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Neither Friends nor Strangers: Informal Networks of Subcontracting in French Industry

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Economists as a rule have attached little importance to the role of such social ties as trust and friendliness in market exchange. As Albert Hirschman (1982) has observed, this can be explained by the fact that the ideal market upon which claims of allocative efficiency rest involves large numbers of price-taking anonymous buyers and sellers supplied with perfect information. With such markets there is no room for bargaining, negotiation, or mutual adjustment, and the operators that contract together need not enter into a recurrent or continuing relationship.

This paper considers a case which does not conform to the economist's competitive ideal, that of continuing and recurrent relations between French firms and their subcontractors.¹ These are relations involving mutual dependency, where each firm's actions influence the other. The situation by its very nature calls for cooperation, and it is reasonable to ask whether trust plays a role in this process.

In order to motivate the discussion, I will first describe the context in which I decided to focus on the theme of trust and subcontracting. In 1985 I began a study of the introduction of new technology in small and medium French engineering firms.² This was prompted by a number of intriguing bits of evidence. From 1975 firms in this category had improved their performance relative to large firms in terms of profitability and rates of growth of output and employment. Further, in terms of the <<195>> latter two criteria, the smaller firms in this category (between 10 and 100 employees) had outperformed the larger (Delattre 1982). Secondary sources also showed that small and medium firms had been some of the most dynamic investors in advanced computer-based technology, primarily NC and CNC machine tools (Cavestro 1984).

This picture of comparatively rapid growth and technological sophistication contradicted established views of the role of small firms in the French economy. In particular, it was inconsistent with the dualist model which predicted technological backwardness in accordance with the confinement of small firms to unstable portions of the product market. In order to come to some understanding of these unorthodox shifts in relative performance, I decided to investigate the process of mechanization in a selected number of mechanical engineering firms in the Lyons conurbation.

Preliminary visits to firms with 200 to 500 employees revealed that most had substantially reduced their employment levels since 1980. The value of their sales, however, had in most cases increased after a dip in 1982-83. This could be explained in part by improvements in their productivity, but also by a substantial increase in their use of subcontracting for intermediate component production.

¹ <<194>> I would like to thank Diego Gambetta, Frank Wilkinson, Willy Brown, and Christina Ocampo for their interest in and suggestions for improving this paper. I also benefited from the comments of the participants in the trust seminar.

² <<194>> The small and medium category (*petites et moyennes entreprises* or PME) refers to enterprises employing between 20 and 499 employees.

To some extent, of course, the firms had used subcontracting before; few were of sufficient scale in their operations to warrant investing in plant for such specialized tasks as gear grinding or heat treatment. And they all made use of subcontracting to meet temporary capacity constraints.³ What I was observing, however, was different. It was a shift to subcontracting on a permanent basis for such standard operations as turning, milling, and drilling. It allowed the firms to avoid making investments in up-to-date machine tools and was frequently the occasion for a reduction in capacity, with some existing plant being sold off. While the general type of operation subcontracted was not specialised or specific to the particular firm in question, the design and specifications of the components were. Thus it was not a case of substituting in-house production for standardized components available in the market: rather, components were being machined (turned, milled, etc.) by subcontractors according to firm-specific plans produced in the design offices of the client firm.

What appeared to be taking place, then, was a process of industrial disintegration similar to the well-documented Italian *decentramento* <<196>> (Piore and Sabel 1984; Sabel and Zeitlin 1985). The small-firm sector was benefiting from large firms hiving off some of the activities formerly undertaken in-house. When I questioned management about these policies, they generally attributed the decision to increase subcontracting to the 1981-82 depression in engineering together with the tremendous improvements in productivity then being made possible through the introduction of the CNC machine tools. Most argued that given the slow-growing and uncertain markets in which their firms operated, it would be impossible to amortize investments in CNC equipment. They were not in a position to continuously operate the equipment for the 12 to 16 hours a day required to achieve a satisfactory return on the investment. Smaller specialists, on the other hand, were in a position to do this, in part because they aggregated demands from multiple clients, and in part because of their greater internal flexibility in terms of shift work and overtime. In short, subcontractors could do it more cheaply.

