Cambridge Journal of Economics 1999, **23,** 301–315

Trust, contract and economic cooperation

Edward Lorenz*

After providing a brief overview of the standard economic analysis of incomplete contracts in terms of property rights, transaction costs and self-enforcing implicit contracts, the author shows why, in the orthodox view, trust is not a pertinent category to their negotiation or effectiveness. Drawing on various empirical studies which he has undertaken in the area of industrial relations, the author develops an alternative approach to the study of incomplete contracts in which the concept of trust is central. In this alternative vision, boundedly rational agents with limited foresight form provisional judgements about the trustworthiness of their trading partners based on the success of their past encounters. A consequence of this alternative understanding of incomplete contracts is that there is no guarantee that cooperation will succeed, even when the circumstances appear to promise mutual gain. The author argues, however, that by establishing an appropriate set of procedural rules to guide their response to the unanticipated, agents can promote the kinds of mutual learning that contribute to the build-up of trust and that increase the likelihood of successful cooperation

Introduction

Standard economic theory has attached little importance to the role of such social ties as trust, friendliness or loyalty in market exchange. This can be explained by the assumption of perfect rationality which allows agents costlessly to negotiate comprehensive contracts accounting for all future contingencies relevant to the terms of their exchange. In such a world, trading partners need not fear that unanticipated developments in an unforeseeable future will trigger opportunistic responses because third-party contract enforcement would be efficient. Once the complete contingent contract is signed, any subsequent effort to alter the terms of trade could easily be rejected by the courts as necessarily an effort to shift the agreed distribution of joint gains to the favour of one side.

This vision of a world governed by comprehensive agreements had always been difficult to reconcile with the pervasiveness of incomplete contracts in the real world, especially in the case of long-term or recurrent trading relations. In practice, as economists such as O. E. Williamson (1985) have stressed, long-term contracts often amount to little more than framework agreements which depend on-going discussions and negotiations to assure mutually acceptable adaptations to unanticipated events. One of the most notable recent developments in economics has been the effort to bring incomplete contracts within the purview of orthodox theory. In the first section below I briefly review the economic theory of incomplete contracts. I point out why trust is not relevant to the orthodox economic analysis of incomplete contracts. In the following three sections I develop an

Manuscript received 19 March 1997; final version received 20 October 1997.

*Université de Technologie de Compiègne, France.

© Cambridge Political Economy Society 1999

alternative approach to the study of incomplete contracts based on my empirical research in the area of industrial relations. The concept of trust is central to this alternative vision.

The economic theory of incomplete contracts

One might reasonably anticipate that the economic literature on incomplete contracts would address the problem of trust. This follows from the pragmatic argument that individuals will only risk entering into incomplete contracts if they trust their trading partners to adapt to the unexpected in a manner that respects a fair division of economic returns. In practice, the notion of trust has not found its place in the economic analysis of incomplete contracts because the assumptions of perfect rationality and complete foresight allow the problem of uncertainty to be reduced to one of calculable risk.

In orthodox economics, incomplete contracts are analysed in one of three ways: in terms of property rights, in terms of transaction costs, or in terms of self-enforcing implicit contracts. In each case there is a problem of *moral hazard*, where one party to a transaction may undertake an action that effects the value of the transaction to the other party, who is not able to monitor the action perfectly or to enforce it through the use of a binding contract. We shall briefly consider these three cases.

The key hypothesis of the property rights literature is that an appropriate distribution of ownership rights to assets will ensure their efficient utilisation. This follows from the premise that the owner of the assets controls the residual stream of revenues from their productive use after payment of factor inputs at competitive market prices. The basic argument is that the owner of the assets, as the residual claimant on economic returns, will have an incentive to ensure that they are used in as efficient a manner as possible so as to maximise the net return.

This idea can be illustrated with the frequently cited study of Grossman and Hart (1986) concerning the vertical integration of two firms, a vendor who is contracting with a supplier for the production of a good.[1] The model has two periods. In the first period each firm makes a dedicated investment decision, and in the second each makes a production decision. Each firm's second period production decision has an impact on the value to the other firm of making its first period investment decision.[2]

The authors assume that it is impossible for the firms to write a binding contract on their first period investment decisions owing to their not being verifiable to third parties. Further, despite the fact that the firms know in the first period what the second period production decisions will be (there is no uncertainty), it is assumed that these production decisions are non-contractable in the first period owing to the excessive cost of writing a complete contingent contract. This is where the problem of *moral hazard* comes in, since each firm will have an interest in arranging its production decision in a way that neglects the interests of the other firm while favouring its own interests. Given the inability of the firms fully to internalise the marginal benefits of their investment decisions, each has an incentive to inefficiently under-invest.

The authors show that it may be possible to improve upon this result if one of the firms acquires the assets of the other. Vertical integration gives the acquiring firm full control

[1] Their argument is developed mathematically and I have restricted myself to presenting the intuition behind their basic results.

[2] The authors illustrate this idea with the example of an electricity generating plant that uses the coal of a nearby coal mine in order to make electricity. We can think of the mine's production decision as the quality of the coal and the generating plant's production decision as adapting its equipment to accept coal with impurities.

over both of the second period production decisions, although it is assumed that it does not give control over the acquired firm's investment decision or the acquired firm's ability to appropriate any benefits from this investment.[1] Vertical integration may have positive effects because it ensures that at least one of the firms has an incentive to invest at an efficient level. Suppose the supplier's benefits from making the first period investment are highly sensitive to the production decision of the vendor. Vertical control by the vendor would be inefficient in this case because it would lead the supplier to under-invest. On the other hand, if the supplier's benefits are rather insensitive to the production decision of the vendor, while the vendor's benefits from making the first period investment decision are highly sensitive to the production decision of the supplier, then vertical control by the vendor would be advantageous. It would discourage the vendor from under-investing, while having little impact on the investment decision of the supplier.

