INDIVIDUAL RESPONSIBILITY AND SYSTEMWIDE RESULTS

by

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Introduction

This paper begins with an unobjectionable claim: We all want to live in a world in which every buyer and seller is always completely honest, dependable, and trustworthy. In such a world, no one would lie, cheat, or steal. No one would misrepresent a product or hide a defect in order to make a sale, and the buyer would always alert the cashier when receiving too much change. Even politicians and children would always tell the truth.

Plainly, we do not live in such a world. Cigarette manufacturers swear under oath that their products are safe and that there is no proof that tobacco causes lung cancer. Management lies to labor about the true profitability of the firm and the size of the wage increase that the firm can really afford. It seems that we live in the midst of lies and deceit. Few can be trusted and few trust us.

This then is the problem: How can we make our world—the one full of distrust, fear, and worry—more like the world we all agree is better—the one in which individuals are honest and true?

Instead of the usual utopian or authoritarian schemes, this paper offers a cure for dishonesty in dealings between buyer and seller based on individual responsibility. Neither transformation of human behavior nor central control is needed. By harnessing the power of individual self-interest, a system can evolve that ensures honest behavior. This solution is feasible and often extremely effective, but it is counter-intuitive and, therefore, difficult to accept.

A Utopian Solution

The Utopian response to the problem of dishonesty is not really a solution at all, but merely an elusive wish. If somehow it was possible to create a perfectly honest person, we could attain our goal of living in an honest world. Such a person could be counted on, with no doubt or reservation whatsoever, to be completely open and forthright.

Karl Marx believed private property, money, and the capitalist system was at the heart of fraud, deception, and a variety of other reprehensible individual behaviors. For Marx, the solution to the problem was quite simple: replace vicious capitalism with its superior evolutionary offspring, communism, and substitute "new socialist man" for the money-hungry *homo economicus*.

Unfortunately, such a scenario seems farther away today than ever. It appears that Adam Smith and John Maynard Keynes, who believed that the self-interest that drives people to lie and cheat could not be eradicated, were right. Faced with the spread of capitalism, which requires self-interested motivation, reliance on altruism and selflessness as a guiding principle for the economy as a whole seems impossible.

I am not denying the importance of values, principles, and moral instruction. Personal integrity and ethics are qualities that should be nurtured and respected. We cannot, however, realistically hope to reach our goal of a more honest world exclusively via this route.

In certain cases, reliance on people's good qualities is, in fact, possible. We all have close friends and family whom we can trust to be sincere and truthful (and, unfortunately, some whom we cannot trust). In our daily lives, however, we deal with many, many strangers, and we cannot rely on personal relationships to ensure honest behavior. In a modern society that incorporates the actions and decisions of millions of individuals, it is simply impractical to expect such high nobility from everyone.

Thus, while theoretically possible, transforming human behavior to the degree necessary to offer a viable solution remains wishful thinking. Immutable human self-interest forces us to look elsewhere for a cure to the problem.

An Authoritarian Approach

To protect against dishonesty, many people think immediately of monitoring. If I know many of my customers are going to steal from me, I will put my valuable merchandise behind a glass counter, set up security cameras in my store, and maybe even hire someone to walk around and watch my customers.

If government tax collectors know that many citizens will cheat on their taxes if each person is asked to self-report how much they owe, they will set up a complicated auditing program. A sample of tax returns will be audited carefully to check for full compliance and severe penalties will be imposed on those caught cheating.

In general, the authoritarian approach to solving the problem of dishonesty requires a powerful judge who can check the truthfulness of statements and punish those who are caught violating the rules. This can work well when it is clear what constitutes a lie, and it is easy to observe the dishonest behavior.

Unfortunately, in many cases, it is quite difficult to determine dishonest behavior because there are shades of dishonesty, ambiguities in truthfulness, and inherent uncertainty in the world. For example, if I sell you an expensive watch, promising that it is of high quality, and then it breaks, am I a liar? It may very well be a high quality watch that just happened to break. Of course, I may have known that it was really a cheap watch and I just tricked you. In such a situation, it may be quite difficult to determine my honesty.

In addition to that rather large subset of cases where detecting dishonesty is difficult, every application of the authoritarian approach suffers from a much larger drawback. In order to be effective, the powerful judge must be able to monitor individuals, including investigating alleged wrong-doing, determining guilt, and meting out punishment accordingly. This raises a serious concern: Who watches the watcher? The inescapable paradox is that the stronger the authority, the more it will be able to control the individual, but also the more dangerous it becomes to the individual. Secret police, neighbors spying on friends, and severe control of individual behavior via strict rules and regulations seem the destiny of authoritarian schemes to coerce honesty from unwilling individuals.