Cost considerations, then, dictated the initial switch from in-house production to reliance on the market. Further discussion showed, however, that these evolving market relations were a far cry from those of the standard textbook, where 'faceless buyers and sellers meet for an instant to exchange standardized goods.' By 1984-85 the firms had begun to use a suggestive word to describe their relationship to these new subcontractors: partnership (*partenariat*). In the course of conversations in which I myself participated, other equally emotive terms evoked the nature of interfirm relations: the importance of loyalty (*fidélité*); the existence of a moral contract (*contrat moral*); and the need for mutual trust (*confiance mutuelle*). This language suggests a certain anxiety inherent in subcontracting, and the need for something like trust if the relationship was to work smoothly. Such considerations led me to structure my interviews around the following set of questions:

- 1 What risks does subcontracting pose, and what safeguards do firms make use of to minimize these risks?
- 2 What are the mutual obligations implicit in the relation of partnership?
- 3 What is the role of reputation in ensuring that contractual obligations are met?
- 4 How does a firm decide if it can trust another, and can this trust be intentionally created?

The remainder of the paper will be concerned with these issues, both at the analytical and the empirical level. I begin with some general remarks on the meaning of trust.

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³ <<195>> This form of subcontracting is encouraged by the rigid restrictions French legislation places on laying off workers. During the 1970s these restrictions spawned a proliferation of temporary help agencies whose employees do not benefit from the same protective legislation. Another common arrangement is the use of so-called *intérimaires*, permanent employees of one firm with an excess supply who are loaned on a temporary basis to a firm facing a capacity constraint.

I

From my introductory comments it is no doubt evident that my notion of trust has something to do with relations of mutual dependency. I will now give a more precise definition of trusting behaviour in social relations.⁴ This will clarify at least some of the semantic difficulties involved in employing a word with such varied usage. I will then turn to a discussion of the theoretical literature on vertical integration and subcontracting which shaped my empirical investigation. In the process, the relevance of the general definition of trust to subcontracting relations in particular will be made clear.

Trusting behaviour consists in action that (1) increases one's vulnerability to another whose behaviour is not under one's control, and (2) takes place in a situation where the penalty suffered if the trust is abused would lead one to regret the action. In economic terms this implies that the action would not be taken in the absence of trust because the expected net benefit is lower than if some alternative is chosen. In short, there is no best strategy independent of trust.

It is perhaps worth while to elaborate further on the implications of this definition. Firstly, trust presupposes decision-making in a situation of risk, where the risk is attributable to the strategic behaviour of others or to the possibility that they will behave opportunistically. By opportunistic behaviour I have in mind not only such blatant forms as stealing and lying, but also more subtle techniques such as withholding information in an effort to confuse. As Dasgupta (this volume) has noted, the possibility of such behaviour is a necessary condition for the question of trust to arise. If all people are invariably honest, doing their best to fulfil their commitments, then there is no problem of trust as I have defined it.

Secondly, the action and hence the risks are avoidable: one does not have to engage in trade with another firm (although this implies forgoing the potential benefits of trade). Being able to avoid the relation is fundamental. If you could not, you might say something like: 'I have no choice but to trust this person, institution, etc.' Clearly, there being no choice, we need not invoke trust to explain our behaviour. Of course, as Luhmann (this volume) points out, whether or not a relation is seen to be avoidable is often highly subjective, and presumably varies in accordance with the structure of institutions and political power.

Thirdly, it is useful to distinguish between risk associated with the behaviour of others and the risk of what economists call uncertain or exogenous events, such as acts of Nature or unpredictable changes in <<198>> consumer demand and prices. Trust in this context is unrelated to our concerns of possible opportunism and the violation of commitment.

II

Hirschman (1982) suggests that recent approaches in economics can address the role of social ties such as trust in market exchange. These approaches are concerned to explain the existence of continuing relations between economic actors by placing stress on such factors as transaction cost, limited information and imperfect maximization.

I would like to suggest that the transaction cost literature (associated notably with Williamson 1975; 1985) can tell us something about the role of trust in the economy. As the term 'transaction cost' suggests, this literature is concerned with the organizational implications of the costs of making a transaction. This includes not only the cost of reaching an agreement satisfactory to both sides, but also that of adapting the agreement to unanticipated contingencies and of enforcing its terms. Enforcement refers not only to potential litigation, but also to the use of private safeguards to prevent violation, a point I discuss in some detail in the empirical section below. The relation of transaction costs to the economy parallels that of friction to a

⁴ <<197>> In common with Luhmann (this volume), I draw on the psychological literature, particularly Deutsch (1973).

physical system: it is often ignored in formal models but is none the less of great practical significance.

