

Monetary Calculation and the Extension of Social Cooperation into Anonymity

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Abstract

Both economists and evolutionary psychologists have addressed recently the question of how humans come to trust anonymous others. However, the idea of monetary calculation, as articulated by Ludwig von Mises and other Austrian school economists, is missing from their accounts. Game theory and evolutionary psychology might tell us why we trade *at all* with anonymous others, but monetary calculation is needed to explain how we decide *which* trades to make. When actors can know which trades are more likely to be mutually beneficial, anonymous trade is more likely to occur and is better able to extend social cooperation.

I. Introduction

Though written almost two hundred years apart, Adam Smith's *The Wealth of Nations* (1776 [1776]) and Ludwig von Mises' *Human Action* (1966 [1949]) are arguably two of the most important works in economics. Both address very similar themes. Aside from their roles in the forwarding of classical liberalism, they also represent major steps forward in our theoretical understanding of the operation of the market. One common theme that pervades both books is their emphasis on the role markets play in fostering what we might call "social cooperation." At its most basic level, Adam Smith's discussion of the invisible hand, and the ways in which self-interest generates beneficial unintended consequences, demonstrates how market interactions allow us to cooperate with one another in mutually beneficial ways, even if that cooperation is, as noted, unintended. This same idea is developed much further by Mises, particularly in his discussion of what he calls "Ricardo's Law of

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Association.” The key difference between the two is that Mises’ analysis is informed by two other ideas: the development of marginalist thinking by Menger and others, and Mises’ own work on the centrality of monetary calculation and entrepreneurship.

The concept of monetary calculation helps to explain a puzzle that is raised by the burgeoning discipline of evolutionary psychology when it turns to explain the modern world. Evolutionary psychology tries to explain human behavior by reference to the ways in which the human brain evolved in prehistoric times.¹ That is, much of how we behave today has to be understood in terms of our making use of a brain that evolved under very different social circumstances. Of specific interest to this paper is the question of how it is possible that we can thrive in a world that requires cooperation and coordination in anonymity when our brains were formed in a world where virtually all interaction with others was face-to-face. The social orders of the modern world are largely anonymous, in that we interact with and depend on millions of other people who are known to us only in terms of what they do, not who they are.

Vernon Smith (1998) raised this issue in the context of “Das Adam Smith Problem” of reconciling the other-regarding humans of *The Theory of Moral Sentiments* with the self-regarding humans of *The Wealth of Nations*. Vernon Smith argued that we are “hardwired” to be reciprocal toward those we know personally, but self-interested toward those who we do not know. The result is that people are other-regarding in personal exchange, but self-regarding in the anonymity of the market. Leeson (2005) offers an alternative explanation for the same observed phenomena by focusing on the ways in which rational actors can overcome their short-run interest to defect in trust games by realizing the long-run benefits of social cooperation; he explicitly mentions Mises’s discussion of Ricardo’s “Law of Association” in this context. Rational and enlightened self-interest explains our willingness to trust others in both situations.

This question has also been treated at length in Paul Seabright’s 2004 book *The Company of Strangers*. Seabright (2004, p.8) usefully summarizes this puzzle by asking what makes us “willing to treat

¹ The literature on evolutionary psychology is vast, but two valuable collections are Barkow, Cosmides, and Tooby (1995) and Buss (2005). Three sources of particular interest to economists would be Tooby and Cosmides’ introductory essay in Buss (2005), Cosmides and Tooby (1994), and the contributions in Vol. 7 of *Advances in Austrian Economics*, especially the introduction by Koppl (2004).

strangers as honorary friends?” Seabright (2004, p.27) suggests that two factors are key to answering this question: our “capacity for rational calculation of the costs and benefits of cooperation, and a tendency for what has been called *reciprocity*.” Seabright’s answer parallels that of Vernon Smith and Leeson.

