

Ethics and Exchange

If I have two journeymen, **one naturally industrious**, the other idle, but both perform a day's work equally good, ought I to give the latter the most wages? Indeed, lazy workmen are commonly observed to be more extravagant in their demands than the industrious; for, if they have not more for their work, they cannot live as well. But though it be true to a proverb that lazy folks take the most pains, does it follow that they deserve the most money?

If you were to employ servants in affairs of trust, would you not bid more for one you knew was naturally honest than for one naturally roguish, but who has lately acted honestly? Franklin, Benjamin (1734/2012-12-18). "Self Denial Is Not the Essence of Virtue." *Memoirs of Benjamin Franklin; Written by Himself*, Volume II (of 2) (Kindle Locations 414-419).

I. Introduction

Partial solutions to the problems of life in communities have always been combinations of ethics, community norms, and formal law. They are as old as civilization itself and likely to be older than recorded history. Many societies have ethics, norms, and formal laws without having written language. In this chapter we turn from general problems associated with life in communities to ones associated with exchange. Solving problems associated with exchange is important for the emergence of towns and cities because such communities cannot be self-sufficient in food production. And, although one can imagine coercive systems through which such needs may be provided, there is a good deal of evidence that

voluntary exchange was an important method of shifting goods and services from one person to another from very early times.

Money goods have been found in archeological digs as far back as 10,000 BCE. Systems of barter and the trading of favors are likely far older. Trading favors, as within families--you do that for me and I'll do this for you--doubtless extends back to the emergence of homosapiens and beyond. Smith (1776), for example, suggests that the propensity to truck and barter is grounded in human nature.

That networks of exchange are among the most ancient and durable features of human society is not to say that all markets are the same or work as well. Whenever one hears an economist or editorial writer say that "X" should be left to "the market," one's first thought should be "which market?" Markets have changed through time, and some markets clearly advance both individual and community interests better than others.

That markets change through time is widely acknowledged and studied by economic historians. Douglas North (1981, 1990) for example argues that a good deal of progress is the consequence of changes in formal and informal institutions that reduce transactions costs. For the most part, he and his colleagues study variations in law and contract that increase the likelihood that particular agreements will be executed as intended by the parties to the agreement. They argue and a good deal of history supports the claim that better institutions for contract and contract enforcement produce new gains from trade and more extended trading networks.

The main hypothesis of this book is that ethics and norms have effects that are fundamentally similar to the innovations studied by North and his colleagues. A wide variety of norms affect the extent of markets. Some reduce the scope of commerce, while others increase it. If so, a general trend in norms that provides increasing support for trade and production may play a role in the emergence of commercial societies.

Insofar as specialization increases as trading networks expand--as argued by Smith (1776), Stigler and Sherwin (1985), and Buchanan and Yoon (1994)--such innovations increase the productivity of everyone that

participates in those trading networks. This effect produces more extensive and productive markets of the sort associated with the commercial society..

The previous chapter demonstrates that appropriate ethical norms can eliminate or at least ameliorate a broad range of social dilemmas. A subset of possible internalized rules of conduct make communities more likely to form and be sustained. Insofar as transactions costs tend to be smaller in such groups than in both Hobbesian anarchy and other lawless settings without such internalized norms, markets tend to be more extensive and more productive in more civil societies than in less civil ones, other things being equal.¹

This chapter and the next explore how a subset of possible ethical systems can further increase the extent of markets and productivity of markets. Some ethical systems and norms make exchange and production less costly and risky to engage in, while others have opposite effects.

II. Gains to Trade without Transactions Costs among Honest Trading Partners

Although voluntary exchange has taken place for thousands of years, the idea that every trade involves gains to trade for both parties is relatively new. Aristotle's idea of equivalence or fair trade is historically more common. The first clear statement of it seems to be in Bentham, although it is also indirectly implied in earlier writings. The utilitarian framework can more readily characterize those gains than others, because utility is subjective. It exists in the minds of persons rather than outside them.

Thus, utility can rise for each participant in an exchange, even though the money value of the things traded is exactly the same.

Yet, the realization of such mutual gains is by no means automatic. This is partly for reasons implicit in Hobbes. Rather than exchange the parties with control over the resources may simply attempt to take that controlled by the other. After a civil society emerges and claims over resources are formalized, such "taking" transactions become less common. Nonetheless, a variety of risks and other costs associated with exchange still exist. Many of these can be considered transactions costs.

Transactions costs can be ignored without causing major problems for some aspects of price theory per se. Thus, most textbook treatments of exchange leave them out. However, transaction costs need to be taken into account in order to understand the extent of trading networks and organization. They also need to be taken into account to understand how a subset of ethics and other norms can enhance the performance of exchange networks and economic organizations.²

Voluntary exchange as represented in most textbooks occurs simultaneously without information, law enforcement problems, or other risks. In competitive models there are posted prices and known products which both buyers and sellers take as given. In simple monopolistic and monopsonistic models the prices are set by sellers or buyers, rather than by market forces of supply and demand. Nonetheless, as in the competitive case, the non-monopolized side of the market responds to those prices and knows fully what it is offered. In such settings, the problems explored in this chapter and the next do not exist.

¹ Insofar as humans thrive in such societies, it also provides a survivorship based explanation for the generalized ability of humans to internalize a variety of norms and to detect and (modestly) punish or exclude those who violate norms.

² Textbook treatments of market exchange are for some reason uninterested in the size and scope of markets, possibly because they take the existence of a commercial society as their implicit point of departure. Other literature, as with the economics literature on contracts and torts, explicitly address many of the problems addressed in this chapter. However, they consider legal solutions, rather than ethical ones to the problems addressed in this chapter. The new theory of the firm literature explores how contracts can address reduce team production problems. Neither literature, however, takes significant account of the role of market supporting ethical theories and other norms in helping to sustain these fundamental market relationships. Without these, contracts would have to be far more commonplace and detailed than they are.

As a point of departure, table 7.1 represents the simple trading setting of standard economics textbooks. There are no transactions costs and the products are well understood by both parties. However, even in that setting, offers must be made and accepted, and this is not an entirely automatic process. If there is no cost associated with making or accepting offers, Friedrich will make an offer to Adam that will make them both better off, and Adam will accept the offer.³

Table 7.1: Gains From Trade without Transactions Costs

		Friedrich (Seller)	
		Make offer	Don't
Adam (Buyer)	Accept	(A, F)	(A, F)
	Offer	(3, 3)	(0, 0)
	Don't	(0, 0)	(0, 0)

Note that this very simple representation of exchange has two potential Nash equilibria, although one clearly dominates the other. Making and accepting (soliciting) offers is a weakly dominant strategy for each potential trader in this setting, because there are potential gains to trade that can be realized and there is no cost to making or accepting offers. Adam is at least as well off accepting the offer as rejecting it, no matter what Friedrich does. Similarly, Friedrich is at least as well off making the offer as not making it, regardless of what Adam does.