How does this relate to our concern? Trust enters into the argument because the presence of these costs is directly linked to the possibility that economic actors will behave opportunistically. This is obvious enough in the case of contract enforcement, but perhaps less so in those of negotiation and adaptation. Surely these latter costs are attributable to the time and expense of drafting a comprehensive agreement that attempts to account for all possible contingencies. But Williamson (1985) has made the point that in the absence of opportunistic behaviour there would be no need to attempt such costly planning: it would suffice for the two parties to agree always to adapt output to unanticipated contingencies in a jointly optimal way and always to share profits according to some general rule established in advance. Sequential adaptations would not pose risks if one could trust the other to behave honestly.

The tenor of my argument is probably becoming clear. If transaction costs are thought of as friction in the economy, then trust can be seen as an extremely effective lubricant. To quote Arrow (1974: 23): 'It saves a lot of trouble to have a fair degree of reliance in other people's word.'

I should emphasize that my use of the legalistic term 'contract' does not imply a comprehensive written agreement. In the subcontracting cases in question, agreements are never written. The only written document is <<199>> the order form. Certainly there is no effort to engage in comprehensive planning. The initial agreement is a reference point, the gaps in planning being intentional, and it is understood that adaptations will have to be made if the relation is to continue. This incompleteness of contracts is one of the reasons (though not the only one) why, to my knowledge, there is no use of the courts to resolve disputes. It requires both subcontractor and client to engage in an ongoing process of discussion in order to resolve misunderstandings and ambiguities and arrive at acceptable terms. The court system is simply not designed to provide these services in an efficient manner.

Given the possibility of opportunistic behaviour, trust is an essential ingredient in intermediate product subcontracting in so far as the two firms are locked into the relation. By lock-in effects I mean not only that the mutual benefits will be achieved only if trade takes place, but that the identity of the partners counts. Switching partners involves a loss for both sides. As Klein, Crawford, and Alchian (1978) have argued, firms become locked into a relation when investments in specific assets have been made. This results in a bilateral monopoly. Specific assets are those whose value is less if switched to alternative transactions and consequently whose value is not fully salvageable if the relation breaks down. This situation would arise, for instance, if a subcontractor invested in machinery dedicated to the production of a specific component for a particular client and if the subsequent use of the machinery to service other clients' needs then entailed a costly retooling process.

An example may help to illustrate my point. Suppose a subcontractor invests in specialized fixtures and tooling to grind gears specific to a particular product. The amortized fixed cost of the tooling is £1000 per day and the daily operating costs are £200. Any contract price above £1200 per day for the subcontractor's services will allow a positive return on the investment. Suppose further, because the tooling and fixtures can only be adapted to other requirements at considerable cost, that the salvage value of the equipment if sold is £500 (daily rental equivalent). Consequently, if the contract is prematurely terminated the subcontractor faces a daily equivalent loss of £500. On the other hand, the client faces a potential loss associated with having to pay more for the components to be produced elsewhere with general purpose - and hence less efficient - equipment. He may also face costs due to the disruption of production while a replacement subcontractor is being found. The situation clearly calls for discussion and understanding, since without cooperation either side can block trade, thereby incurring mutual losses.

There is a large game-theoretic literature on such bilateral monopolies, concerned to find ‘solutions’ in terms of a determinant price for the supplier’s services and hence for a division of joint profits (Rapoport <<200>> 1970; Shubik 1959). The outcome is indeterminate in the sense that individual profit-maximizing decisions by the supplier and the buyer lead to an impasse. This is partly resolved in some models by explicitly taking into account the relative bargaining power of the two actors, represented by the magnitude of the loss each faces if the other carries out the threat to block trade.