There is little doubt that the authoritarian approach to the problem of dishonesty is the most common solution contemplated and applied. Faced with severe cheating, our first instinct is to call the referee and demand that force be applied to ensure truthfulness. There is, however, another alternative‹one that doesn't suffer from the dangers inherent in the authoritarian solution.

Individual Responsibility

Instead of transforming human behavior to excise the driving force of self-interest or imposing authoritarian control over human behavior to repress self-interest, the third solution relies on harnessing the power of self-interest in favor of our desired end. Individuals are free to decide to lie or not, but they are also held responsible for their choice. They cannot escape the consequences of their decisions. If honesty is the best choice from a self-interested point of view, then honesty is what we will get.

An Example

The sale of used cars is perhaps one of the most obvious examples of the dishonesty that has been discussed in this paper. Imagine yourself selling a used car. Many people would say anything to make the sale. They would take advantage of the fact that they know the true quality of the car, but the buyer does not. The seller might know that the car is in bad shape and about to blow up, but the poor buyer is reduced to kicking the tires in a sad attempt to determine the car's quality. Faced with this kind of asymmetric information, you might be an exceptionally honest person who would reveal the true quality of the car and answer all questions forthrightly. But we cannot expect everyone to behave this way.

The general problem of honesty, in this case, is reduced to figuring out a way to get sellers to tell the truth about the quality of the cars they are selling.

An Economic Model of Used Cars

Let's suppose that there are only two kinds of used cars: high quality cars (A) and low quality cars (B). Let's further suppose that there are equal numbers of each and that the high quality A used car is worth $10,000 while the low quality B used car is worth only $5,000. It is important to note that, as illustrated in Figure 1, there is no way to tell the cars apart. The underlying distribution of cars is on the left, but what the buyer actually sees is on the right:

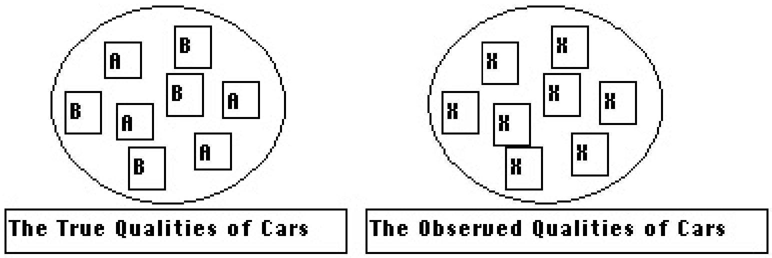


FIGURE 1: True And Observed Car Quality

In such a world, buyers would expect to get a car worth $7,500 on average. Half of the time they would get a $10,000 car and the other half a $5,000 car. Thus, on average, the used car they bought would be worth $7,500. Since this is the expected value of the used cars for sale, $7,500 is the amount buyers would be willing to pay for a used car.

While sellers of low quality cars would be quite happy, sellers of high quality cars would be upset. After all, owners of A cars hold a product worth $10,000. They might try to convince the prospective buyer to pay $10,000 by making claims about the high quality of the car. These pleas, however, are likely to be ignored since the buyer has no way of knowing if the seller is telling the truth. After all, the seller might actually have a low quality car worth $5,000 and is just lying in order to make an extra $5,000. The buyer would worry that the seller's self-interest would dominate the impulse toward honesty. In the world of used cars, everyone knows that sellers simply cannot be trusted.

The frustrated sellers of high quality used cars are likely to simply leave the market. This phenomenon is known as Gresham's Law. Applied to the used car market, the low quality used cars can be seen as driving out the high quality cars. Left alone, we would expect to see few high quality used cars for sale. In fact, that's not what happens—many high quality used cars are sold. Somehow, the problem of dishonest behavior by low quality used car sellers has been solved.

Instead of fixing the problem by attempting to correct the unethical behavior of the sellers of low quality used cars (whose dishonesty is causing the trouble here) or imposing authoritarian control over the used car sellers, an alternative scheme has arisen that has certain appealing properties—not the least of which is that car sellers truthfully reveal the qualities of their cars without any central, controlling authority.