The results of the analysis of Grossman and Hart correspond to the basic insight of the property rights literature that ownership should go to the agent best able to make use of those assets. It needs to be stressed, however, that determining which property-rights regime is optimal depends critically on the firms being able to anticipate correctly in the first period the second period production decisions, and so to determine correctly the returns to various ownership arrangement. In this manner the decision of whether to trust the other firm is reduced to a problem of calculation.

Williamson, who is most closely associated with the development of the transaction-costs approach, has criticised the property rights literature for assuming that all relevant bargaining issues can be resolved in a comprehensive *ex ante* contract over asset ownership. He criticises this assumption for its neglect of *ex post* contract problems of incentives' alignment between owners and their agents (Williamson, 1985, pp. 27–9). In practice, he argues, non-standard contractual arrangements may be devised to ensure sequential decision-making and to facilitate the resolution of *ex post* disputes.

While Williamson's critique would seem to open the way to an analysis of how trust might facilitate sequential decision-making, in practice this has not been the case owing to his conviction that 'calculative relations should be described in calculative terms, to which the language of risk is exactly suited' (Williamson, 1993, pp. 485–6). Consider his frequently cited model of subcontracting relations involving the use of 'hostages' to ensure efficient contract pricing. Williamson's model, unlike that proposed by Grossman and Hart, assumes uncertainty. It concerns a case where the subcontractor can reduce his/her unit costs and the break-even price s/he charges a client firm by investing in a technology that is highly specific to the client's needs. This poses a risk for the subcontractor, since if an unanticipated fall in final demand price leads the client firm to cancel the order, the subcontractor will only be able to adapt the specific technology to the requirements of other clients at considerable expense. This risk encourages the subcontractor to invest in the higher unit-cost general purpose technology with the result that the overall level of economic efficiency is reduced (Williamson, 1985, pp. 169–75).

Williamson proposes the following non-standard contract to solve the problem of an *ex post* breach of contract. At the time the initial contract stipulating that the subcontractor invest in the specific technology is signed, the client posts a bond with a third party with the instructions that the bond should be paid over to the subcontractor in the event that the order is cancelled. The amount of this bond is set such that the supplier breaks even in the event of order cancellation. The client, who is assumed to know the probability

[1] For this reason, Perry (1989) argues that their model provides an analysis of 'vertical control' rather than vertical integration.

attached to all future contingencies, undertakes to post the bond insofar as his/her expected net returns are greater than in the case where s/he does not post the bond and the subcontractor adopts the less efficient general purpose technology. In this case the problem of whether to trust is reduced to one of calculable risk.

As a final example of the way trust is eliminated from the orthodox analysis of incomplete contracts, consider Kreps's (1990) game-theoretic model of reputation.[1] The model can be applied to any situation where the possibility of *ex post* breach of an implicit contract[2] discourages the vulnerable party from entering into a contractual relation. To illustrate the approach, however, I shall consider the problem of employee participation, which I discuss later in this article in the context of an analysis of recent debates over labour law reform in the United States. Suppose a firm asks its employees to offer suggestions for improving shop-level productivity in exchange for an informal agreement not to lay off employees. The risk the employees face is that their productivity-improving suggestions will allow the firm to eliminate their jobs, thus giving the firm an incentive to renege on its guarantee of employment.

The logic of Kreps's argument is that employee participation can nonetheless be ensured by the interest the firm has in maintaining its good reputation among the community of potential employees. If an *ex post* breach of promise leads to loss of reputation, the firm will find it difficult to persuade workers in the future to participate or will have to pay a premium for this participation. The basic conclusion is that insofar as the expected value of the future gains from participation is greater than the one-time gain from reneging on one's commitments, the firm will have an incentive to behave honestly. In this manner, the problem of trust between an employer and his/her workforce is reduced to an estimate of the costs and benefits of acting so as to maintain a good reputation.

An evolutionary approach to the study of incomplete contracts

I have spent some time presenting the orthodox economic analysis of incomplete contracts as a means of motivating my own conception of trust and distinguishing it from a deductive logic of economic optimising. One feature which is common to each of the examples discussed above is that only the future counts for decisions made in the present. The strong assumption here is that individuals have a complete list of the possible states of the world and can either correctly anticipate their occurrence or can unambiguously attach probabilities to their occurrence. Given this assumption, decision-making at a point in time can be modelled as depending on a comparison of the returns to various possible strategies or sequences of actions. Economic rationality requires that individuals reason in the opposite direction of time's arrow, from the future back to the present.

As an economic historian I have always been sceptical of both the descriptive and explanatory value of this conception of human decision-making.[3] My own work on the development of British and French industrial relations has made it clear to me that surprise and discovery are ubiquitous features of human interaction. This observation accounts for

[1] My summary description of Kreps's interesting work on reputation concerns his basic analysis which is modelled as an infinitely repeated prisoners' dilemma with complete information. The analysis of reputation based on the finitely repeated game with incomplete information is primarily interesting as a solution to the problem of backward induction. It does not alter the basic conclusion I draw concerning how the problem of trust is reduced to a problem of calculation in his analysis. Much the same point has been made by Williamson (1993, pp. 466–69) in his critique of the notion of 'calculative trust'.

