smith’s theory is rooted in those characteristics of human nature which are on the benevolence side of the moral continuum. ...[In Smith there is] interdependence into each individual’s utility function via the other-regarding impulses in human nature’ (p. 99).

Given that complex forms of cooperation are distinctly human and are not easily explained with only self-regarding preferences, the question posed by Jerry Evensky becomes more salient: ‘How does a society of autonomous individuals cohere?’ (2001, p. 508). Or again: ‘What cohesive force can hold liberal society together so that its potential—a good, secure life for each individual and the greatest possible wealth for the nation—can be realized? ... How can a liberal society avoid the Hobbesian abyss of a war of all against all? How is *e pluribus unum* possible?’ (2005 p. 248-250). Evensky, showing that Homo Economicus theories are not strong enough to keep society from disruption, makes the following claim:

In sum, if a liberal society is to be cohesive and constructive, human beings must have “mutual trust and confidence in the behavioral ethics of each other” because absent ethics, rent-seeking can run amuck. A society populated by *homo economicus* does not have the capacity to establish this prerequisite for social cohesion (2005, p. 253).

The presence of something more than just Homo Economicus, as Adam Smith tells us, and the risks of having models of human behavior featuring only Homo Economicus, as Evensky tells us, is also presented by Elinor Ostrom, in one of the essays contained in Gintis et al. (2005). Ostrom, presenting evidence from Public Goods games, claims:

Voluntary behavior is the result of what we have called the predisposition to contribute to a cooperative endeavor, contingent upon the cooperation of others. The monetary incentive to contribute destroys the cooperative nature of the task, and the threat of fining defectors may be perceived as being an unkind or hostile action (especially if the fine is imposed by agents who have an antagonistic relationship with group members). The crowding out of voluntary cooperation and altruistic punishment occurs because the preconditions for the operation of strong reciprocity are removed when explicit material incentives are applied to the task. (p. 20)

A final point can be addressed to further show how Adam Smith can be used in the experimental literature. While Evensky attributes to Smith the notion that 'Human nature is constant (we are not 'better' than our predecessors), but human character evolves along with human institutions' (2001, p. 504), experimental results show that the predisposition to cooperate may be universal, but what is recognized as appropriate locus for cooperation varies with time and place. That is to say, as Smith does, that norms of fairness and nature of punishment vary with cultures.

In 2000, Joseph Henrich started a series of field experiments across the globe using members of small-scale societies with a broad variety of economic and cultural conditions as

subjects. His results, and the results of his colleagues, are different from the homogeneous results of industrialized countries (Henrich et al. 2004). Fairness seems to vary cross-culturally. The modal Ultimatum Game offers from the sample of the 15 foraging societies studied ranged from 15 to 50 percent; what is most interesting is that rejection rates are much lower than those observed with undergraduate students. Trying to control for possible explanatory variables, Henrich et al. found that two variables account for a significant part (47 percent) of the variation between groups. These variables are 'market integration' (that is, do people engage frequently in market exchange?) and 'cooperation in production' (that is, what are the potential benefits to cooperative as opposed to solitary or family based productive activities?). The higher the level of market integration, the higher the level of cooperation and sharing in the experimental games.

One study included in Henrich et al. 2004 deserves particular attention. Jean Ensminger ran Ultimatum, Dictator and Public Goods experiments in the Orma society in East Africa. Her results stray widely from what is observed in industrialized countries. She offers the following explanation:

Both cognitive and psychological explanations can help us understand how even self-interested individuals could exhibit fairness in one-shot games and also how behavior designed primarily to promote reputation could emerge there. But it is quite likely that something more profound is surfacing in these data that points to the internalization of fairness norms in more market-oriented societies. Such internalization would require that fairness is learned in the course of the market exchange and we have evidence that this is the case across the development of life cycle. Camerer and Thaler (1995) agree that norms of fairness are learned, noting

that kindergarteners are most selfish in economic experiments, while by the sixth grade, more fair behavior towards one's peers emerges (p. 358).

And while Ensminger looks at Hirschman 1982 for an historical explanation of the effects of commerce on civil society, Paganelli (2007) points her finger to Adam Smith and his scholarship. Adam Smith describes the civilizing effects of commerce in many ways. One, famously recognized by Rosenberg (1990) and Rasmussen (2005), is that the introduction of commerce and manufacture brings along 'order and good government, and with them, the liberty and security of individuals ... This, though it has been the least observed, is by far the most important of all their effect' (WN III.iv.4, p. 412). The 'regular administration of justice' is generated by commerce and is the foundation of commercial prosperity. Young (1992) also points to some of the civilizing effects of commerce described by Smith: the practice of abandoning unwanted children decreases with the increase in wealth brought about by commerce, and honesty increases with the decrease of dependency and the increase of interdependency brought about by commerce. In Smith's words, as cited in Young (p. 80) 'Nothing tends so much to corrupt mankind as dependency, while interdependency still increases the honesty of the people. The establishment of commerce and manufactures, which brings about this interdependency, is the best police for preventing crimes [3: LJ(B), 205; WN III.iv.4]'.

To conclude, I would like to call attention to what Ashraf et al. say about Smith's TMS: 'Adam Smith's *Theory of Moral Sentiments* is not only packed with insights that presage developments in contemporary behavioral economics, but also with promising leads that have yet to be pursued' (p. 140). The richness of Adam Smith indeed is proving to be a

powerful tool for explaining and understanding some otherwise puzzling results of economic experiments. Adam Smith is increasingly being read by experimental, behavioral and neuro-economists. He still has a lot to offer all of us.

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