Signaling Theory

First developed by Michael Spence, the idea behind signaling theory is simple: the sellers of high quality cars, frustrated by their inability to convince the buyers of the true quality of their cars, will look for ways to offer evidence that they are telling the truth. The signal, however, must have some special properties to be effective. In particular, it must be something the A car owner is willing to do, but the B car owner is not, so that it is not immediately copied by unscrupulous sellers of low quality cars.

In the case of used cars, a common signal is a warranty. Let's suppose that high quality cars will have low warranty costs to the seller since they are unlikely to break, but high warranty costs to the sellers of low quality cars for these cars will probably require many repairs. A graph of the cost of the warranty to the sellers of A and B cars might look like Figure 2:

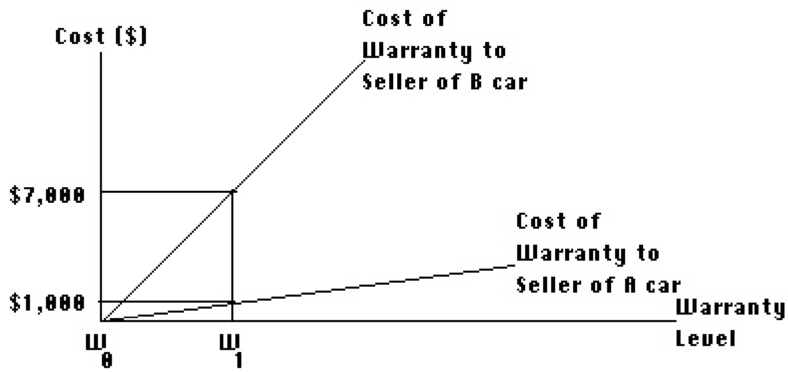


FIGURE 2: Warranty Cost By Used Car Quality

With no warranty at all, at W0, neither seller has any warranty costs—if something breaks after the car is sold, it's the buyer's problem. As the amount of warranty increases, however, the seller of the B car incurs higher warranty costs as more and more repairs are covered. At warranty level W1 (this might be repairs covered by the seller for the first 6 months or 3,000 miles), sellers of high quality cars expect to incur costs of about $1,000, while the sellers of low quality cars will pay around $7,000 for repairs.

Now, suppose that buyers said, "We will believe sellers who claim that their cars are high quality and pay the $10,000 price if and only if the car comes with a warranty level of W1." A graphical representation of this position would look like Figure 3:

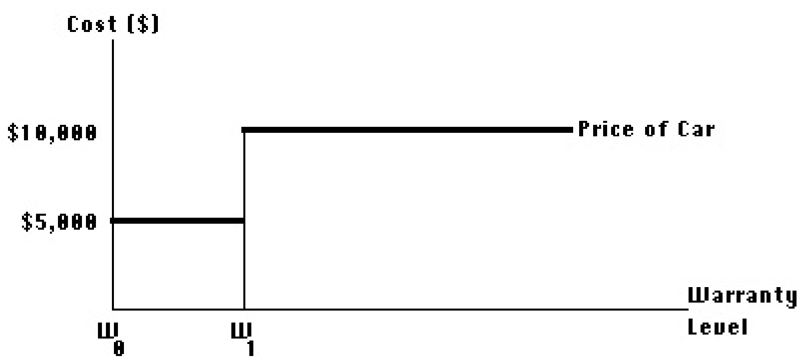


FIGURE 3: Price As A Function Of Warranty Level

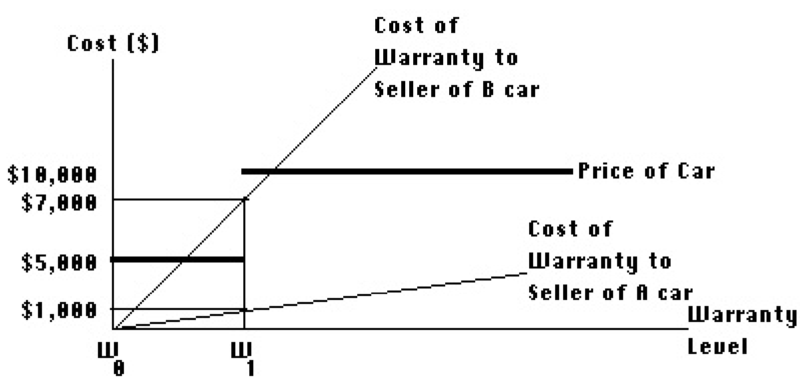
Anyone buying a car with a warranty level below W1 will be willing to pay at most $5,000 for it is assumed that the car is of low quality. Even if the car is actually a high quality car, if it fails to come with the W1 warranty level, no buyer will pay $10,000 for it because the claim that the car is of high quality is unbelievable without the warranty. On the other hand, a buyer would be willing to pay $10,000 for any car with a warranty level of W1, even if it is actually a low quality car.