[2] An 'implicit contract' refers to any contract which cannot be enforced by a third-party owing to its being non-verifiable.

[3] For a related critique of the neoclassical approach to contract, see Deakin and Wilkinson (1995).

my interest in Simon's notion of 'bounded rationality', which refers to those limits on human foresight and computational powers that preclude determining the optimal solutions to complex decision-making problems. Faced with an inability to determine the substantively rational course of action, Simon (1976) has argued that individuals will seek to improve the quality of the information upon which their decisions are based and to put in place appropriate procedures to guide their deliberation. The 'reasonable' behaviour which emerges from this process can be considered to be 'procedurally rational'.

Within this cognitive framework one is not confined to explaining behaviour deductively in terms of optimal calculation, as in the orthodox analysis of utility maximisation or profit maximisation. One can also take into account the importance of inductive learning processes and consider how an individual's understanding of the environment—his/her list of possible states of the world—and expectations concerning the behaviour of others may evolve through processes of trial and error and insight. In this alternative approach there is a place for the development of a notion of trust which remains pertinent to the study of economic exchange despite its not being reduced to a calculation of expected returns. Trust can be defined as the judgement one makes on the basis of one's past interactions with others that they will seek to act in ways that favour one's interests, rather than harm them, in circumstances that remain to be defined. Trusting judgements inevitably remain tentative, rather than certain, since they are based on a limited knowledge of others rather than a precise calculation of their interests. Correspondingly, there is nothing to preclude that trust will be transformed into mistrust as knowledge and information are accumulated.

One implication of this view is that there is no guarantee that individuals will come to share the degree of trust necessary to cooperate, even in situations where the benefits to be derived from cooperating seem evident. As the following account of my work on industrial relations in the British shipbuilding industry shows, even in such settings a legacy of conflicting relations may lead the actors to behave in ways that reinforce their mutual suspicion. This relates to a second argument that I develop in the two sections below dealing with long-term subcontracting relations and with employee participation in managerial decision-making. In keeping with the spirit of Simon's approach, I shall argue that incomplete contracts provide a procedural framework designed to guide the response of the parties to unanticipated contingencies. The procedural rules which the actors put in place will have an impact on the kinds of experiences and interactions they have and correspondingly will have an impact on what they learn about each other and about the surrounding environment. The argument, then, seeks to link the processes which determine the nature of contractual relations to those which determine how individuals know what they know.[1]

The importance of trust for administrative innovation

The importance of the past and of judgements concerning trust are illustrated in my historical work on the decline of the British shipbuilding industry between 1945 and 1975.[2] In order to demonstrate this to the reader, it is necessary to present a summary

[1] In this sense the argument seeks to link the ontological question of how individuals become what they are to the epistemological question of how they know what they know. For this point I am indebted to an unknown referee.

[2] See Lorenz (1991 and 1990). British shipbuilders' share of world export markets declined from over 60% in 1913 to 20% in 1936–38. Foreign producers, principally Japanese, Swedish and German, increased their share of the tonnage delivered to the UK fleet from a paltry 3·2% in 1951–55, to 38·3% for the period 1961–65 and to an overwhelming 74% for 1966–70 (Lorenz, 1991, pp. 8–10).

description of the industry's structure. Market and technological conditions in British shipbuilding in the late nineteenth and early twentieth centuries fostered the development of a highly fragmented industrial structure and a relatively decentralised system of work administration which I refer to as the craft system. In terms of the allocation of decision-making authority, the craft system can be characterised by its reliance on the skills and discretion of occupationally specialised skilled workers for the coordination of the work process at the shop level.

In terms of labour market relations, the system displayed considerable flexibility, as skilled workers were highly mobile on the local labour market, shifting among the yards concentrated in particular regions as each producer's demand for particular types of occupational skills varied over time. The use of hire and fire policies by employers encouraged workers to seek a 'property-rights' position not in terms of a career within a particular enterprise, but in terms of a right to operate particular types of machine or to work with particular materials in any shipyard they happened to find employment. Skilled and semi-skilled workers alike formed occupationally-based unions in an effort to enforce such rights and protect their employment opportunities on a regional and national basis.[1] An intricate system of work rules was established, which were partially codified in formal demarcation contracts negotiated between the employers and the unions.

Union organisation in this context inevitably took on a defensive character, for even minor changes in machinery or materials could advantage one occupational group at the expense of another.[2] While these characteristics of the craft system arguably made the industry prone to the problem of distrust, I argue that such tendencies were exacerbated by the employers' response to initial economic decline during the inter-war period. The counterpart to British employers' failure to undertake serious organisational reform during the inter-war period was their widespread use of strategies of wage-cutting, work intensification and layoffs to lower costs, leaving methods of work administration fundamentally unaltered. While these strategies did little to forestall longer-term decline in British producers' market shares, the conflicts they engendered reinforced workers' perceptions of the employment relation as a zero-sum game.