Nonetheless, the no trade outcome is also a Nash equilibrium, because given that outcome, neither trader can make themselves better off by changing their own strategy choice. That the make and accept offer

strategies dominate the “don't” strategies implies the upper left-hand corner is the most likely outcome of this particular game. In such cases, the mutual gains from exchange are realized.

Note that strong assumptions are required for the above outcome to emerge. Trade must always mutually beneficial, offers can be costly be made, and acceptance of every offer made is always beneficial. Neither law nor ethics improves outcomes in such a model, beyond that required to define and shift the ownership rights over the goods traded.

This simplicity disappears when transactions costs are brought into the analysis.

III. Gains to Trade with Transactions Costs among Honest Trading Partners

Let us now modify the choice setting by assuming that making and accepting offers takes time and energy. Suppose that making and accepting offers costs 1 unit of the measure of payoffs (utility or net benefits). The seller may have to travel to a particular location (the marketplace) and the buyer may have to make a special trip to that same place to accept any offers of goods for sale. Traders are again assumed to be well informed about the details of the offers made. There is neither fraud nor misunderstandings about the terms of trade.

This choice setting is characterized in table 7.2. The transaction costs affect both the net gains to trade that are ultimately realized and the off diagonal payoffs that occur when offers are made but ignored or sought but not made.

³ As in the previous chapter, the matrices can be interpreted either as one shot games or as repeated games in which the payoffs are present discounted values (net benefits) for the pure strategies. The equilibria in the latter cases should be considered subgame perfect equilibria in pure strategies.

Table 7.2: Gains From Trade with Transactions Costs
Ronald (Seller)

		Make offer	Don't
Douglas (Buyer)	Accept	(D, R)	(D, R)
	Offer	(2, 2)	(-1, 0)
	Don't	(0, -1)	(0, 0)

This representation of exchange has the payoffs of a standard assurance game. It has two stable Nash equilibria, each of which may now plausibly emerge from individual decision making. There are no dominant strategies in this game, because the best choice depends entirely on what the other does.

If Ronald does not make an offer Douglas should not try to accept. If Douglas ignores Ronald's offer, Ronald should not bother to make one. There are costs associated with making offers that cannot be ignored. Gains to trade may exist, but may not be realized, because making and accepting offers is costly. As an illustration of such equilibrium, consider all of the "treasure" that lies buried in basements, attics, and closets that could have been sold on one of the internet selling services, but isn't.

Trades are more likely to take place if people in the community of interest are predisposed to trade, as they would be if they exhibited Adam Smith's "propensity to truck, barter, and exchange one thing for another." In such cases, the cost of every transaction is offset by the joy of trading. A similar propensity would be associated with normative theories that regarded trade to be an inherently meritorious activity because, for example, it increases aggregate utility.

Table 7.3 represents this internalized predisposition to trade as V , which is the payoff associated with trading itself. Whether it is of ethical or genetic origin is not immediately important. If the trading propensity is

sufficiently strong, making offers and accepting them becomes the dominant strategy for each player. In table 7.3, $V > 1$ is sufficient to assure that gains to trade are realized. Given a particular support for or predisposition to engage in market transactions, V , whether the joy or virtue of trade, all gains from trades with transactions costs less than V , will be realized.

Table 7.3: Gains From Trade with Transactions Costs in a Market Supporting Culture
Friedrich (Seller)

		Make offer	Don't
Adam (Buyer)	Accept	(A, F)	(A, F)
	Offer	(2+V, 2+V)	(-1 + V, 0)
	Don't	(0, -1 + V)	(0, 0)

The opposite is, of course, true if there is a predisposition against trade, as for example in More's utopia. If guilt rather than virtue is associated with trade, then $V < 0$, and the gains to trade are reduced, rather than increased. Trade will not take place if $V < -2$.

In a community where such internalized norms are common, only transactions that would have produced relatively large gains from trade (in the absence of such norms) will be realized. The trading networks within and among such communities with anti-trade norms will be much smaller than in communities with norms that support "trucking and bartering," other things being equal.

For a given distribution of potential gains to trade and transactions costs, the greater is the normative support for exchange, the greater are the transaction costs that can be overcome, and the broader markets tend to be. The greater the normative opposition market trade, the higher effective transactions costs become, and the smaller market networks tend to be.

This effect implies that changes in a community's normative systems can directly extent of commerce among persons within and among the communities of interest. An increase in Smith's propensity to truck and barter tends to increase the domain of exchange and a diminution tends to reduce it.⁴

IV. Gains to Trade with Transactions Costs among Non-Honest Trading Partners

Transactions costs themselves are not simply a matter of the resources consumed to realize gains from trade such as time and energy. Some trades have net losses, rather than benefits, associated with them. A buyer might be fooled by a seller into purchasing a good that not as good as claimed. A seller might agree to a sale, but fail to be paid. Not all sellers or all buyers are honest. Such these risks increase the difficulty of realizing gains from trade.

A. The Possibility of Fraud Undermines Markets

A fraudulent offer is one in which the true quality of the product or service offered for sale is inferior to that which the seller claims. An honest offer accurately describes the product and terms of the product on offer, as in the cases above.

The effects of fraud can be analyzed by adding a row to the game characterized in table 7.2. The new row characterizes a seller's profits from making fraudulent offers. Such profits are possible whenever the lower quality good or service is less costly to produce and the characteristics of the product or service cannot be easily assessed by potential buyers before the sale. Such a choice setting is characterized in table 7.4.