Deciding Whether or Not to Offer the Warranty

Given the warranty signal, the sellers of used cars make a decision of whether or not to tell the truth based on individual responsibility. It is entirely up to them to decide whether or not to lie. Sellers of low quality used cars can claim that their cars are high quality and thereby receive the $10,000 high quality price. "Won't low quality used car sellers lie in order to get the $10,000?" No, because they would end up worse off. Their individual self-interest will drive them to tell the truth.

We assume that all sellers seek to maximize the net gain, or profit, from the sale of their goods and services. Sellers of used cars would not look blindly at the fact that they can make $10,000 by offering a warranty level of W1. This decision-making strategy completely ignores the cost of the warranty. Instead, sellers must compare the *net gain*, price minus cost of the warranty, in order to arrive at an optimal decision concerning the warranty level.

To see how such a decision is reached, let's superimpose the warranty cost and price graphs and then analyze a table of decisions.



True Quality of Car	If Seller's Warranty Decision is W0, then Net Gain is:	If Seller's Warranty Decision is W1, then Net Gain is:
Low Quality	***$5,000***	$3,000
High Quality	$5,000	***$9,000***

FIGURE 4: Seller's Net Gain Under Different Decisions

The table contains the seller's net gain from selling a car with no warranty at all, W0, versus selling the same car with warranty level W1. It is clear that sellers of high quality used cars will offer the warranty level and make $9,000 in profit since that beats the $5,000 net gain if W0 is chosen. Similarly, the sellers of low quality used cars will choose to forgo the warranty and walk away with $5,000 since that is superior to the $3,000 net gain from choosing to lie and posting the warranty bond.

This is a rather remarkable result. To restate the outcome, the sellers of low quality used cars will voluntarily, honestly admit that their used cars are of low quality and only worth $5,000. The sellers of low quality used cars will not lie to the buyers. Is this because they suddenly were overcome by their conscience? No. They are the same fallible, less than perfectly honest people before and after the warranty scheme. Are they telling the truth because an authority figure is watching them, ready to punish liars? No. No one is watching them. The sellers of low quality used cars can lie if they so wish. They will not lie, however, because it is not in their self interest. They end up worse off if they lie in this situation. The warranty scheme has managed to successfully separate or sort the two qualities of cars into their respective groups.