The legacy of distrust engendered by such distributional conflicts proved inimical to the performance of the British shipbuilding industry after the Second World War, when its continued success depended on organisational reform. During these years rapid growth in world demand for ships and increasing standardisation of ship design conferred the competitive advantage on firms using more bureaucratic systems of planning. This progressively undermined the international competitiveness of the British craft system. In the early 1960s, following a sharp fall in industry profitability, the British Shipbuilding Employers' Association initiated national negotiations with the unions for a comprehensive reform of existing demarcation rules. The legacy of distrust, however, meant that this initiative was met with suspicion and resistance on the part of the unions, and national-level negotiations ultimately broke down.

It was only during the second half of the 1960s, following more protracted decline and numerous plant closures, that workers generally came to recognise the need for organisational reform. Tragically, given the legacy of distrust in labour–management relations, it

[1] By the end of the nineteenth century a high degree of union organisation had been achieved by the skilled workers who imposed formal apprenticeship requirements for entry to the trade. Seventeen unions organised the majority of skilled workers and the closed shop prevailed in the major yards. There was a smaller number of unions catering to the unskilled grades (Lorenz, 1991, pp. 55–57).

[2] The history of the shipbuilding industry is rife with demarcation conflicts. See Lorenz, (1991, pp. 110–14) and Wilkinson (1973).

required the visible pressures of bankruptcy and plant closure, which were perceived as originating outside the managerial hierarchy, to legitimate the need for reform among all the actors.

The history of British shipbuilding suggests a conception of the contractual rules regulating employment relations quite different from that developed in the property rights or transaction-cost literatures referred to above. Rather than a solution to the problem of achieving efficient exchange and production, the shipbuilding case suggests that contractual rules, both codified and informal, reflect a compromise based on the actors' recognition that, while each side has an interest in sustaining cooperation, each side also has an interest in shifting the terms of the contract to their own advantage. This helps explain why negotiating changes in the rules may prove difficult. How should individuals interpret proposed changes? Are they proposals for legitimate and mutually advantageous change? Or are they efforts by one side to shift the terms of the agreement to their advantage? Given the limits to our rationality and the possibility of opportunistic behaviour, it is not surprising that changes promising mutual advantage may provoke resistance and arouse suspicion. In the absence of trust, rules may become rigid simply because no one wants to risk the consequences of breaking the compromise.[1]

How trust comes about in inter-firm relations

As David Kreps (1990, p. 119) has observed in his analysis of reputation and implicit contracts, reputation must be for something. The efficacy of reputation effects in enforcing implicit contracts depends on the contractual terms being unambiguous and on the wider community being able to observe whether they are complied with. If these conditions were not met, it would be impossible for community members to make a judgement as to the honesty of their potential partners. In the case of contractual disputes they would be unable to make clear judgements as to whose claims were bogus. The inability of the wider community to make such judgements would clearly reduce the value to the individuals involved in contractual relations of always acting so as to maintain their good reputation. For example, in the case of implicit agreements over worker participation, if the terms of the agreement are ambiguous or compliance with them is not observable, management may be tempted to renege on its commitments, to lay off its current workforce, and to seek new recruits who are prepared to cooperate on the same terms as the previous employees.

It was partly my interest in exploring the limits of the reputation argument that led me to undertake a study of long-term subcontracting relations in the machine-building industry of Lyon (Lorenz, 1988 and 1993). I was persuaded that the conditions necessary for the efficacy of reputation arguments are often violated in the case of such long-term contractual relations, marked as they are by unanticipated market and technological contingencies. This raised the question of what other contractual or non-contractual mechanisms might contribute to the viability of such partnerships.

The study was based on interviews I conducted with the management of 10 producers ranging in size from a low of 39 employees to a high of 500 employees. The firms, which produced sophisticated equipment or machinery, mostly operated in internationally

[1] In Lorenz (1994) I extend this argument to account for the slow pace of administrative innovation in the British textile and car industries after the Second World War. In Lorenz (1992), on the other hand, I show how trust among a community of firms may contribute to the types of information exchange and cooperation that enhance their capacity for technological and organisational innovation.

competitive markets, with exports accounting for over half of their annual sales.[1] At the time of my initial interviews in 1985–86, the majority of the firms were experimenting with new subcontracting procedures based on the principle of establishing long-term relations with their subcontractors. They described the new relations as a partnership (*partenariat*). It is important to appreciate the novelty of what they were introducing. All the firms had made prior use of subcontracting for certain specialised operations, such as heat treatment and gear grinding. In 1985–86, however, innovative firms were instituting subcontracting on a long-term basis for such standard operations as milling, drilling, turning and plate bending, which they had traditionally performed in-house except during periods of peak demand, when capacity constraints had forced them to turn to the external market. The shift of production from in-house to external sourcing was often accompanied by a reduction in capacity, with some existing plant being sold off.

I returned to the region during the summer of 1990 and revisited certain of the firms I had previously interviewed. I also interviewed representatives from the local employers' association and engaged in extensive discussions with academics familiar with local conditions. These interviews and discussions made it clear that the *partenariat* system of subcontracting had been widely adopted by metal-working firms in the region between 1986 and 1990.

The establishment of long-term relationships posed risks for both the clients and subcontractors for the sorts of reason referred to above in the discussion of the transaction-costs literature. For the subcontractor, the main risk was that the client might prematurely terminate a contract after the subcontractor has made a generalised capacity expansion because of the prospect of selling a large quantity of output to a particular client. For the client, the principal risk was late delivery or delivery of poor-quality components. This is costly because the client firms often faced stiff penalties for late delivery on machinery contracts which individually could exceed $1 million.