My concern here is less with the terms of the original bargain than with the possibility of *ex post* opportunism: either renegeing on the agreement or using the occasion of unanticipated contingencies to try to shift the distribution of joint profits in one’s favour.⁵ Returning to our example, suppose the subcontractor and the client agree on a contract price of £1200, allowing the subcontractor to break even on the proposed investment. Once the investment is made, however, the subcontractor’s vulnerability is increased. The client is in a position to appropriate the subcontractor, demanding a new contract price slightly greater than £700 (the £500 salvage value if the assets are sold off and the £200 daily operating costs). He may justify this in the name of unexpected financial difficulties, which the subcontractor is generally not in a position to verify. Conversely, the subcontractor, realizing that the client faces stiff penalties for late delivery of the product to the final customer, may opportunistically use his bargaining power to push up the contract price, similarly claiming unforeseen costs. Verification may again be both difficult and expensive.

The main point is that even a situation of *ex ante* competitive supply, with a large number of subcontractors tendering bids for the contract, can be transformed into one of bilateral monopoly due to investment in specific assets. Once this occurs there is scope for opportunistic behaviour. If assets are general and products standardized, on the other hand, there is not. In this case the identity of the partners is not important, since if problems develop each can go his own way and fully redeploy his assets in other transactions without loss of value.⁶

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The implication of this discussion is that the problem of trust in economic exchange is raised by the potential for opportunism inherent in investment in specific assets. Arguably, the contracting parties would avoid this problem if they could reach self-enforcing agreements. An agreement is defined as self-enforcing if the threat to terminate transactions (with a subsequent loss of business) if one party is caught cheating is sufficient to deter opportunism and ensure that contractual obligations are met. If such threats were sufficient, this would appear to resolve the problem of trust since each side would then be certain of the (rational) behaviour of the other.

The necessary conditions for self-enforcing agreements to be feasible have been enumerated in an interesting article by Telser (1980). His conclusions conform to the familiar results for infinitely repeated games which are discussed in this volume by Dasgupta.⁷ Firstly, the

⁵ <<200>> This is not to preclude the possibility of opportunism at the negotiation stage. Less trust implies that each side will take more costly measures to ensure that the other is truthfully disclosing their costs and revenues.

⁶ <<200>> This precludes the special hazard of fly-by-night firms. Suppose a subcontractor agrees to invest in a quality-improving asset (say a high-precision inspection device) for the purpose of a particular client’s order. They agree on a price per component that allows the subcontractor a certain percentage return on the investment. The subcontractor, who has no intention of maintaining the relation, dishonestly avoids the investment, delivers a product below the specified quality, and receives the agreed price. The problem is discovered only when the component is assembled in the final product, whereupon the client responds by terminating the relation. The subcontractor gains from cheating and faces no loss associated with having invested in a specific asset that is not fully salvageable. The argument rests, of course, on asymmetric information, the subcontractor knowing more about the quality of the component than the client. In the empirical section below I discuss the safeguards whereby firms seek to protect themselves from such hazards.

⁷ <<201>> See also Klein and Leffier (1982) for the case of quality assurance in final product markets.

sequence of transactions must be open-ended. There must always be a positive probability of continuing the sequence or else the relation will unravel. Secondly, for each player the discount rate has to be low enough for the one-off gains from cheating to be less in value than the expected net benefits that will be lost as a consequence of termination. Thirdly, the common knowledge assumption must hold. The players must share the knowledge that they share this ranking of the respective gains to be had from either violating or upholding the agreement.

There are two reasons why I believe this argument does not circumvent the need for trust. First of all it confuses information and trust. Clearly it is not enough for two firms to come together and share information on their costs and revenues. They also must trust each other's word. In other words, for common knowledge to play its assigned role in self-enforcing agreements there must exist a prior bond of trust between the contracting parties. Secondly, it does not adequately address the probability that unexpected developments in an unforeseeable future will trigger opportunistic responses. Trust will be essential to reassure those contemplating a long-term relation that adaptations to such future contingencies will be made in a jointly optimal way. The problem of trust in this context could only be avoided by making one of the following highly implausible assumptions about the nature of economic agents or the economic environment respectively. One could assume perfect rationality on the part of the actors: unlimited and costless ability to collect and process information. This would allow them to fully anticipate all relevant future eventualities. Alternatively one could simply assume what economists call a static world: a world without uncertainty due to exogenous events.