Table 7.4: Markets with Fraud
Gordon (buyer)

		Accept or Solicit Offer	Ignore All Offers
Richard (seller)	Fraudulent Offer	(R ,G) (3, -3)	(R , G) (-1, 0)
	Honest Offer	(2, 2)	(-1, 0)
	Do Not Make Offers	(0, -1)	(0, 0)

If Richard expects Gordon to accept his offer, then he should make a fraudulent one. If Richard expects Gordon to refuse or ignore the offer, then he should not bother making either type of offer. Gordon's only reason to accept an offer is if he anticipates an honest one. In this setting, there is just one nonstochastic Nash equilibrium, rather than two, the one in which offers are neither made nor accepted. The potential profits of fraudulent offers essentially eliminates the market for this sort of product.⁵

The no-trade equilibrium is problematic from a utilitarian perspective because it fails to maximize aggregate utility ($4 > 0$). It is also problematic from a Paretian perspective because there is a feasible outcome that could make both parties better off without making anyone else worse off. A contractarian would note that the formation of an organization to punish fraud or the expansion of state responsibilities to include such

⁴ If the number of potential buyers is greater than the number of potential sellers, organizational innovation may take place. Richard, for example, may establish a store front to more economically make the same offer to all potential customers. Placing a for sale sign on a single item or display of goods indicates that goods and services are for sale. By committing to make offers, a seller allows buyers to simply reject or accept the offer made, rather than seek out offers from potential sellers. By reducing transactions costs, weaker predispositions to trade are necessary under such institutions. Norms, ethics, and predispositions continue to affect the extent of markets and extent of the gains from trade realized even after this innovation is introduced and copied.

⁵ This market can be regarded as a special case of the market for lemons developed in Akerlof (xxxx).

punishments would be useful if it could be done at a small cost (here less than 4).⁶

If Erasmus' characterization of medieval merchants is accurate--where sellers cozen and cheat--one would anticipate relatively small trading networks in which only easily assessed goods and services would be traded.

B. Ethical Sellers

To realize the gains to trade of associated with honest exchange requires a reduction in the profits from fraud. This may be induced by laws that punishment fraud, by the posting of bonds by sellers (such as a money back guarantees), or by dispositions for making honest offers or against making fraudulent ones.⁷

The effect of an internalized general norm against telling lies or a narrower one with respect to misleading one's customers can be represented in the same manner that other internalized ethical dispositions were in Chapter 6. Violating such norms may be associated with feelings of guilt that reduce the fruits of fraud. Alternatively, following such norms may produce feelings of virtue or praise worthiness for the individual. Again such norms may be more or less strongly internalized. The payoffs of table 7.5 includes the effect of guilt associated with making fraudulent offers.

Table 7.5: Markets with Fraud and Guilt from Fraudulent Behavior

		Gordon (buyer)	
		Accept or Solicit Offer	Ignore All Offers
Richard (seller)	Fraudulent Offer	(R ,G) (3-G, -3)	(R , G) (-1-G, 0)
	Honest Offer	(2, 2)	(-1, 0)
	Do Not Make Offers	(0, -1)	(0, 0)

.A sufficiently strong guilty reaction from making fraudulent offers, $G > 1$, can cause the honest trading cell, (2,2), to emerge as a possible equilibrium. This requires potential sellers to be able to recognize such (relatively) honest sellers. In the one shot setting represented in the matrix, this requires buyers to be able to appraise a seller's character, which is arguably one of the skills that most persons acquire through time, although it is rarely perfect. In repeated exchange settings, such sellers may acquire a reputation for honest dealings within their community.

Exchange networks will be more extensive when only (or mostly) honest sellers exist, but their extent is still affected by normative support or opposition to trade itself. However, as in the previous case, even in markets with only honest sellers, additional supports are need to realize all potential gains to trade because of remaining transactions costs. Such sellers, as true of Kant's ethical tradesman, would not exploit their informational advantage to misrepresent the quality of their products to

⁶ If the game were restricted to the upper four cells, neither of the potential trader's would have a pure dominant strategy. In that case, mixed strategies may be adopted by each.¹ Repeated dealings may also affect the payoffs associated with honest and fraudulent offers, although there are cases in which the present discounted value of a long series of transactions have payoffs with relative magnitudes that are the same as in Table 7.4.

⁷ Of course, both bonds and warrantees may also be fraudulent.

unsophisticated or overly trusting buyers. This game has two possible equilibria, namely those associated with the assurance game in the bottom four cells.

It is interesting to note that in this case, avoiding guilt as opposed to the pursuit of virtue yields slightly different results. If a sufficient increase in utility is associated with the making of offers ($V > 1$), a unique Nash equilibrium exists, name that where the honest offer is made and accepted.

As true of other rules for a civil society, internal systems of supplemental rewards and punishments are substitutes for formal legal and other organizational ones. Note, however, that the risk of fraud is unlikely to be fully eliminated by law, because of the costs of using the courts to overturn fraudulent transactions and penalize those engaging in fraud. Cases must be filed, lawyers hired, and time spent making and pleading one's case. As a consequence, small losses from frauds will not be eliminated by plaintive recoveries of the same magnitude as his or her losses.⁸ These smaller frauds are more likely to be overcome through internalized ethics and norms.

The stronger are internalized norms against making fraudulent claims or in favor of making honest claims, the weaker laws against major frauds can be. Moreover, antifraud laws themselves are likely to have been adopted in part to achieve ethical ends--that is, to discourage conduct that is widely regarded to be unethical.⁹

C. Implicit Assumptions of the above Analysis of Fraud

It should be noted that this choice setting has been contrived to make the problem of fraud as difficult to overcome as possible through

market-based behavior. Only a single transaction is undertaken and the purchaser is assumed not to be able distinguish between fraudulent and honest offers before the exchange is undertaken.¹⁰

As these assumption are relaxed the required strength of internalized norms diminishes because the profitability of fraudulent transactions diminishes. It is, however, only in cases in which fraud can be easily detected by buyers that the rules of conduct adopted by sellers are irrelevant for the extent of commerce and its associated trading networks. In such cases, fraudulent transactions become impossible--more or less by assumption.

Given a well functioning legal system, it might be argued that internalized codes of conduct are less important than suggested by the above analysis. The law may impose fines and jail time rather than feelings of guilt which can also reduce the problem of fraud. However, court proceedings are not costless. It takes, time, energy, and money to bring case to court. The more often court proceedings need be applied to recover losses from fraud, the more risky transactions are, and the smaller market networks tend to be even with reliable law enforcement. It also bears noting that given the cost of court proceedings, only relatively large losses will be brought to court.

Small money transactions will not be brought to court, and these are among the most common transactions undertaken in market networks. Many common purchases fall into this gap between law and anarchy. A great-tasting and disgusting bottle of wine, loaf of bread, apple, or can of beans all look basically the same. It is not until one actually takes them home and consumes them that one really knows the quality of the product

⁸ Court systems may be made more effective if those defrauded have a strong enough demand for justice to be willing to pay more for a trial than will be recovered from the court decision itself. The use of a court system for revenge, however, may more may not increase the efficiency of a legal system. A court system can be over used.