However, Seabright, Vernon Smith, and Leeson (and evolutionary psychology more generally) do not provide any real discussion of the ways in which the use of money and the emergence of money prices are the key factors that facilitate the rational calculation necessary for cooperation in anonymity. In what follows, I bring together Adam Smith and Mises to demonstrate the ways in which monetary calculation is the central institution for the extension of social cooperation into anonymity. In doing so, I also hope to provide more thorough “microfoundations” for the core arguments of Vernon Smith, Leeson, and Seabright, and, by implication, other evolutionary psychological approaches to the same issues.

II. Adam Smith and Ludwig von Mises on Social Cooperation and Economic Calculation

Adam Smith’s discussion of the division of labor in the first few chapters of *The Wealth of Nations* is rightly regarded as groundbreaking in our understanding of the market process. However, another aspect of Adam Smith’s argument in those early pages deserves more attention than it sometimes gets. For Adam Smith, the division of labor helps to generate a broader process of social cooperation in which individuals are led to provide for one another on the basis of self-interest in a world of anonymity. Market exchange widens the network of individuals on whom any particular individual relies for obtaining goods and services.

Adam Smith (1976 [1776], p.18) notes that individuals need to rely on numerous other people to survive and thrive. One way in which we attempt to get others to provide us with what we want is through verbal persuasion. Although such attempts at persuasion can sometimes be effective, they are also very time-consuming; it simply is not possible for any given person to come into the direct contact necessary for verbal persuasion with all of those people he or she would need to rely on. In addition, because we can only get to know a limited number of people during our lifetimes, we do not know very much about most of the individuals with whom we must interact from day to day. One consequence of this anonymity is that if we had

to rely on verbal persuasion to get others to cooperate with us, it would be very difficult, as we would not know them well enough to know what to say in order to entice their cooperation. If social cooperation is finding out what others want and providing them with it, direct verbal persuasion can only go so far in anonymous social orders.

The famous passage (Smith, (1976 [1776], p.18) about it not being due to the kindness of the butcher, baker, and brewer that we get our daily meal, but from their self-love, offers an alternative way of conceptualizing the nature of social cooperation in anonymous social orders. What market exchange does is to allow mutual self-interest to produce social advantage. Toward the end of the previous chapter, Adam Smith (p.16) discusses the production of a wool coat and the “thousands” of hands it takes to make one when we really consider all who directly or indirectly contribute to its production. His point there is to note just how wide and deep the anonymous social cooperation of the market extends.

Despite the importance of his vision, Adam Smith never completely explained the process by which self-interest is translated into public benefit. To the extent that he attempted to do so, by exploring what today we might call the “microfoundations” of social cooperation, he was limited by his cost-of-production theory of value. It was not until the early 20th century and Ludwig von Mises’ work on economic calculation that this argument could be fully realized.

Mises’ most well-known contribution to the theory of economic calculation is probably his 1920 essay on economic calculation under socialism. There he argued that in the absence of private ownership of the means of production, individuals had no way to ascertain the value of those means of production, and therefore society had no way to judge whether it was using resources rationally or efficiently. Because it could not make such judgments, a society lacking the private ownership of capital would be unable to sustain itself economically. The key to Mises’ argument was that market prices are necessary for making the comparative judgments needed to determine whether resources were being used effectively. The only way market prices can emerge is through exchange, and exchange can only happen where resources are privately owned. In the 1920 article, and subsequent discussion in *Socialism* in 1922, Mises did not

elaborate this process of economic calculation in any great depth. However, he did so in *Human Action* in 1949.

Mises' more thorough discussion of economic calculation begins with a distinction between technological knowledge and economic knowledge. He (1966, p.206) points out that technological knowledge would be sufficient for economic calculation if either one of two conditions were true: that all factors of production (human and otherwise) were either perfectly substitutable for one another or perfectly specific to a particular production task. If all inputs were perfectly substitutable, it would not matter which were used for what task, as all could be applied without an opportunity cost. By contrast, if all inputs were perfectly specific, each input could only be devoted to one production process, and thus there would be no choice to be made, thus, again, no need for economic calculation. In the world we inhabit, the vast majority of inputs are partially substitutable for one another and specific to a range of tasks, though not to all. In a world so described, we must choose among the production techniques that are technologically possible to find the one that is *economically* most rational (Mises, 1966, p.207). Economic calculation is the art of picking the economically efficient mode of production from among the technologically feasible.