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In fact, with either of these admittedly unrealistic assumptions, it can be argued that the need for self-enforcing agreements would be eliminated due to the efficiency of third-party assistance in dispute resolution. If there were no limits to rationality, the two firms could costlessly negotiate a comprehensive agreement accounting for all possible circumstances. As Meade (1971) suggested, the world would be reduced once and for all to a giant higggle-haggle. Any subsequent efforts to alter the terms of the agreement could easily be rejected by the courts or by a third party as necessarily an effort to shift the distribution of joint gains to the favour of one side.⁸ Much the same conclusion follows if we assume a world without uncertainty. In such a world, lacking in unanticipated contingencies, it would likewise be easy to negotiate a comprehensive agreement which the legal system could efficiently enforce.

In conclusion, then, once firms are locked into a relation, trust is essential. The need for trust can be circumscribed through the efforts of the parties to engage in comprehensive contracting. But the limits to our rationality in a world where surprise is inevitable ensure that such efforts will be imperfect at best. Trust cannot be disposed of entirely. The implications of this for economic exchange are threefold:

- 1 The right sort of investments may not be made, since actors do not trust each other to refrain from abusing their bargaining power to renege on contract terms or to use a shift in circumstances to shift the division of profits in their favour.
- 2 A considerable amount of expense may go into fashioning safeguards designed to minimize the risks of being a victim of opportunistic behaviour. These expenses could be avoided if there were mutual trust.
- 3 More subtly, those in a bilateral monopoly may hesitate to demand legitimate adaptations to changed conditions, fearing such demands may cause conflict owing to a suspicion that they are in fact illegitimate, and intended only to change the agreed distribution of profits.

The theoretical discussion implies that given plausible assumptions about the economic world, trust has an important role to play in facilitating efficient contractual relations. Is this borne out

⁸ <<202>> This of course assumes that the courts are trustworthy. I make this assumption in the empirical section which follows, and I think it is a reasonable one. The French firms I interviewed never suggested that a concern over honesty prevented them from using the courts.

in practice? I now turn to <<203>> an interpretation of the empirical results, addressing in turn each of the questions raised in the introductory section. These results are based on interviews conducted with the managerial personnel of ten client firms, all located in the Lyons conurbation.⁹ The firms include the following subsectors of mechanical engineering: machine tools, textile machinery, packaging machinery, mining equipment, and industrial filters. They are not mass producers: their products are large, complex, customized, and expensive. As production is to order they find it difficult to predict their requirements with any accuracy beyond a horizon of six months to a year.

The size of the firms varies between 100 and 400 employees. In most cases, as noted, employment levels have declined since 1980, owing in part to improvements in productivity and in part to increased use of subcontracting. Even those firms with expanding sales are not taking on additional labour. With one exception the firms experienced a decline in sales between 1980 and 1982 and subsequently have recovered to varying degrees. The size of the subcontracting firms they use, with few exceptions, is between 3 or 4 employees and 60. The average is between 10 and 20.

The first point to be made is that there is extensive use of safeguards by client firms to minimize the possibility of being the victim of opportunistic behaviour and hence the need to rely on trust. There is an Italian saying which captures much of the sentiment: 'It is good to trust but it is better not to trust.' First, client firms prefer to solicit tenders from a minimum of three subcontractors in order to preclude an opportunistic distortion of production costs. They also prefer to split an order between a minimum of two subcontractors so that if difficulties develop with one it is possible to switch to the other. This practice may, of course, entail a loss of potential scale economies depending on batch size.

Once firms are locked into a relation owing to investment in specific assets, such policies no longer apply. It is then impossible to refer to the market to ensure competitive pricing. In the case of physical assets (machine tools etc.) it is extremely rare for subcontractors to invest in machinery specific to a particular client's requirements. I only came across one significant example. The problem potentially arises in the case of tooling, that is specialized dies and moulds for forging and casting, and specialized fixtures and cutting tools for component machining. But <<204>> risks are easily avoided: these physical assets are mobile and the client purchases them and retains control. If problems develop with one subcontractor the tooling is recovered and transferred to another. The rule is that subcontractors invest only in general purpose equipment. It is unclear whether this entails significant losses, however, since the more specific the machinery the less the sacrifice in scale economies from retaining production in-house. More suggestive of loss is the fact that when production of a particular type of component is carried out both in-house and externally (which does occur), the in-house machinery tends to be more specific.