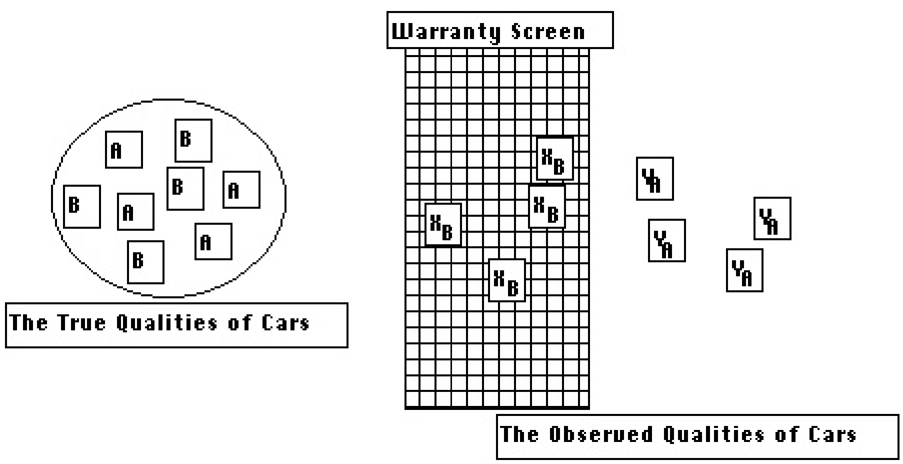


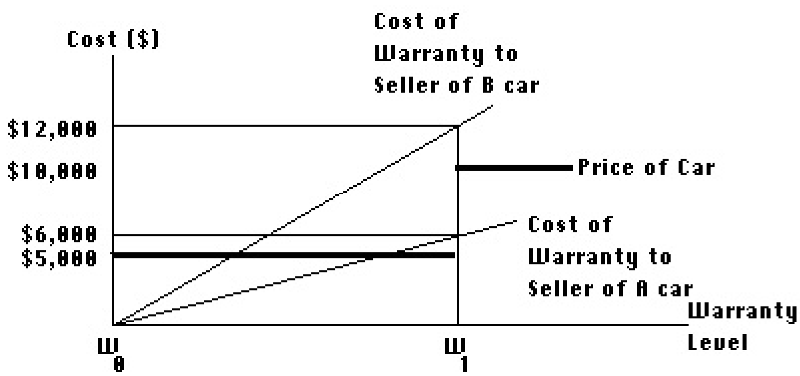
FIGURE 5: The Warranty As A Screen

Figure 5 shows that the warranty acts as a screen, separating the unobserved true car qualities into two distinct groups, Xs and Ys, from which it easy to tell which cars are high quality and which are not. In essence, two markets for cars are created, one for low and the other for high quality cars, each with their own prices. Sellers of low quality cars, although they are physically able to do so, will not lie and enter the high quality car market because the price of admission is too high. Lying is not profit maximizing, therefore, lying will not be observed.

It is perhaps paradoxical to ponder, but no individual or organization runs this scheme. No one sets the warranty level and no one sets the price of the cars. The whole scheme bubbles up from the interaction of the two kinds of sellers and the buyers. Adam Smith would have called it an example of the "invisible hand" of the market; Friedreich von Hayek would have described it as a "spontaneous order;" and modern day chaos theorists would speak of "self-organizing systems." It is all the same thing—individual interaction generating a quite agreeable systemwide result. To see how this can possibly be, let's examine how the signaling scheme can break down.

Signaling Failures

There are, of course, ways that signaling can fail. One way is if the signal is set too high. In this case, as shown in Figure 6, not even the sellers of high quality cars find it in their self-interest to accept the warranty level that brings the $10,000 price.



True Quality of Car	If Seller's Warranty Decision is W0, then Net Gain is:	If Seller's Warranty Decision is W1, then Net Gain is:
Low Quality	***$5,000***	- $2,000
High Quality	***$5,000***	$4,000

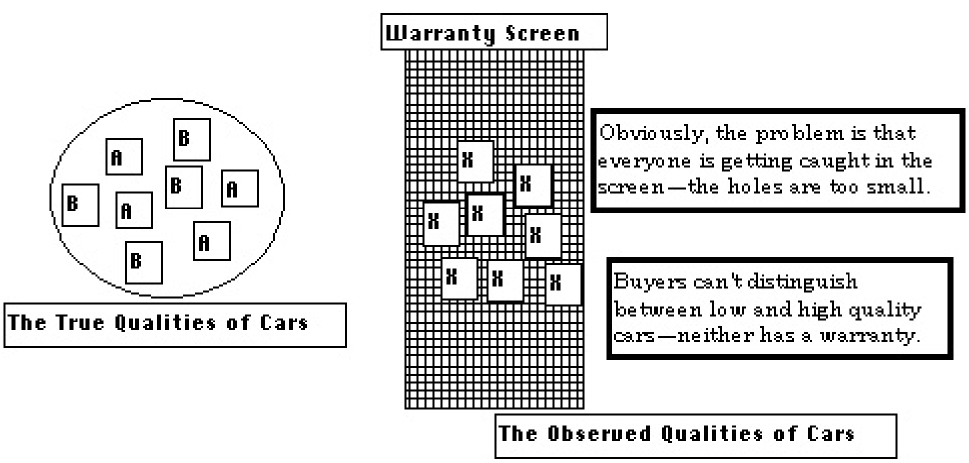
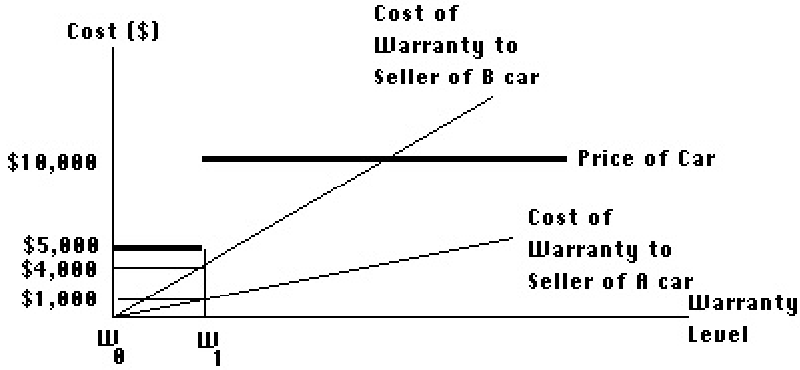


FIGURE 6: Signaling Failure From Warranty Level Set Too High

On the other hand, if the signal is set too low, Figure 7 shows that everyone will find it in their self-interest to accept the warranty level that brings the $10,000 price.