⁹ Note that the logic developed above suggests that reputation for ethical conduct can counter Akerlof's (1970) lemons effect by increasing the probability of successful transactions at or with particular firms.

¹⁰ The simultaneous nature of the trade clearly exacerbates the problem, in that there is no chance for Gordon to examine the offer and attempt to detect the fraud or make his acceptance of the offer conditional on whether he believes the offer to be honest or not. The above game is equivalent to a sequential game in which Gordon is not able to distinguish between the two types of offer at a reasonable cost.

purchased. Similarly, the durability of a pair of shoes, a shirt, stove, cell phone or other consumer capital good will not be known until well after the purchase is made.

With respect to continuous dealings, first it bears noting that not all small transactions are repeated frequently. One may purchase food, clothing, and medicines while traveling. One may purchase a box of salt, a bottle of aspirin, or new computer only once every few years.

It also bears noting that any reputation that emerges from repeated dealings or through social networks is usually one that concern the ethics of the firm. That is to say, a good reputation is normally taken to be evidence of a firm's or seller's character. Firm A is always honest with its customers, can be trusted, always delivers on what is promised, stands by its warrantees, never takes advantage of ignorance, and so on.

D. Shopping for Ethical Suppliers

The preference for ethical sellers is indirectly indicated by the choice settings illustrated by tables 7.4 and 7.5. Table 7.4 can be regarded as the opportunity confronting customers at an unethical firm and table 7.5 as the opportunities confronting consumers at an honest or ethical firm. Given a choice between two such suppliers of otherwise similar products, consumers will tend to purchase from the trustworthy supplier of table 7.5.

Insofar as supplier A does all the above better than others, or more efficiently, the effective total cost of purchasing goods at supplier A will be lower than at supplier B. As this becomes widely known, consumers will naturally purchase their goods from supplier A. In this manner, consumer choice tend to support a subset of exchange supporting norms that have been internalized by firms.

Of course, "fair dealing" is not the only way that a supplier can reduce the transactions costs of its consumers. The use of store fronts, display cases, and well designed websites all tend to reduce consumer transactions costs and thereby make more trades feasible than they would have been. In

addition both producers and retailers may study their potential consumers to better understand what they actually want to purchase.

Such efforts also require Smith's sympathy or fellow-feeling or Aristotle's principle of reciprocity to be applied by sellers to their customers. What is that my customers want? How can I improve my products for them? How can I make shopping a more pleasant or efficient process for them? The question most often heard when one walks into a contemporary service orientated store is thus "can I help you?" rather than "how can I profit from you?" even though the store's owner/manager is likely to care more about the later than the former.

All this implies that an organization's code of conduct tends to be more virtuous than its owners or employees. However, such codes of conduct are more likely to be implemented by dutiful personnel than their unethical equivalents, other things being equal.

Consumer demand tends to support the development of organizational rules and the hiring of persons with customer-oriented ethical codes of conduct even if they do not care about the ethics of a firms employees, per se, because they do care about risks and costs associated with buying goods and services. Competition for consumer spending thus indirectly induces firms to supply appropriate codes of conduct for their employees, as well as goods and services.

Consumers that do care about the internalized norms of a firm's owners and employees are also willing (by definition) to pay a higher price for the services provided at such firms. When relatively small numbers of such consumers exist, specialty shops may provide the additional moral services, as with stores that sell "fair trade" goods or specialty shops for orthodox members of various religious groups.

As the numbers of such "ethical consumers" increase, ordinary retailers may start to espouse normative positions consistent with those consumers, as with those norms espoused by contemporary environmentalists. For a firm or firm owner to express indifference to environmental concerns today would risk losing a significant part of their potential customer base.

V. Ethics and Production by Teams

The exchange of preexisting goods and services created by single persons represents only a very small fraction of the transactions of contemporary markets. This is not to say that one person and one family production and sale of goods and services never occurs, but most goods and services in commercial societies are produced by groups of individuals--teams--assembled with their subsequent sale in mind. Agricultural crops are normally grown by teams of farmers and farm hands. Cloth and clothing are normally created by teams of persons using a variety of machines to transform fluff into thread, cloth, and clothing. Lumber begins as a natural phenomena (a tree), but trees are transformed into by groups of persons who cut trees down, transport them to sawmills, and saw it up into more or less standard sizes, and then transport it to storefronts and construction sites. Each stage of this process normally involves several people using equipment developed by other teams of producers. Contemporary products such as computers and cell phones are created and manufactured by a series of very large organizations, most of which have thousands of team members.

It bears noting that production by very large teams is a relatively new phenomenon associated with the industrial revolution. Production in former times, as with lumber, were often undertaken by teams, but much smaller ones than in contemporary industries.¹¹ Although one man and one woman firms still exist, they are far less common in commercial societies than they were in former times.

The shift to production and distribution by large organizations occurred partly for technological reasons. New economies of scale in production and organization were created by innovations in manufacturing and transport equipment and also in techniques for managing large production teams. However, older labor-intensive small-scale production

technologies continued to be used in countries and regions that did not industrialize.

An important issue for the purposes of this book is the degree to which cultural differences, specifically differences in internalized norms, affected the speed and extent to which industrialization took place. Max Weber, among many others, argued that large scale economic enterprises require the support of internalized norms by team members. He also suggested that the ethical systems commonplace in pre-capitalist systems tended to reduce opportunities for such organizations, and thereby for exchange, production, and the accumulation of wealth.

[W]ith the breakdown of tradition and the more or less complete extension of free economic enterprise, even to within the social group, the new thing [large scale production] **has not generally been ethically justified and encouraged, but only tolerated as a fact.** And this fact has been treated either as ethically indifferent or as **reprehensible**, but unfortunately unavoidable. **This has not only been the normal attitude of all ethical teachings, but, what is more important, also that expressed in the practical action of the average man of pre-capitalistic times. ...**

A man does not “by nature” wish to earn more and more money, but simply to live as he is accustomed to live and to earn as much as is necessary for that purpose. **Wherever modern capitalism has begun its work of increasing the productivity of human labor by increasing its intensity, it has encountered the immensely stubborn resistance** of this leading trait of pre-capitalistic labor. **And today it encounters it the more, the more backward (from a capitalistic point of view) the laboring forces are with which it has to deal.** (Weber (1909/2012: KL 271-96).

¹¹ Mechanization often reduces the necessary size of the teams required, as in farming and lumber. Nonetheless, the largest organizations in these industries employ far more people than earlier ones. Weyerhaeuser, a leading lumber company, employs more than 10,000 persons and has tree farms covering more than 6 million acres. Monsanto, a leading seed producer, employs over 20,000 persons working in 66 countries. (These numbers are taken from their respective corporate websites.)