Specific investment can take other forms, for example in training and skills. In the case of component machining this is relatively unimportant. As one production manager observed, 'nobody has a monopoly position in turning or milling.' There is a degree of skill specificity in the case of assembly work, and the general policy is that employees of the subcontracting firm undergo a period of on-the-job training in the assembly shops of the client firm before undertaking subcontracting on their own premises. In short, the costs of training in specific skills are borne by the client. The hazards implicit in such an arrangement no doubt help explain why so little assembly work is contracted out.

⁹ <<203>> The firms were initially visited in 1985. Five were revisited approximately one year later. In each case the production manager responsible for the firm's overall subcontracting policy was interviewed and in most cases so too was the buying agent. While these interviews constitute the principal source of information for this study, I also visited five subcontractors who work for three of the client firms. In each case I spoke to the owner or managing director. These interviews were less systematic than those conducted with the clients. The aim was simply to check for major discrepancies between the two sides' characterization of the subcontracting relationship.

Assembly subcontracting poses a further hazard of the fly-by-night kind through private information on quality. In the case of individual component production, quality can be readily controlled. The client firm is as technically knowledgeable as the subcontractor. As a rule individual components are inspected on delivery and payment is made only after ascertaining that they meet the stipulated standards. In the case of subassemblies or entire machine assemblies, however, it is impossible to check the individual components, and problems due to poor workmanship may appear some time after the machine has been sold to the final customer. According to the client firms, it is primarily this problem of quality assurance which discourages them from resorting to assembly subcontracting on a regular basis.

Quality can pose a serious problem when components are delivered at the last moment, thus holding up completion of the machine and its delivery to the customer. This is costly since firms face severe penalties for late delivery on contracts which can sometimes amount to over £1 million. The risk of late delivery, accompanied by poor quality or not, is apparently the most difficult to safeguard against. Bear in mind that we are not talking about standardized components. The market cannot supply an instantaneous replacement; nor can the component easily be produced in-house.

In such cases, how is the firm to interpret a request from the subcontractor for an extension on delivery? Is it a legitimate request due to an <<205>> unanticipated machine breakdown or some other unfortunate difficulty? Or is it opportunistic, the work having been taken on in the full knowledge that the capacity to complete the order on time was lacking? Given the difficulties of verification, repeated problems of delivery lead to the latter conclusion, with the subcontractor being dropped. When client firms say a subcontractor is trustworthy they invariably have in mind the question of prompt delivery as well as quality and price.¹⁰

Even when a subcontractor takes the precaution of investing solely in general purpose equipment it is possible to be locked into a relation. This occurs when a generalized capacity expansion is made only because of the prospect of selling a large amount of a particular product to a particular client. If the contract is then prematurely terminated the subcontractor is left with a large overhang of excess capacity that can only be sold off at distress prices. This clearly was recognized as a problem by the subcontractors interviewed, though they had varying degrees of success in coping with it. One quite successful subcontractor, for example, stated that occasionally it found it necessary to refuse orders from established customers so as to avoid the risks of a high degree of dependency. Others, who had grown up in close association with individual firms, had over 50 per cent of their sales directed to a single client. In such cases the loss of that client could prove crippling.

One of the most interesting results of the study is that not only do subcontractors seek to diversify their clients in order to reduce the risks of dependency, but so too do client firms. The accepted rule among the engineering employers of Lyons is that orders should be limited to between 10 and 15 per cent of a subcontractor's sales. The maximum figure is set to avoid the possibility of one's own market difficulties having a crippling effect on the subcontractor. Any figure less than 10 per cent, however, would imply too insignificant a position in the subcontractor's order book to warrant the desired consideration.

Effectively, then, clients put themselves in the position of the subcontractor in determining the optimal level of orders, much as game theorists have argued they should. From the subcontractor's perspective a reliable client is one who maintains a level of work. If a client firm wants a subcontractor to take its interests into account on recurrent contracts regarding quality

¹⁰ <<205>> Another potential hazard is that the subcontractor, recognizing his enhanced bargaining power at such times, will demand an increase in the contract price, claiming perhaps exceptional breakdown costs. In the short run the client may have no choice but to accede to the demand. A number of firms described such instances. There do not appear to be any effective safeguards. The only response is to seek an alternative supplier while completing the contract and subsequently break off the relation.

and delivery, it is simply not acceptable to pull the work back in-house (assuming this were possible) whenever the firm faces a fall in final demand. Quantity adaptations also pose a trust <<206>> problem. How is a subcontractor to interpret a decline in the level of work from a particular client? Is the client facing legitimate difficulties, or is it opportunistically pulling work back in-house having first encouraged a capacity expansion? In the case of dedicated capacity expansions of a general purpose nature, quantity adaptations can be quite as contentious as price adaptations.