True Quality of Car	If Seller's Warranty Decision is W0, then Net Gain is:	If Seller's Warranty Decision is W1, then Net Gain is:
Low Quality	$5,000	***$6,000***
High Quality	$5,000	***$9,000***

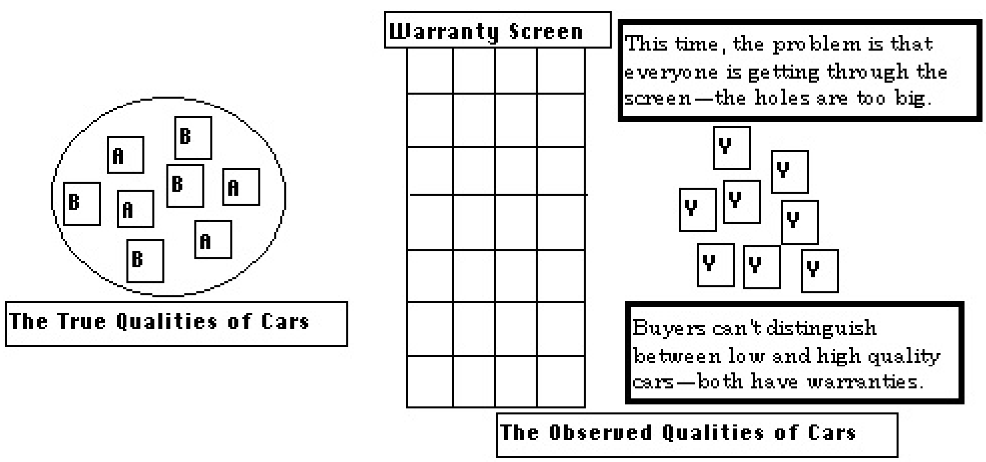


FIGURE 7: Signaling Failure From Warranty Level Set Too Low

Signaling Equilibrium

It is the very fact that signals can be observed as failing that provides the key to understanding how the system can settle down to a result that effectively solves the problem without central control. If the signal is too low, self-interested sellers of high quality cars will offer high warranty levels in order to block their lying brethren from diluting their market. If the signal is too high, no one will take it and the buyers will realize that they have lost the means by which to identify the two qualities of cars. The forces inherent in the system, self-interested behavior by the interacting agents, will conspire to generate an equilibrium signal level that effectively sorts the two qualities of cars.

Other Applications of Signaling Theory

In cases where one party to a transaction has available information that the other party lacks, honesty is put in peril. One way to elicit honest behavior is through signaling, a scheme whereby one's claims must be supported by a bond or guarantee. There are more examples of this solution to the problem of honesty than might be apparent at first.

Consider education. Faced with many job applicants, all claiming to be high quality A workers, the firm might insist on a signal, a college degree, to back the claims made by job applicants. Suppose that low quality workers are also likely to be low quality students, and that it is more costly for them to acquire the educational signal. As in the used car case, the successful screen will separate the two worker groups into their respective low and high ability categories. The signal will elicit honest responses from low quality workers because lying requires a college degree to be believed and this is not in their best interest.

Additional applications of signaling include: insurance (where gravely ill or sick people honestly reveal their health status since their claims must be supported by a physical exam), legal bargaining (where plaintiffs signal the strength of their case by demanding a high pre-trial settlement), and firm entry (where incumbent firms make reliable claims about their low costs and ability to compete by charging low pre-entry prices).

In every case, an incentive mechanism has developed that accepts self-interest among buyers and sellers as a powerful, immutable, driving force. Instead of fighting self interest by removing or suppressing it, the incentive mechanism uses self-interest to reach the desired end.

<u>Foundations</u>

This paper has borrowed heavily from the ideas of Adam Smith. Among his many brilliant insights was the idea that there are basically three ways to get someone to do something for you:

1) Ask very politely and, as a favor, they might do it

2) Force them to do it

3) Make it in their best interest for them to do it

Smith was aware that the first option was dependent upon the personal relationship between the two parties. Only the most noble among us do favors for total strangers. The chances of success via this route plummet as the favor becomes increasingly expensive or difficult to perform.