The extent to which large teams have replaced small teams in production and distribution varies widely around the world. One partial explanation for that variation is differences in culture, as suggested by Weber. The remainder of this chapter suggests that a subset of culturally transmitted norms and ethics may account for much of that difference.

The basic technologies of production and organization are freely available everywhere in today's global economy. Internalized ethics, however, are not as easily transported because they reflect decades of acculturation and personal decisions.¹²

The next three sections of this chapter demonstrate how internalized ethics and norms can reduce problems associated with team production and thereby make team production more effective and profitable. Insofar as these illustrations characterize essential features of real choice settings, they demonstrate that a subset of internalized norms can increase the productivity of large organizations and reduce their organizational costs. This tends to make their use more profitable, which allows more specialized and capital intensive production methods to be used, which in turn extends the reliance on markets for inputs as well as outputs.

VI. The Shirking Dilemma and the Productivity of a Work Ethic

The groups of men and women that produce goods and services can be considered teams and the process through which this occurs as team production (Alchian and Demsetz 1972). That ethics can increase the productivity of teams has been studied by a few economists (Congleton 1991, Buchanan 1994, Rodgers 2009), but these efforts have been neglected by microeconomic textbooks (and most economists).¹³

This may reflect belief among contemporary economists that ethics are beyond the scope of economics or the implicit assumption that ethical codes are constant over the period of interest and captured by the utility

functions or labor-leisure tradeoffs used in their analysis. Either assumption tends to imply that ethics can be ignored for the ask at hand. The analysis below suggests that such approaches are mistaken if internalized norms change or have changed in the period of interest, or vary among regions of the world.

The essential problem confronted in team production is analogous to the free rider problem of the previous chapter. Output increases as each person increases their efforts, but there are often incentives for each team member to free ride (shirk) by under-applying their effort and talents to the productive activity being undertaken.

Team production is often potentially much more efficient than production by the same individuals acting alone. For example, a team of 6 specialists can potentially build 6 houses faster than 6 persons working alone can build their own houses. A team of ten persons can lift a tree, rock, animal, etc. that no single man could. A team of medial specialists can likewise undertake surgeries that no single person could.

However, there is a sense in which team production can be regarded as unnatural. Every persons on a team have private incentives to under-provide services to the team. Each captures only part of the overall gains from their efforts, because their efforts directly or indirectly increase the productivity of other team members.

A. Team Production

As a point of departure assume that a team is organized as a "natural cooperative" and share the output produced equally. Each person participates in the team activities for 8 hours. The team's output is two times the total effort invested in production. Suppose that effort is unobservable, as when a group tries to lift a heavy object or separately search for fruit to be harvested and shared. The benefits of leisure (the absence of effort) are realized only by the person(s) shirking. Any increase

¹² That cultural differences are likely to be part of the explanation is implicit in many international studies that use country-fixed effect techniques. These "dummy variables" are nearly always significant and often account for a good deal of the explanatory power of the estimates developed.

¹³ For more on the economics of a work ethic see Congleton (1991) and Buchanan (1997). Studies of the effects of work ethics on work habits are more common among non economists as with Greenberg (1977), Eisenberger and Shank (1985), Furnham (1984), and Miller, Woehr, and Hudspeth (2002).

in team output is shared among the team members. Assume that the value of an hour of shirking is equivalent to 1.5 units of the team's output. Table 7.5 illustrates the resultant "shirking" dilemma for a two member team. The payoffs are net benefits measured in output units. They are the sum of the each team member's share of the team's output plus the value of each player's own leisure.¹⁴

periods in ancient Athens. The team may be better organized with contracts developed to encourage the proper effort level, as has been explored in the efficient contract literature.

A third possible solution occurs when team members all have an internalized work ethic or similar norm.¹⁵ An internalized work ethic may take the form of a duty to work that brings forth guilt of disapprobation when violated, as incorporated into table 7.7, or as a reward from the virtue of industry that encourages effort for its own sake, or a combination of the two. Internalized norms, as argued by Aristotle, Franklin, Smith, Spencer and many others do not reduce happiness through guilt or asceticism. They may directly contribute to one's character and ability to feel contentment, or they may indirectly increase one's happiness by improving outcomes from interacting with others in one's community.

In this case, guilt increases happiness (and income) by producing a better outcome. A work ethic which associates a guilt penalty with shirking can induce 8 hour days of effort by each. If $G > 1$, the result is increased utility or net benefits for all.¹⁶

Table 7.6 The Shirking Dilemma of Team Production (in Natural Cooperatives)				
		Harold (hours of effort)		
		8 hours	6 hours	4 hours
Armen hours of effort	8 hours	(A, H) 16, 16	(A, H) 14, 17	(A, H) 12, 18
	6 hours	17, 14	15, 15	13, 16
	4 hours	18, 12	16, 13	14, 14

The Nash equilibrium is at the lower right-hand corner of the table. That a shirking problem exists is implied by several normative theories. To the extent that shared output or net revenues can be interpreted as utility levels, aggregate utility is not maximized. From the Pareto and contractarian perspectives, there are many feasible moves that could make at least one person better off without making another worse off.

Such problems are ancient and so are a subset of solutions. Laws could be passed against shirking (idleness), although this is rarely done. Exceptions being the early Puritan colonies of Massachusetts and some

¹⁴ The fact that "shirking" has a negative connotation is of course an indication that we have internalized norms regarding appropriate work effort.

¹⁵ Eisenberger and Shank's (1985) research suggests that a work ethic can be inculcated among those lacking one.

¹⁶ Although not important for the purposes of this illustration, some readers may be interested to know that the individual cell payoffs for Armen are $1.5(8 - E_A) + 2(E_A + E_H)/2$ where E_A is the number of hours Armen devotes his energies to team production, rather than shirking. The payoffs for Harold are Armen are $1.5(8 - E_H) + 2(E_A + E_H)/2$. ($E_A=4, E_H=4$) is the Nash equilibrium of the continuous version of this game as well. The joint optimum is an 8 hour day for each.

Table 7.7 How a Work Ethic Reduces the Shirking Dilemma

		Harold (hours of effort)		
		8 hours	6 hours	4 hours
Armen	8 hours	(A, H) 16, 16	(A, H) 14, 17-G	(A, H) 12, 18-2G
hours of effort	6 hours	17-G, 14	15-G,15-G	13-G, 16-2G
	4 hours	18-2G, 12	16-2g, 13-G	14-2G, 14-2G

A variety of norms can solve or reduce the shirking problem if internalized by all team members. Community can also reduce shirking problems. Norms that associate disapprobation or disesteem with failing to perform one’s duties at team production tend to increase the viability of teams. However, other community norms may further undermine team production. The opposite association--praising persons for cleverly avoiding work--has the opposite effect on team production.