The firms argued that the build-up of trust helped them to cope with these risks. The need for trust is related to the fact that they regulated their relations with what they termed 'moral contracts' (*contrats moraux*) rather than with detailed written contracts. As a rule, the only written document was the order form, which served as a reference point for on-going discussions. Their reluctance to specify their obligations in formal contracts was a response to the uncertain markets they operate in, which precluded specifying in advance exactly what clients expected of their subcontractors. It was understood that adaptations to unanticipated contingencies might have to be made if the relationship was to continue. This required a foundation of trust as a basis for arriving at acceptable terms.

The basic conclusion of my research is that the *partenariat* system of subcontracting can be understood as a set of implicit *procedural rules*[2] that contributed to the build-up of trust between the clients and the subcontractors by providing guidelines for how they should act when faced with unanticipated contingencies. Three procedural rules are central in the *partenariat* system of subcontracting used by Lyon machinery builders. The first rule concerns risk sharing. The client firms informally offered their subcontractors partial guarantees as to the amount of work they would make available on a long-term basis. The guarantees took various forms. The firms I studied that were engaged in the production of

[1] For details on the products and size of the firms, see Lorenz (1993, p. 314).

[2] Procedural rules should be distinguished from more domain-specific substantive rules which serve to model the environment and to determine the actions to be taken in particular circumstances. The purpose of procedural rules is to create substantive rules and to modify and improve them when faced with novel circumstances. See Lazaric and Lorenz (1998) for a discussion.

agricultural machinery and haulage equipment provided annual guarantees to their subcontractors on the absolute amount of work they would provide in exchange for guarantees on price. Other firms I studied, including the producers of textile equipment and corrugated cardboard machinery, argued that the uncertainty they faced in their own markets precluded offering long-term guarantees on the absolute level of work and they had adopted a policy of guaranteeing their partners a fixed percentage of the work available.

A second procedural rule, referred to as the 10–15% rule, both allowed the client firm some flexibility in the absolute amount of work it sourced to a subcontractor and ensured that the subcontractor valued the client sufficiently to make a continuing relationship of interest. The maximum was set at 15% to avoid the possibility of the client firm's own market difficulties having a crippling effect on the subcontractors, thus creating the kind of circumstances that would tend to foster ill-will and mistrust. Any figure less than 10%, however, would have implied too insignificant a position in the subcontractor's order book to warrant the desired consideration.[1] The 10–15% rule contrasts with the prior preference of many firms for highly dependent subcontractors who lacked bargaining power in price negotiations.

A third procedural rule, which I call the 'step-by-step' rule, prescribes that the firms should start by making small commitments to each other and then progressively increase their commitments depending on the quality of their exchange. For example, a typical procedure would be for a client firm initially to ask for details over the phone of the subcontractor's capacity, equipment and particular areas of expertise. This would be followed by a personal visit to verify the information and negotiate an initial small order, with the assurance that a longer-term contract would follow, depending on performance. A second visit would be made while the components were being produced in order to assess the subcontractor's methods, including quality control. Successful completion of the first order would be followed by a somewhat larger second order, and, contingent on performance, a third, after which the subcontractor was made a partner. Most of the firms stated that this process required a minimum of a year.

In short, trust was built up through a learning process. Small risks were followed by larger ones, contingent on the success of cooperation. The importance of time and experience in deciding whether or not to cooperate points to the limits of the argument that reputation alone can account for the success of long-term contractual relations. The client firms were certainly concerned about the reputations of their suppliers—they refrained from initiating relations with suppliers that had sullied their reputations as regards quality or delivery. In this sense, reputation played an important role by providing certain basic assurances upon which a long-term partnership might be constructed. However, given the impossibility of specifying in advance exactly what they expected from a subcontractor if a good reputation was to be maintained, the clients felt the need to learn how the subcontractor would respond to the unanticipated before undertaking the risk of a long-term commitment. It seems likely that the clients appreciated the reciprocal nature of this learning process. As a purchasing agent whom I interviewed noted, 'trust is earned and is reciprocally and mutually merited'.

[1] This rule can also be seen as a mechanism for reducing the amount of appropriable quasi-rents and so reducing the likelihood of opportunistic behaviour. For this point I am indebted to an anonymous referee.

Trust, learning and employee participation

The discussion in the previous section shows that the incompleteness of contracts, and the associated inability to calculate one's interest precisely in pursuing alternative courses of action, need not constitute an insurmountable barrier to establishing cooperative relations. Faced with such limits to determining the substantively rational course of action, individuals can put in place procedural frameworks designed to guide the ways they adapt to the unanticipated so as to promote the build-up of trust. In this section, focusing on some recent debates concerning labour law reform in the United States, I both provide further support for this view and qualify it in important respects. Procedural frameworks are necessarily open to varying interpretations and they leave open scope for varying behaviours and strategies. Procedural frameworks can provide favourable settings for trust building, but they cannot guarantee it. There is nothing to preclude the actors from making choices that promote a negative sort of learning dynamic, leading to mistrust rather than trust.