The 10 to 15 per cent figure seems to represent an optimum. It allows the client a degree of flexibility without undermining the viability of the subcontractor, and at the same time ensures the client is considered sufficiently important to make a continuing relation of interest.

This brings us to my second point, the meaning of the term 'partnership' or the expectations implicit in the moral contract. Partnership clearly implies something more than what is stated on the order form. It is not merely a question of not buying more than you know you can pay for. It seems rather to involve the following: in exchange for improved performance by the subcontractor on quality and delivery, the client firm will make every effort to guarantee a level of work; furthermore, any adaptations to price, quantity, and delivery are to be made in a non-opportunistic way by both sides, with full disclosure of the relevant information. In particular, this implies that the subcontractor will not be unconditionally dropped if a differential in terms of price or quality emerges with respect to competitors. Rather, clients stated that they operate a system of advance warnings; a reasonable period is allowed to their partner to match the competition. It also implies that clients will not pull back work in-house each time product demand falls. A number of firms observed explicit sharing rules to resolve problems associated with uncontrollable fluctuations in demand. A typical procedure was to guarantee that a constant fraction of work would be produced both in-house and by subcontractors regardless of the absolute level of output.

To sum up, partnership entails a long-term commitment and reflects a condition of mutual dependency where both client and subcontractor are in a position to influence the other by their behaviour. Partnership is a set of normative rules, determining what behaviour is permissible and what constitutes a violation of trust. The rules are designed to facilitate exchange in a situation otherwise open to exploitation.

The third point under consideration is the role of reputation in assuring compliance with the terms of the 'moral contract'. To put this question in another way: do firms rely on reputation alone in determining whether to trust each other? The evidence suggests that reputation is important but no substitute for experience. My information pertains primarily to the client's perception of the subcontractor and I would not want to exclude entirely the likelihood of asymmetry here. The client firms are comparatively visible, being prominent members of the Lyons <<207>> engineering community and in most cases larger than the subcontractors. My interviews suggested that they are acutely aware of their reputation for reliability. When asked how they signalled their trustworthiness to potential subcontractors, they invariably referred to this.

But let us consider the conditions necessary for reputation effects to deter defection, here defined as violating the implicit terms of the partnership relation:

- 1 Common knowledge: all defections have to be made public. This does not simply mean a public announcement. It has to be possible to distinguish between real and bogus claims, to know who really was the offending party. This is frequently impossible.
- 2 The defector has to pay the full penalty: the firm cannot simply change its management team and ask for and receive forgiveness from the community.¹¹

¹¹ <<207>> One client firm, close to bankruptcy in 1980 and now supported by the state, was actively trying to improve its reputation for reliability. Management spoke as if the world began in 1983. The success of the

These are stringent conditions. In general, it is clear that client firms do not rely solely on reputation to determine the trustworthiness of a subcontractor, in the sense of his willingness to uphold the terms of the moral contract. To know whether a subcontractor is trustworthy (and this is my fourth point) they rely additionally on their own experience. One manager said a minimum of a year and a number of contracts was required, though he claimed that after three months he had an intuitive sense of how things would turn out based on personal contact with his opposite number. Another firm gave the figure of two to three years. During this period they operated a conscious testing process. Initially short-term contracts were given, it being understood that renewal would depend on performance. Once satisfied, a one-year contract was offered in which for a fixed price they guaranteed a level of work. At this point, according to the manager, the two firms were partners.

Time and experience were critical elements in deciding whether or not to trust. This suggests, much along the lines of Good's argument (this volume), an incremental notion of trust, of trust being built up in successive stages. It should be stressed, however, that it is not simply a question of registering performance on successive contracts and assigning a probability of trustworthiness on that basis. Invariably interviewees stressed the need for personal contact, and a number of firms stated that geographical proximity was desirable because it facilitated this. Thus one manager observed: 'It is important to visit and to talk, to know each other. This is partnership. If we know each other it is easier to resolve problems and to <<208>> adjust. So the closer we are to each other the easier it is. The RhôneAlpes has an advantage owing to the availability of subcontractors.