VII. Recruiting and Rewarding Internalized Ethics

The particular distribution of skills and virtues within an organization is largely a matter of recruiting, that is to say conscious efforts by formateurs and their recruiters to assemble a team. The analysis of the previous section suggests that those recruiting team members have reasons to take account of internalized ethical predispositions, as well as other relevant skills, when assembling a team. Many will affect their organization’s efficiency and profits. Thus, a subset of each potential team member’s ethical predispositions affects both their job opportunities and wages in a manner consistent with the Franklin quote at the beginning of this chapter.

When organizations that hire team members to produce goods for market, it is clear that highly skilled persons with dispositions to work hard are preferred to low skilled, dishonest, persons with a predisposition to

shirk, other things being equal (such as wage rates and availability). Whether a firm would prefer a low skilled individual with a disposition to work diligently over a high skilled individual with a propensity to shirk depends upon a variety of factors including the cost of monitoring, the difference in potential output for high and low skill workers, and differences, if any, in market wage rates.

A. Market Rewards for a Subset of Internalized Norms

Table 7.8 illustrates the tradeoff confronted by a firm owner attempting to assemble a team given a menu of persons who might join his or her organization if asked.

	High Skill	Mod. Skill	Low Skill
High Ethics	10	8	6
Mod. Ethics	7	6	5
Low Ethics	6	5	4

The firm is one for which monitoring is costly, and so a propensity to work diligently when not monitored is nearly as important as task-related skills. In such organizations, a skillful person who can freely shirk may produce little of value, although more than a less skillful person with the same predisposition to shirk.

If the reservation wage of all nine types of potential employees is the same, the organization will first hire the type (HH) worker, the one with the highest skill and strongest work ethic. The second hired is the person of high motivation and moderate skills (HM). That person works hard enough to offset his or her lower skills. The third person hired is the person with a modest work ethic but high skills (MH). and so forth until the new team is staffed out or departing members replaced. Low ethics in this context does not imply criminal behavior, but rather a weakly internalized vector of relevant propensities for honesty, industry, prudence,

and so forth, and thus a greater propensity to shirk from one's duties to the firm when not closely monitored.

If the same skills and dutiful propensities have value in other organizations as well, it is clear that wage rates would tend to adjust to reflect differences in marginal productivity, with trustworthy high skill team members earning more than twice the wages of less trustworthy low skill employees. Given the productivity differences implied by the illustration, high skill employees would always earn more than low skill employees other things being equal, and ethical employees would tend to earn more than less ethical ones, other things being equal. Tradeoffs between these two productive traits implies that some high skill workers may be paid less than a lower skilled counterpart, because of differences in their productivity-relevant ethical dispositions.¹⁷

The extent to which ethical workers are valued by employers also varies with the extent to which fraudulent transactions and defective products are punished by their customers. In markets for which the quality of products is easily discerned and it is also often easy to monitor employees, internalized work and quality norms tend to be unimportant. In cases in which team members affect the quality or quantity of the output in a manner that cannot easily be linked to particular team members, and consumers are able to assess the quality of the products sold, but not until well after a purchase, the internalized ethical dispositions of a firm's employees (and owners) will be important determinants of reputation and long term profits.

As a consequence, the demand for ethical employees (employees with particular internalized norms) varies among firms and also among occupations within firms. For example, honesty has a greater effect on the marginal productivity of persons overseeing the operation of cash register

than on those washing windows. This is not to say that a given window washer may not be more honest than a given cashier, but the quality of a window washer's work is easy to access. The extent to which change is miscounted to customers or items paid for in cash are misrung on cash registers is more difficult to assess.

Sub-markets for various internalized ethics thus tend to exist. Some ethical dispositions are more valuable for some positions, some firms, and some industries than others. For example, promise keeping is more important in industries where contracts are done via handshake and firm reputation than in ones where careful detailed contracts are worked out and readily enforced by litigation. The tradeoffs between skill and ethical dispositions vary among industries, which is consistent with surveys that indicate that some industries and professions are more trustworthy than others.¹⁸

Unfortunately for firms and ethical labor suppliers, differences in internalized norms are difficult to assess accurately before a person is hired. Objective measures such as criminal records, modes of dress, college degrees, religious background, and letters of recommendation can be used to estimate both the skills and ethical predispositions of potential employees, but only imperfectly. In most cases, such references are supplemented with personal interviews at which the interviewer attempts to assess the skills and propensities of potential employees. Such interviews would be less commonplace and trial periods shorter, if references were always complete and trustworthy--and only skill-related differences were at issue.

Firm owners might be tempted to reward what might be called "tribal ethics" whereby fellow team members inside a given firm are treated more ethically than those outside the firm. However, competition for customers

¹⁷ In perfectly competitive markets for labor, workers are paid their full marginal product. This need not be the case if labor markets are less than perfectly competitive or if it is difficult to measure job skills and ethical predispositions. The difficulty of estimating a potential team members true marginal product is one reason why firms devote so much time and energy in their recruiting efforts and why salaries tend to be less fine-grained than the competitive models predict. Assessing and individual's marginal value product is a far more difficult task than most economic models suggest.

¹⁸ It is interesting to note that most professional societies have their own official code of ethics. Such codes may affect the conduct of their members and also serve as a signal to potential employers of the internalized norms accepted by at least a majority of the members of their society.

tends to moderate this temptation. Franklin, among many others, argues that developing general virtuous dispositions tends to advance one's economic interests. At the margin, both market and other rewards provide sufficient reasons for both employers and employees to invest in at least a subset of ethical dispositions.

Thus, there is no necessary conflict between a life in commerce and being an ethical person. Although firm owners will not reward ethical beliefs that tend to make a person less productive during business hours, they will encourage and reward internalized norms that increase their bottom lines. They will do so even if the firm owners are themselves amoral pragmatists.

VIII. Markets and the Distribution of Ethical Dispositions

At the level of a society, the distribution of ethics and skills may be taken as given in the short run, because these reflect long term investments in virtue and excellence made by individuals and firms over the course of several decades. Such dispositions are difficult to change insofar as investments made during the first part of one's life establishes the possible trajectory for future developments.