The United States is a country marked by a history of adversarial industrial relations. Interest in the possibility of mandating employee involvement in managerial decision-making has increased over the past decade, with the perception that internecine conflict at the workplace has damaged the competitive position of US manufacturers relative to producers in such countries as Germany and Japan, where workplace industrial relations are known to be more cooperative. The perceived stakes in this debate were heightened in 1993–4 by the expectation that the Clinton Administration would undertake significant labour law reform. In 1992, John Dunlop was appointed head of the Commission on the Future of Worker Management Relations with responsibility for examining 'what (if any) methods or institutions should be encouraged, or required, to enhance workplace productivity through labour–management cooperation and employee involvement?'[1]

From an internationally comparative perspective, much of the academic discussion on worker participation in the US has centred around the productivity advantages of the German model of industrial relations and the possibility of duplicating these advantages by legally requiring US employers to establish German-style works councils (see, for example, Wever and Allen, 1992; Rogers and Wooton, 1992; and Freeman and Lazear, 1996). It was my conviction that the admirers of German works councils were drawing an overly mechanical relation between co-determination legislation and the relatively cooperative nature of labour–management relations observed in many German plants which led me to delve into the secondary literature on the post-Second World War development of the German model of industrial relations (see Lorenz, 1995). There is considerable evidence that the forms of cooperation which we take as characteristic of plant-level industrial relations in Germany today were the product of a lengthy period of learning and trust building.

Recent work by such German industrial relation scholars as Berghahn (1986) and Markovits (1986) on the construction of the German model during the late 1940s and 1950s has pointed to important elements of continuity with the conflictual industrial relations characteristic of the Weimar Republic. Berghahn's account of the 1950–52 conflicts over the national extension of the 'Dinklebach' model of co-determination[2] makes it clear that the more conservative employers, backed by the Bundesverband der

[1] See *Final Report and Recommendations of the Commission on the Future of Worker Management Relations* (January 1995).

[2] The Dinklebach model, which was established in the British zone in 1947, provided for union–employer parity on the Supervisory Boards of coal and steel firms.

Deutschen Industrie (BDI),[1] were highly mistrustful of the unions and were seeking to eliminate any formal union role within German companies. Markovits's (1986) account of these events shows that the 1952 Works Constitution Act, which applied to all industrial sectors except coal and steel, was perceived as a major defeat by the DBG, the national confederation of German unions. The act contained a number of clauses unacceptable to the unions, including provision for less than workforce parity and no direct union input on the Supervisory Boards of companies, and legal restrictions on the union activities of works councillors while inside the plant (Markovits, 1986, pp. 80–3).

In the metal-working sector, the response of the national union, IG Metall, to this defeat was initially a defensive one, designed to neutralise the works councils, which the union feared would constitute a competing, non-union form of worker representation. From the mid-1950s, IG Metall mounted a plant-level drive to create union shop-steward committees alongside the works councils in order to strengthen the union's position and to exercise control over the works councils. The union also pragmatically pursued the strategy of actively campaigning to fill the works councils with its own members (Thelen, 1991, p. 78). While the history of the shop stewards' campaign goes beyond the scope of this article, it is generally agreed that the unions failed to achieve their aims. According to Streeck (1984, pp. 28–31), the emerging reality during the 1960s was in most cases one of works council domination of the union shop stewards. This failure helps explain the strategic change in IG Metall's position during the 1960s. Rather than aspiring to compete for workers' allegiance through establishing an alternative representative to the works council, the union came to see the works council as a vehicle for influencing plant-level decision-making through the active participation of its members elected to the councils.

On the employers' side, a similar process of learning and adaptation occurred during the 1950s and 1960s. Berghahn (1986), in his detailed account of the evolution of employer attitudes after the Second World War, argues that an important factor in this process was the role played by the Bundesvereinigung der Deutschen Arbeitgeberverbände (BDA), the employers' association responsible for the social welfare and collective bargaining interests of German employers. Under the leadership of such moderates as G. Erdmann and W. Raymond, the BDA acted as a buffer against the more conservative BDI, while also playing a pedagogic role in urging its regional and branch associations to pursue regular collective bargaining with employees and their organisations (Berghahn, 1986, pp. 230–59).

This all too brief sketch of the institution of works councils in Germany suggests that there was considerable scope for conflict and discord between labour and management within the confines of the post-Second World War legislation. Rather than seeing the growing success of labour–management cooperation at the workplace in post-war Germany simply as an automatic consequence of legislative constraint, the events I have referred to suggest an interpretation which parallels that presented above for the case of subcontracting in Lyon. Legislation provided a procedural framework within which the actors could interact and learn about the likely behaviour of their partners when confronted with various contingencies. A significant implication of this view is that the success of labour–management cooperation in Germany was far from inevitable. It implies that had the actors chosen differently within the confines of the legislative framework, a quite different learning process might have occurred, leading to a less cooperative

[1] The BDI holds responsibility for employers' economic and commercial policy issues, while a separate national organisation, the Bundesvereinigung der Deutschen Arbeitgeberverbände (BDA), is responsible for social and collective bargaining issues.

outcome. While in my opinion such counterfactual propositions are not provable, I shall argue in what follows that the recent French effort to mandate direct forms of employee participation at the shop level under the terms of the 1982 Auroux Laws supports the general proposition that the strategic choices of employers, workers and their collective associations can derail well-intended legislation for participation.