As stated at the outset of this section, economic calculation can only take place where there is exchange of private property that will generate prices. It is worth noting that these prices must be prices *reckoned in terms of money*. As part of the emergence of market exchange, a generally accepted medium of exchange will evolve out of those exchanges.² Once money emerges, (virtually) all exchanges will be conducted making use of it. The result is that all prices are in terms of the medium of exchange. Having one money price for each good makes economic calculation possible. Now, the market value of every good can be compared with every other, and unambiguous measures of profit and loss can be obtained. Economic calculation is now "monetary calculation."³

When acting in the market, entrepreneurs profit from the differential between the prices they have to pay for inputs now and the prices they expect to receive for the finished product at the end of the production process (discounting for the passage of time). To

² See Menger (1892) for the original Austrian statement and Mises' (1980 [1912]) own treatment of these issues for more.

³ For more on the role of money in economic calculation, see Horwitz (1998).

engage in this intertemporal arbitrage, entrepreneurs and their designates must engage in monetary calculation. The key to this process is what Mises (1966, p.332) calls “appraisement.” The entrepreneur must anticipate what the prices of the future will be, and this means appraising the possible actions of others and the conditions of the market to better anticipate those prices than do other entrepreneurs. Importantly, this process of appraisement and calculation is not a mechanical extrapolation from the current state of the market. Mises (1966, p.336) explicitly argues that, “The prices of the past do not influence the determination of future prices. It is, on the contrary, the anticipation of future prices of the products that determines the state of prices of the complementary factors of production.” By this Mises means that the appraisement process determines how valuable are the current factors of production that will contribute to the future output. The current price of a machine is “determined” by how valuable entrepreneurs think its products will be.

This ability to make use of information provided through the surrogacy of market prices enables entrepreneurs to calculate more effectively than otherwise. Prices serve as surrogates for the subjective knowledge and preferences of market actors and enable producers to more finely tune their activities to the wants of the market. The nexus of market prices and monetary calculation helps to channel the self-interest of butchers, bakers, and brewers into providing us with our daily meals.

III. Monetary Calculation, Competition, and Social Cooperation

Bringing Mises’s discussion of monetary calculation back to Adam Smith’s original description of the social cooperation the market makes possible, we can see the connections between the two. If by social cooperation we mean the ability of individuals to meet each other’s wants despite the anonymity of the extended order of the Great Society, then economic calculation through the use of money prices is the process by which such cooperation is effected. Adam Smith recognized the process at work, but lacked the tools to explain it that were available to Mises.

Mises also takes the Smithian argument one step further by suggesting a generalization of Ricardo’s description of the international trading process, which he saw as driven by

specialization by comparative advantage followed by exchange. For Ricardo and other 19th century liberals, there was a clear link between free trade by comparative advantage and a regime of international peace. Nations that traded with one another would become interdependent and thus be led to remain in peaceful cooperation with one another. Mises (1966, p.159ff) saw that this principle, which he called “Ricardo’s Law of Association,” could be generalized to all market exchange. As economic activity evolves and specialization and exchange among individuals increase, “human action itself tends towards cooperation and association; man becomes a social being not in sacrificing his own concerns for a mythical Moloch, society, but in aiming at an improvement in his own welfare” (1966, p.160).⁴ The division of labor by comparative advantage, and the exchange of what then gets produced, creates the same sort of interdependency and cooperation among individuals as it does across nations. For Mises, this relationship between specialization and cooperation is made possible by monetary calculation, as it is only by that process that individuals can know best what others want.