How are we to interpret this stress on the importance of personal relations? Is this evidence that friendship or caring is involved in efficient economics? Are we to conclude that trust between firms depends on bonds of friendship between the respective employers or managers? From the structure of this paper you can probably foresee that my answer is negative. It would be difficult to explain how trust could be present as often as it is in subcontracting if it were to depend on sentiments of friendship. If this were true, we would have to adopt in the economic sphere Hawthorn's (this volume) conclusion in the political: that any attempt to produce trust which was not in fact an attempt to produce something else, something self-reinforcing, must fail. It seems implausible to entertain feelings of friendship for someone when it is realized that he or she is acting in a friendly way solely for the purpose of facilitating an economic transaction.

I interpret the stress on personal contact in a different way and as primarily to do with a pervasive problem in continuing economic relations: the need to adapt to contingency. Personal contact facilitates this by allowing for an easier exchange of information. You learn about the other person's idiosyncracies and together you forge a special language which permits more sensitive interpretation. In short, you develop what might be called an understanding.

This is what I take the French managers to mean when they say they know each other and are partners. Perhaps this relation can best be conceived as an intermediate level between friends and stranger, for which capitalist societies have developed a distinctive tolerance. Of course, nothing I say precludes the possibility that those involved in recurrent economic relations may develop deeper personal bonds and that this may also become a reason for trusting. But the evidence of French subcontracting shows that such bonds are not a necessary precondition for trust. If this interpretation is correct, then there is nothing to prevent firms (if they consider it worth while) making a concerted effort to inspire confidence. Certain types of behaviour, certain types of personal contact involving the exchange of information and the giving of mutual assurances, plus a considerable time for the consistency of one's behaviour to be observed and tested: an effective combination of these things will surely enhance a reputation for trustworthiness.

publicity campaign was not entirely clear, but there was no evidence that this firm experienced greater problems with subcontracting than others in the region.

IV

Economists generally assume that the narrow pursuit of interest results in efficient economic exchange. The aim of this paper has been to dispute this assumption.

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The theoretical section addressed two issues: to determine the conditions under which the need for trust develops in relations of economic exchange, and to show that business interests cannot negate that need because human rationality is limited and the environment is uncertain. Trust is crucial when contracting parties invest in specific assets, locking them into a relation. Limited rationality means that efforts to protect ourselves from opportunism through comprehensive contracting will inevitably be deficient. Rational comprehensive contracting is impossible. Trust is expedient.

The empirical investigation of machinery producers and their subcontractors in Lyons illustrates these themes. Firstly, it indicates that promoting trust is costly. In addition to the time it takes to establish a personal rapport between client and subcontractor, it involves a set of policies referred to as partnership. Client firms offer substantial guarantees on the level of orders and prices in exchange for improved performance on quality and delivery. Secondly, it demonstrates that while trust is costly, lack of trust is more costly still. Without the long-term commitment of partnership, the client's use of subcontractors is dictated by the changing demands of his market. This makes the subcontractor's orders volatile. Volatility inhibits quality-improving investment in up-to-date technology. It discourages flexibility in recontracting terms. Competitive success increasingly depends on cooperation as requirements for quality have escalated internationally and markets have become more uncertain. Clients should be called upon to recognize their dependence on subcontractors in this respect. Thirdly, it is apparent that where possible clients and subcontractors limit the dependence that creates the need for trust in the first place. Subcontractors avoid investing in capital equipment or skills specific to the client's needs. For similar reasons, clients avoid subcontracting final assembly operations. These are general rules with few exceptions: the exceptions that occur do so within trust.

Finally, the broader implication of this research is that trust can be created intentionally. This is not to preclude multiple mechanisms. Trust between firms in Lyons may have resulted in part from the shared values of community members. Yet it is clear that trust was more than a by-product of actions directed towards other ends. This was amply demonstrated in the practice of partnership, which sacrifices short-term gains for the long-term benefits of mutual cooperation.

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