The Auroux Law of 4 August 1982 called for employers and local union representatives (or works councillors in the absence of a local union) in firms with 200 or more employees to negotiate agreements for the creation of worker expression groups which would allow workers to express directly to management suggestions on a range of topics, including working conditions and the introduction of new technology. Legislation in 1986 extended the coverage of the law to firms with 50 or more employees (*Bulletin Social Frances Lefebvre*, 1993).[1]

In addition to achieving only a partial diffusion of decentralised forms of participation,[2] most assessments of the legislation point to serious problems with the form of the agreements and with the way the expression groups have operated. First, the majority of the agreements are restricted to specifying procedures for setting up groups, including their composition, how the leader is to be selected and the number of hours of discussion per year. They offer little or no guidance on what the content of group discussion should be. Second, surveys and case-study evidence on the operation of expression groups show that in most cases they have served as forums for workers to pose questions to or make demands on management, mainly in the area of working conditions such as safety and the pace of work. In general, they have not functioned as devices for drawing on workers' knowledge and creative ideas on how to improve productivity (Coiffineau, 1993; Liaison Sociales, 1993; Tchobanian, 1992, pp. 108–12).

This outcome can be explained in part by the expressed opposition of the principal national employers' associations to the legislation, which feared that the expression groups would be used by the unions to advance their sectional interests at plant level. The Union des Industries Métallurgiques et Minières (UIMM), the national association of employers in the metal-working industries, actively encouraged employers to set up quality circles operating alongside and in direct competition with the expression groups.[3]

Opposition to the legislation was also expressed at national level by two of the three principal union federations, Force Ouvrière (FO) and the Confédération Générale du Travail (CGT), which feared that the direct expression groups would weaken local unionism by offering workers alternative forms of representation. Unlike FO and the CGT, the other principal union federation, the Confédération Française Democratique du Travail (CFDT), actively championed the expression groups and encouraged its local representatives to negotiate agreements with management. For this reason, it is significant

[1] The legislation corresponds to the kind of scenario identified in the US literature as favouring effective worker participation. The French state acted to mandate decentralised participation through the intermediary of the local union or work council, rather than aspiring to determine directly the conditions of shop-level participation.

[2] Between 1982 and 1984, some 4,000 agreements were signed concerning approximately 2,500,000 employees, and by 1990, following the extension of the law's coverage, agreements had been signed in 25,434 plants, or about 50% of those covered by the law, and involving some 4 million employees. A 1990 Ministry of Labour survey of a representative sample of 3,000 firms with over 50 employees estimated, however, that groups were active in only about 25% of the plants covered by the law; a 1993 survey based on a representative sample of 3,000 firms estimated that expression groups were active in about 29% of firms (Liaisons Sociales, 1993, pp. 1–10; DARES, 1994).

[3] The 1990 survey sponsored by the French Ministry of Labour referred to in the preceding note estimated that 23% of firms with over 50 employees were operating quality circles in 1990, roughly the same percentage as were operating direct expression groups (DARES, 1994, p. 3).

that, even in the case of the CFDT, local representatives generally adopted a defensive posture in their negotiations with management. A recent survey, reported by Tchobanian (1992, pp. 108–115), of the attitudes of 100 local trade union representatives CFDT who were involved in negotiating the introduction of the direct worker expression groups indicated that the most common tactic was to seek operational procedures which would ensure the maximum independence of the groups and of the content of workers' expression from managerial influence. While according to Tchobanian's account this approach reflected a mistrust of management, it was also adopted with the idea that the local union could strengthen its bargaining position by following up on group demands. In short, the local union representatives in most cases perceived the expression groups as a strategic resource in their adversarial bargaining relations with management. In only a few cases did CFDT activists seek to use the groups as instruments for drawing on workers' creative knowledge for improving production methods. In these few cases, works council representatives, in making use of their consultation rights over the introduction of new technology, would encourage the groups to make preliminary studies which they would draw on before expressing an opinion to management (Tchobanian 1992, pp. 108–10).

The generally disappointing performance of the direct expression groups in France suggests that mistrust between employers and unions can be a serious obstacle to the effectiveness of legislation for participation. Unions and employers voiced the typical fear that the expression groups would be used as a strategic resource by the other side to increase their power and command over resources within the firm. Such concerns often led to actions designed to thwart the legislation, as with the decision of many employers to create quality circles alongside and in competition with the groups, or with the refusal of many local unions to participate in the negotiations.

Conclusion

There exists an important tension in the orthodox economic analysis of incomplete contracts. On the one hand, orthodox theory recognises that the pervasiveness of incomplete contracts reflects the inability of economic agents to anticipate all the contingencies relevant to their long-term trading relationship. On the other hand, the theory argues that agents are able to pick out among the possible contractual arrangements the one that promises the highest expected return.

In this article, I have drawn on my empirical work in industrial relations to develop an alternative approach to the study of incomplete contracts in which boundedly rational agents with limited foresight form judgements about the trustworthiness of their trading partners based on the success of their past encounters. In this alternative vision of economic cooperation, the purpose of incomplete contracts is not so much to enforce commitments as to provide a framework agreement within which on-going discussions and negotiations can facilitate their sequential adaptation. An inevitable consequence of this alternative understanding of incomplete contracts is that there is no guarantee that cooperation will succeed, even when the circumstances appear to promise mutual gain. If mistrust is too deeply embedded, owing to a legacy of conflictual relations, the actors may be unwilling to bear the inevitable risk involved in entering into a long-term contractual relation.