Mises’ description of this process as “cooperative” might seem to fly in the face of the conventional description of markets as “competitive.” To many, competition and cooperation are opposites; where competition reigns, cooperation is absent. In the vision of the market we find in both Adam Smith and Mises, this dichotomy between competition and cooperation is shown to be false. In fact, the *competition* among producers makes possible the resulting social *cooperation* we see in the Great Society. Adam Smith’s example of the number of hands involved in making a wool coat nicely illustrates this relationship. To produce the coat, thousands of people must cooperate via the market. At the same time, those very same producers are also in competition to best serve their immediate market. And this competition is, in turn, made possible by the existence of market institutions, private property, exchange, and the process of economic calculation. As Mises (1966, p.338) puts it:

Competing in cooperation and cooperating in competition all people are instrumental in bringing about the result, viz., the price structure of the market, the allocation of the factors of

⁴ Passages like this in Mises are the source of Leeson’s (2005) argument that Mises believed we could rationally see the advantages of cooperation and would therefore cooperate.

production to the various lines of want-satisfaction, and the determination of the share of each individual.

Competition and cooperation are two sides of the same process that determines market prices, resource allocation, and incomes.

IV. Calculation, Property Rights, and the Extension of Social Trust Via Globalization

As noted at the outset, both Seabright and Leeson have argued that the keys to the extension of social trust into a world of anonymous actors have been our ability to calculate the costs and benefits of cooperation as well as our tendency toward reciprocity as a way of interacting with others. As Seabright puts it, how is it that we quite willingly trust strangers in ways that our prehistoric ancestors would have seen as incredibly dangerous? Why do we let strangers in our home if they wear the “right” uniform, or why are we willing to engage in any sort of credit transaction with people who we do not even know and perhaps only interact with through machines? The arguments made by Seabright and Leeson are correct as far as they go, but the discussion of Adam Smith and Mises above suggests that we can say more about both our calculative abilities and the role of reciprocity. The key missing connection is that between property rights and monetary calculation.

Seabright (2004, p.65) recognizes the role of property rights in extending social trust:

Of the impersonal institutions that have enabled this gradual integration of local cultures of trust into a wider culture governing relations between strangers, none has been more central to the process than the institution of property rights.... Without the assurance that the resources you theoretically own now will be protected from marauders until the time comes for you to repay me, no amount of trust in your good intentions may induce me to be generous to you today.

Part of our willingness to trust strangers is that we know that supra-individual institutions are in place that provide an incentive for anonymous others to treat us well and to punish those who do not. These rewards and punishments need not be thought of in terms of

enforcement methods that are external to the situation at hand. For example, property rights mean that individuals and organizations have self-interested reasons to protect their reputations as one's reputation becomes an asset to one's ability to interact economically with others. Individuals or firms who regularly exploit others in trust situations, especially those that are "one off" interactions, will find that their reputations suffer, imposing costs on them that may well exceed the one-time gains of breaking trust. Getting a reputation for not paying one's debts has long been one of the most difficult stigmas to overcome. Property rights make it possible to capture the benefits of engaging in reciprocal behavior and enable those who do not to be penalized. The result is that reciprocity increases and trust is spread. And as Leeson (2005) argues, the spreading of that reciprocity and trust will enhance overall economic well-being via the extension of social cooperation under the division of labor (i.e., the Law of Association). If actors recognize those benefits (and Leeson and Mises assume they do, or at least can), then they will trust strangers.

As important as the link between property rights and reciprocity is, neither Seabright nor Leeson make the connection between property rights and monetary calculation. If, as Adam Smith argues, a world of anonymity requires that we use exchange to get others to act in ways that benefit us, then for exchange to be feasible as a method of social coordination, individuals and organizations must have secure and enforceable rights to their property. Without such well-defined and enforced property rights, the incentive to exchange will be very small. By enabling exchange, property rights also create the conditions for monetary calculation, and the ability to calculate ahead of time what might or might not benefit others truly begins to spread trust and cooperation into a world of anonymous others. Exchange is the key to turning strangers into "honorary friends" by creating reciprocal interdependence. As Hayek (1977, p.108) pointed out, the Greek word for "exchange" also meant "to admit into the community" and "to change from enemy into friend."