Nonetheless, to say that change is difficult or slow is not to say that it is impossible. If we accept Aristotle's characterization of virtue as "unnatural" dispositions accumulated through deliberate practice, it is clear virtue like any other skill at problem solving can be gradually accumulated at any point in one's life. According to Aristotle, Franklin, and many others, ethical dispositions are not all or nothing affairs but rather gradual consequences of training, practice, and reflection.

Smith argues that such investments in virtue are made because of the rewards of approbation from fellow members of one's community. Aristotle and Mill would suggest that it is simply a method of increasing

one's long term happiness, although praise tends to follow and identify virtuous conduct. Only Kant among the scholars reviewed in part I argues that self-interests and ethics are entirely different realms of choice.

The analysis of the last part of chapter 7 explores Franklin's advice to young men and women. He recommends investments in virtue because they tend to increase one's income and wealth, and thereby provide the material means to pursue other sources of happiness. It also provides a rational choice foundation for some parts of Spencer's discussion of the coevolution of society and ethics. Insofar as the economic rewards of particular virtues increase one's own life and survival prospects, along with that of one's children and society, such virtues will be supported by social evolution.

In commercial societies, investments in skills that increases one's productivity on teams and in business transactions produce higher incomes. This, in turn, is arguably the main reason that so many persons attend college and trade schools. Not all skills are equally rewarding, which affects the effort level and talent brought to various sub-areas of professional training. The same reasoning also applies to ethical dispositions that are socially rewarded. With respect to markets, some virtues are highly rewarded while others are less so. These differential market rewards will affect the mix and degree of internalization of all virtues, not simply those sought by employers.

For example, modesty makes it less likely that an individual's other virtues become known to potential employers and so arguably makes one somewhat less likely to be hired, other things being equal. Bravery may induce persons to ignore what their employers or customers want from them, even if it places their future employment at risk. Such persons may be proud, but under- or un-employed insofar as many firm owners prefer rule following "meek" persons to impetuous heroic ones.¹⁹

¹⁹ The above simply follows Montesquieu's reasoning. Unusually brave and bold nonconformists may be well-rewarded in the most dangerous industries. As in all markets, the interplay of supply and demand determine the rewards. If there are more unusually braver and bold persons than jobs for them, wage premiums for bravery will tend to be relatively low. Knight (1921/2006) suggests that risk taking within markets, the bravery of what he calls entrepreneurs, often tends to be well rewarded.

Economics implies that as pecuniary rewards change for investments in the many forms of human capital, people will adjust their portfolios of human capital at the margin to take account of those changes. This is not because people are only motivated by material comfort and status, but because they are at least partly so motivated.

Table 7.9 illustrates how the rewards from virtue affect a person's allocation of time among activities, including the production of virtuous habits. The numbers in the cell represent marginal utilities or marginal benefits associated with successive hours of investment in 5 activities, including investments in three virtues. All the activities are assumed to exhibit diminishing marginal returns, as per the usual economic assumption. For purposes of illustration, it is assumed that Ben can only work at one thing at a time and that the marginal utilities of the five activities are independent of one another. This simplification allows the benefits from various allocations of time to be represented in a table, which is useful for purposes of illustration and not entirely unrealistic.

The shaded cells represent Ben's initial allocation of 16 hours among these activities listed. Such a choice might represent investments in ethical dispositions in a pre-industrial society. This allocation maximizes his (or her) utility from these activities.

Suppose that commerce expands, and the returns to work, honesty and industry all increase by two utils ($s=2$) because of new rewards (salary plus praise) associated with those virtues. Ben's new allocation is represented with the underlined cell entries. The change in the relative returns of the five activities causes an hour of leisure to be shifted to work and an hour of time spent perfecting bravery to be shifted to perfecting prudence.

Table 7.9 thus illustrates the tension between commerce and virtue that concerned Montesquieu, among many others. Some virtues are supported by markets but others are undermined. Bravery and leisure may be less evident in the post commercial society than in the pre-commercial one. On the other hand, as argued by Spencer and Bastiat, commerce is not inconsistent with ethical development. Prudence and industry are supported by commerce in the illustration. Indeed, if prudence is regarded to be a more important virtue than bravery, as in Aristotle and Smith argue, average virtue may be said to have been increased by the expansion of commerce.

Table 7.9 also illustrates how acculturation operates when persons immigrate from a relatively less commercial society to a more commercial one. As the rewards associated with virtues change, more or less effort will be made to acquire those dispositions.

IX. Conclusions: On the Coevolution of Commerce and Ethics

Buchanan (1979) distinguished between natural and artifactual man. Natural man is the man that would have existed if he or she made no efforts to invest in self development. As a first approximation, natural man may be regarded as genetic man. Artifactual man is built upon natural man and is that which emerges from personal and social investments in education and self development. Ethical dispositions are thus aspects of humanity which distinguishes natural from artifactual man.

This chapter and the one before have used Buchanan's bifurcation of human nature to illustrate how internalized ethical and civic norms can solve or reduce a variety of problems faced by persons living in

Table 7.9 Ben's Allocation of Time and Effort (Cell Entries are Marginal Utility, 16 Hours Allocated)					
	Leisure	Work	Honesty	Prudence	Bravery
1 hour	20	30 +s	11 +s	12 +s	11
2 hours	16	24 +s	<u>9 +s</u>	11 +s	<u>10</u>
3 hours	<u>12</u>	18 +s	7 +s	10 +s	9
4 hours	9	12 +s	6 +s	<u>8 +s</u>	8
5 hours	6	<u>8 +s</u>	5 +s	6 +s	6
6 hours	3	4 +s	4 +s	4 +s	4
7 hours	4	2 +s	6 +s	2 +s	1
8 hours	2	1 +s	4 +s	1 +s	0

communities and participating in commerce. Such man-made dimensions of humanity make life in society safer, more pleasant, and more rewarding. A subset of these and other internalized norms also expand opportunities for exchange and production. As market-supporting norms become more commonplace, a commercial society becomes more likely to emerge.

In this sense at least, capitalism may be said to have moral foundation. Without community and market supporting ethical dispositions, extensive markets, and large scale production would be impossible.

This is not to say that the causality is entirely from ethics to markets. Commerce and ethics may be said to coevolve, because innovations in ethics may encourage commerce, and expansions of commerce may reward investments in a subset of virtues. The shift in favor of market supporting norms charted in part I is likely to reflect both innovations in ethical theories and increased support for a subset of those innovations by markets.