Smith realized that the minute society expanded from a close knit tribe to a teeming mass of strangers, another system was needed. In perhaps the most famous part of *The Wealth of Nations*, Smith emphasized this crucial point.

> When an animal wants to obtain something either of a man or of another animal, it has no other means of persuasion but to gain the favour of those whose service it requires. A puppy fawns upon its dam, and a spaniel endeavours by a thousand attractions to engage the attention of its master who is at dinner, when it wants to be fed by him. Man sometimes uses the same arts with his brethren, and when he has no other means of engaging them to act according to his inclinations, endeavours by every servile and fawning attention to obtain their good will. He has not time, however, to do this upon every occasion. In civilised society he stands at all times in need of the cooperation and assistance of great multitudes, while his whole life is scarce sufficient to gain the friendship of a few persons. In almost every other race of animals each individual, when it is grown up to maturity, is entirely independent, and in its natural state has occasion for the assistance of no other living creature. But man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favour, and show them that it is for their own advantage to do for him what he requires of them. Whoever offers to another a bargain of any kind, proposes to do this. Give me that which I want, and you shall have this which you want, is the meaning of every such offer; and it is in this manner that we obtain from one another the far greater part of those good offices which we stand in need of. It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages.

As the possibility of obtaining what we want via personal favors falls (as we increasingly do not know personally those from whom we need aid), the second avenue becomes increasingly attractive. Instead of asking nicely, we get what we want by sheer force. Once again, Smith is aware of this and points out the serious flaws embedded in such an approach. Whenever it is difficult to measure or monitor performance, forcing people to do what we want can backfire. Smith offers teaching as an example. In a world where teachers are paid the same amount independent of the quality of their work, a boss must oversee their work to make sure they are doing it.

> All that such superiors, however, can force him to do, is to attend upon his pupils a certain number of hours, that is, to give a certain number of lectures in the week or in the year. What those lectures shall be must still depend upon the diligence of the teacher; and that diligence is likely to be proportioned to the motives which he has for exerting it.

In other words, you can force a slave to till a field, but the effort and quality will not be the same as that of someone who really wants to do the job. Forcing someone to do something for you will not result in a high quality completion of the task. It will not stimulate innovation nor generate cost savings. It is expensive to monitor and ensure compliance.

It is the third approach that Smith saw as the real key to getting a stranger to do something for you. Smith argued that if you want someone to do something for you, do not rely on the person's goodwill, do not force them to do it, but make it in their own interest to do it. This strategy has many advantages over the other two—and every one of these advantages can be traced to the fact that the powerful force of self interest is harnessed to work for you, instead of against you.

Will the butcher look for ways to improve the quality of the meat and his work? Yes, since he will gain from this improvement. Will the brewer try to find new recipes for brews and even entirely new beverages? Yes, since she will gain from her diligence. Will the baker greet you warmly and offer excellent service? Yes, since he will gain from this effort.

None of them will require fawning or begging to do the work. None of them will require constant monitoring and a host of rules and regulations. In every case, the job will be done by someone who wants to do it because it is in his or her own best interest.

Smith's Insight Applied to Signaling and Other Matters of Ethics and Morals

Smith's insight on the motivation of self-interested agents is the secret that we used to get the seller of a used car to reveal the car's true quality: make it in his or her own interest to tell the truth. Smith never heard of signaling theory, but there is little doubt that he would have nodded in agreement and wholeheartedly endorsed it. It has the twin advantage of accepting human beings as they are (which the Utopian solution does not) and harnessing self-interest to work on the side of honesty without a central authority (which, plainly, the Authoritarian solution does not).

The same approach can be taken in a host of other matters. Faced with communal property rights, self-interested agents are likely to overutilize natural resources. If a communally owned pond is governed by a "whoever gets the fish first, gets to keep it" policy, we should not be surprised to find overfishing of the pond. Add a technological change such as a fishing net and the entire fish population is in danger.