Having the incentive to engage in exchange and other forms of reciprocal behavior because the gains from doing so, and the losses from violating reciprocity, can be internalized is necessary but not sufficient to generate widespread social cooperation because merely having the incentive does not tell us *what* sorts of actions would best promote such cooperation. It is true, as Leeson argues, that if we

rationally recognize the benefits of the extension of exchange and the division of labor, we will be more likely to cooperate and trust. However, recognizing the generalized benefits of exchange cannot help us in specific circumstances in knowing *what* to exchange and if that particular exchange is likely to be welfare-enhancing. For anonymous market actors to learn to trust each other through exchange, they need to know that their exchange behavior is likely to be beneficial. Monetary calculation provides that knowledge. The generalized benefits of exchange may provide a generalized incentive to trust anonymous others, but it alone cannot guide the specific acts of exchange that actually generate those benefits.

Where property rights enable exchange, we see the gradual development of money and the emergence of money prices and monetary calculation. Money itself becomes the symbol of this expanding social trust as we begin to gladly trade goods and services for mere pieces of paper. Trading goods for goods with anonymous others requires particular acts of trust in strangers, but accepting intrinsically worthless paper in exchange for physical goods requires trust in both anonymous others in general, and the institution of money in particular. We too often take for granted the ways in which the ubiquitous use of money rests on an immense amount of social trust and cooperation, yet none of the benefits of exchange with strangers that characterize modern society would be possible without it. As Seabright (2004, p.75) notes, we have yet to find a better way of “mediating the exchange of inscrutibles between strangers” than through money.

This process by which economic cooperation and social trust is spread to strangers via exchange and monetary calculation has often been identified by its proponents and opponents in our own time as “globalization.” Property rights and monetary calculation first enabled the network of social cooperation and trust to extend beyond kin to strangers in the nearby geographic area. As the costs of transportation and communication began to fall hundreds of years ago, that geographic area expanded, particularly with the opening of trade routes to the Americas. However, not until the last decade or two did those costs fall sufficiently to truly speak of a global network of social cooperation.

In this century, no longer are the strangers who we treat as “honorary friends” just those who share with us a geographic area or a nation-state. The decline in the costs of communication and

transportation along with the fall of economic regimes hostile to property rights and exchange have opened the globe to the extension of social trust and cooperation even as those with whom we cooperate are increasingly anonymous to us. Although this cooperation may still be dismissed for not being of the intentional sort that critics of markets would prefer, there is no doubt that it has brought people from all over the world into networks of social cooperation and trust in ways never before possible.⁵ This global cooperation was made possible by the extension of property rights, exchange, and monetary calculation to places they had not previously been meaningfully present. The degree to which markets spread such cooperation and trust across the globe is also the degree to which strangers become honorary friends. With human history being plagued over and over again with death and destruction because predation made more sense than cooperation among strangers, any process that induces cooperation in anonymity and turns potential enemies into honorary friends is to be lauded.

Unfortunately, the very mechanism that enables the spreading of this trust and social cooperation, the extension of monetary calculation, is often the very thing that opponents of globalization attack first. The argument is that the increased “commodification” and “monetization” of developing countries is responsible for the demise of traditional institutions and norms, and the undermining of communities in the process. The critics are correct in this point, but they frequently fail to recognize the benefits that this same process creates in turning strangers into “honorary friends.” By bringing previously isolated communities into the network of monetary calculation, social trust and cooperation in anonymity, the expansion of global trade helps turn enemies into friends and, in a meaningful way, expands the sphere of community even as it replaces older practices and norms. Given the increased opportunities and wealth that this community of “honorary friends” brings with it, it is not surprising that, despite the laments of Western observers, many in the rest of the world have quickly accepted the chance to become part of that larger community.

The degree of world peace and prosperity we experience in the current century may rest on our willingness to allow the expanding

⁵ Thomas Friedman's (2006) *The World is Flat* is a good popular account of these processes.

sphere of monetary calculation to bring the status of “honorary friend” to all of humanity. The long hoped-for “brotherhood of man” can never be achieved in a literal sense. The best we can do is to recognize that monetary calculation can enable us to extend trust and cooperation to the entire globe, if only we allow it to.

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