I have argued, however, that by agreeing from the start on an appropriate set of procedural rules to guide their response to unanticipated contingencies, agents can promote the kinds of mutual learning that contribute to the build-up of trust and which increase

the likelihood of successful cooperation. One of the key procedural rules, which I have called the step-by-step rule, is that agents start with small risks and increase their commitment of resources depending on the quality of their interaction. This simple and intuitive principle helps resolve those paradoxes of the orthodox approach which derive from the orthodox premise that agents will only take the first step towards cooperation if they can fully anticipate the future, and if they are able to calculate the expected return from the entire sequence of their future interactions.

Bibliography

Berghahn, V. 1986. *The Americanisation of West German Industry: 1945–1973*, Cambridge, Cambridge University Press

Bulletin Social Frances Lefebvre 1993. Les Lois Auroux dix ans après, April, 185–95

Coiffineau, M. 1993. Les Lois Auroux dix ans après: rapport au Premier Ministre, Paris, La Documentation Française

DARES 1994. Le developpement recent des politiques de motivation des salariés, Paris, Ministère du Travail, April

Deakin, S. and Wilkinson, F. 1995. 'Contracts, Cooperation and Trust : The Role of the Institutional Framework', ESRC Centre for Business Research Working Paper 10, University of Cambridge

Eaton, A. and Voos, P. 1992. Unions and contemporary innovations in work organisation, compensation and employee participation, in Mishel, L. and Voos, P. (eds), *Unions and Economic Competitiveness*, Armonk, M. E. Sharpe

Freeman, R. and Lazear, E. 1997. An economic analysis of works councils, in Rogers, and Streeck (eds), 1992

Grossman, S. and Hart, O. 1986. The costs and benefits of ownership: a theory of vertical and lateral integration, *Journal of Political Economy*, vol. 94, 691–719

Kelly, M. and Harrison, B. 1992. Unions, technology, and labor–management cooperation, in Mishel, L. and Voos, P. (eds), *Unions and Economic Competitiveness*, Armonk, M. E. Sharpe

Kreps, D. 1990. Company culture and economic theory, in Alt, J. and Shepsle, K. (eds), *Perspectives on Positive Political Economy*, Cambridge, Cambridge University Press

Lazaric, N. and Lorenz, E. 1998. *The Economics of Trust and Learning*, Cheltenham, Edward Elgar Press

Levine, D. and Tyson, L. 1990. Participation, productivity, and the firm's environment, in Blinder, A. (ed.), *Paying for Productivity*, Washington DC, Brookings Institute

Liaisons Sociales 1993. Bilan des Lois 'Auroux' dix ans après, April, no. 29

Lorenz, E. 1988. Neither friends nor strangers: informal networks of subcontracting in French industry, pp. 194–210 in Gambetta, D. (ed.), *Trust: Making and Breaking Cooperative Relations*, Oxford, Basil Blackwell

Lorenz, E. 1990. Une explication évolutioniste du déclin de la compétitivité: la construction navale Britannique, 1890–1970, *Travail et Emploi*, no. 46, December, 66–81

Lorenz, E. 1991. *Economic Decline in Britain: The Shipbuilding Industry, 1890–1970*, Oxford, Oxford University Press

Lorenz, E. 1992. Trust, community and cooperation: toward a theory of industrial districts, pp. 195–204 in Scott, A. and Storper, M. (eds), *Pathways to Industrialisation and Regional Development*, London, Routledge

Lorenz, E. 1993. Flexible production systems and the social construction of trust, *Politics and Society*, September, 307–24

Lorenz, E. 1994. Economic decline in twentieth-century Britain: the cotton, shipbuilding and car industries, *Industrial and Corporate Change*, vol. 3, no. 2, 379–403

Lorenz, E. 1995. Policies for participation: lessons from France and Germany, *The German Journal of Industrial Relations*, vol. 2, no. 1, 46–63

Markovits, A. 1986. *The Politics of the West German Trade Unions*, Cambridge, Cambridge University Press

Perry, M. K. 1989. Vertical integration: determinants and effects, ch. 4 in Schmalensee, R. and Willig, R. (eds), *Handbook of Industrial Organisation*, Vol. I, New York, North Holland

Rogers, J. and Wooton, B. 1992. 'Works Councils in the United States: Could We Get There from Here?' Draft, University of Wisconsin, Madison

Simon, H. 1976. From substantive to procedural rationality, pp. 129–48 in Latsis, S. J. (ed.), *Methods and Appraisal in Economics*, Cambridge University Press

Streeck, W. 1984. *Industrial Relations in West Germany: A Case Study of the Car Industry*, New York, St. Martin's Press

Streeck, W. 1994. Promoting systemic change in industrial relations: creating the condition of effective workplace participation, paper presented to the Conference on International Evidence, US Commission on the Future of Worker–ManagerRelations, Washington DC

Tchobanian, R. 1992. Negotiation collective et participation dans l'entreprise en France: vers de nouveaux equilibres? in Ambrosini, S., Gandon, M., Gautry, J., Laville, J. and Tchobanian, R. (eds), *Participation et Modernisation de l'Entreprise en France*, Milan, Franco Angeli

Thelen, K. 1991. *Union of Parts: Labor Politics in Postwar Germany*, Ithaca, Cornell University Press

Wever, K. and Allen. C. 1992. Is Germany a model for managers? *Harvard Business Review*, September–October

Wilkinson, F. 1973. 'Demarcation in Shipbuilding', unpublished paper

Williamson, O. E. 1985. *The Economic Institutions of Capitalism*, New York, Free Press

Williamson, O. E. 1993. Calculativeness, trust and economic organisation, *Journal of Law and Economics*, vol. 36, April