A Utopian approach would solve the problem by seeking to modify basic human motivation, urging people to think of their fellows and refrain from overfishing. Those who overfished would be denounced as evil and avaricious. An Authoritarian solution would simply posit a central power that controlled the allocation of fishing, perhaps setting up a strict regime of fishing times or maximum catch allowed. Violators would be punished. Few would think of a private property rights system as a third solution to the problem. By utilizing individual ownership, it suddenly becomes against one's own best interest to overfish. Once again, it is the same people who overfish under the communal system, who protect the valuable natural resource under the private property rights system. They behave as they do, in both cases, because of self interest. In the former, self-interest works against the desired end; while in the latter, it works for it.

Economists are well aware of a series of ethical issues faced by society. The free rider problem plagues those who want to build public parks since free riders refuse to pay for the park, knowing that they will be able to use it once it is built. Firms overpollute the environment since such pollution escapes into the air or water and is not incorporated as a private cost in the firm's decision-making process.

How do we judge the actions of free riders and polluters? Are they evil and unethical? Is better moral instruction or authoritarian censure the best solution? Perhaps, but the point of this paper is that there is another alternative. Accept the motivations of human beings as given and build an incentive mechanism which generates the desired end.

Every spring a huge outcry occurs when Canadian pelt hunters harvest seals on the Gulf of St. Lawrence. The grisly scene has hunters clubbing baby seals to death, in order not to get unnecessary holes in the pelts, in a mad race to get as many pelts as possible. Television images of baby seal corpses bleeding onto the white snow while their mothers wail record the entire scene. The International Fund for Animal Welfare blames hunters for the killing of baby seals and the cruel way in which it is done.

Perhaps, however, these hunters are not any more or less cruel or immoral than anyone else. Maybe the real culprit is the incentive mechanism adopted. Economics teaches that people are basically the same—self-interest is a prime motivating force. As such, an effective way to change behavior is to change the incentives so that self interest leads to a desired result.

The basic issue that underlies both the problem of honesty, in particular, and ethical behavior, in general, is the means by which to get to the desired end. John Maynard Keynes, discussing the need for some inequality in the distribution of income, focused on the incentive effects of higher wages for harder, better work. He abandoned the Marxian, Utopian solution for the practical, incentive-based scheme.

> There are valuable human activities which require the motive of money-making and the environment of private wealth-ownership for their full fruition. Moreover, dangerous human proclivities can be canalised into comparatively harmless channels by the existence of opportunities for money-making and private wealth, which, if they cannot be satisfied in this way, may find their outlet in cruelty, the reckless pursuit of personal power and authority, and other forms of self-aggrandisement. It is better that a man should tyrannise over his bank balance than over his fellow

> citizens; and whilst the former is sometimes denounced as being but a means to the latter, sometimes at least it is an alternative.
>
> . . .
>
> The task of transmuting human nature must not be confused with the task of managing it. Though in the ideal commonwealth men may have been taught or inspired or bred to take no interest in the stakes, it may still be wise and prudent statesmanship to allow the game to be played, subject to rules and limitations, so long as the average man, or even a significant section of the community, is in fact strongly addicted to the money-making passion.

Conclusion:

This paper has argued that the primary solutions to the problem of dishonesty among buyers and sellers have centered on Utopian and Authoritarian approaches. The former seeks to perfect human behavior, while the latter directly controls it. A third, somewhat counter-intuitive, alternative exists that relies on self-interest to yield an agreeable systemwide result.

This third alternative belongs to the phenomenon described by Smith as the "invisible hand," by von Hayek as "spontaneous order," and by modern day mathematicians as "self-organizing systems." It is marked by a decentralized pattern established from the operation of a few simple rules. When birds fly in a V-shaped pattern, they do so not under the guidance of an authoritarian drill sergeant who tells each bird where to fly, but because they obey a simple rule that says, "If there are no birds around, fly; if a bird is in front, fly just off its wing." Likewise, modern society is composed of millions of individual agents whose interaction establishes a systemwide pattern. The point of this paper has been that unsatisfactory systemwide patterns can be changed via transmuting the motivating forces of the each agent, imposing decisions on each agent, or changing the incentives faced by the each agent. The last option is rarely considered, but may be the most effective and best of the three.

To be sure, this third approach, which is based on individual responsibility, requires rules and institutional support. If the seller of low quality used cars knows that he can renege on warranties or other contracts because the court system is nonexistent or corrupt, then signaling will be useless. There is, however, a world of difference between an authoritarian approach that relies on a central power to coerce honesty and the system which evolves out of the interaction of the buyers and sellers given appropriately supporting institutions. The decentralized system avoids the question of "Who watches the watcher?" because there is no dominant central power. And in the end, this may be its most significant advantage.