In the centuries after the Renaissance and Protestant Reformation ethics were shifting in a market supporting direction and that shift was clearly being reinforced by commercial expansion. Evidence of such a shift in ethics is provided by the authors discussed in chapters 3-5, where support for markets and careers in commerce were clearly gaining more and more support from both religious (Baxter and Barclay) and secular theories (Grotius, La Court, Franklin, Smith, Bentham, Bastiat, Spencer.).

In this manner, the commercial society can emerge gradually as norms adjust and the exchange networks increase in scope and magnitude. These effects were evidently strongest in the societies that commercialized first, as in the Netherlands and United Kingdom.

The reverse is, of course, also possible as market supporting norms erode or innovations in ethics or technology undermine the appeal of such norms. The introduction of new anti-commercial norms tends to undermine economic activities. Similarly, the collapse of an industry or an economy can reduce the rewards (at least temporarily) from investments in market supporting virtues. In principle, this bootstrapping form of

interdependency may produce industrialization or de-industrialization according to the ethical and technological innovations taking place.

The results of this chapter and the previous one imply that capitalism in the sense of extensive trading networks populated (although not necessarily dominated by) large commercial organizations are more feasible when particular moral beliefs and internalized duties are commonplace than when they are not.

References

- Akerlof, G. A. (1970) "The Market for Lemons: Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics* 84: 488-500.
- Buchanan, J. M. (1979) "Natural and Artifactual Man," *What Should Economists Do?* Indianapolis: Liberty Press.
- Buchanan, J. M. and Yoon, Y. J. (1994) *The Return to Increasing Returns*. Ann Arbor: University of Michigan Press.
- Buchanan, J. M. (1997) *Ethics and Economic Progress*. Norman OK: University of Oklahoma Press.
- Congleton, R. D. (1991) "The Economic Role of a Work Ethic," *Journal of Economic Behavior and Organization* 15: 365-85.
- Eisenberger, R. and Shank, D. M. (1985) "Personal Work Ethic and Effort Training Affect Cheating," *Journal of Personality and Social Psychology* 49: 520-28

Franklin, B. (1734/2012-12-18). "Self Denial Is Not the Essence of Virtue." *Memoirs of Benjamin Franklin; Written by Himself*, Volume II (of 2), Digitized and Distributed by Amazon.

Greenberg, J. (1977) "The Protestant Work Ethic and Reactions to Negative Performance Evaluations on a Laboratory Task." *Journal of Applied Psychology* 62: 682-90.

Knight, F. H. (1921 / 2006) *Risk, Uncertainty, and Profit*. Mineola, NY: Dover Publications.

Miller, M. J., Woehr, D. J., Hudspeth, N. (2002) The Meaning and Measurement of Work Ethic: Construction and Initial Validation of a Multidimensional Inventory," *Journal of Vocational Behavior* 60: 451-489.

North, D. C. (1981) *Structure and Change in Economic History*. New York: Norton.

North, D. C. (1990) *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

Smith A. (1776/2002) *An Inquiry into the Nature and Causes of the Wealth of Nations*. Public Domain Books. Kindle Edition.

Stigler, G. J. and Sherwin, R. A. (1985) "The Extent of the Market," *Journal of Law and Economics* 28: 555-85.

Weber, M. (1909/2012) *The Protestant Ethic and the Spirit of Capitalism*. Vook, Inc.. Kindle Edition.

X. Appendix: Contractual Solutions to Team-Production Problems, Economizing on Ethical Dispositions

This chapter has emphasized what might be called the recruiting solution to team production problems. Most economists, in contrast emphasize the contractual or organizational solution. This appendix illustrates how reward systems can be adjusted by the firm to elicit better outcomes from teams. It bears noting, however, that rewards need not be entirely pecuniary. Smithian approbation and disapprobation often play roles in this process. Particular habits of conduct and internalized norms are often consequences of such formal reward systems.

The game matrix below illustrates a pecuniary solution to the shirking or team production dilemma. Team production is again assumed to be worthwhile, which implies that the productivity of each member is increased by the efforts of the others. In the game above, which is referred to as the natural cooperative, the group's output is shared equally. In the game below, a formateur has created an artificial reward structure for his or her team. Each team member receives a reward (R) for work and a penalty (P) for shirking that is independent of the efforts of other team members.

Table 7.10 Contractual Solutions to the Shirking Dilemma of Team Production

		Harold (hours of effort)		
		8 hours	6 hours	4 hours
Armen	8 hours	(A, H) R, R	(A, H) 14, 17-G	(A, H) 12, 18-2P
hours of effort	6 hours	17-P, 14	15-P, 15-P	13-P, 16-2P
	4 hours	18-2P, 12	16-2g, 13-G	14-2G, 14-2G

For a formeteur to profit from a contractual solution, R has to be less than 16, the average output of team members at their most productive state, as in tables 7.6 and 7.7. Team members will avoid shirking if the rewards and punishments are sufficient and accurately imposed. In the case in which both are perfectly targeted, $R > 17 - P$ and $R > 18 - 2P$ are sufficient to solve the shirking problem. Thus, any combination of rewards and penalties such that $16 > R$ and $R + P > 17$ is sufficient to solve this intra-organizational rent-seeking problem.

Note that this implies that the greater are the potential penalties, whether in cash, disapprobation, or reduced status, the lower rewards can be. However, the rewards cannot be smaller than they would be in alternative employment opportunities. Nor can the punishments be arbitrarily imposed without inducing employees to depart for other organizations. The latter may be said to encourage just proceedings within organizations, another instance in which virtue is encouraged by markets.

It bears noting that there are costs associated with implementing contractual solutions that are avoided in the ethical recruiting solution. Monitoring and punishment are undertaken externally rather than internally, which requires establishing a process to evaluate performance

and mete out punishments and rewards. Errors from such external review procedures are nearly unavoidable, and they are more likely when the managers are not themselves virtuous in the sense that they are dutiful rule followers.

A profit maximizing formeteur will adopt the least cost method of addressing the problems at hand, which normally will involve some combination of recruiting for useful dutiful dispositions and formal reward and punishment systems. In this respect the rules of private organizations parallel those of the civil society. Civil societies tend to rely upon combinations of ethical dispositions and law to reduce the problems of life in communities. An organization's internal procedures, including its mix of contractual and recruiting solutions to team production problems, change as circumstances and goals change.

In this case, profit maximizing formeteurs will consciously adopt the least expensive combination that they know to be possible. And, the result may be said to perfectly economize on the use of virtue. The more expansive virtuous employees are to discover and hire, the more extensive will be efforts to devise and implement contractual solutions. Innovations and external shocks may induce greater or lesser reliance on recruiting relative to internal incentives to address team production problems.