Employees and Entrepreneurship

Co-ordination and Spontaneity in Non-hierarchical Business Organizations

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An important way in which firms have been handling the problem of internally dispersed knowledge, or the double Hayekian knowledge problem, is by decentralizing decision-making through flattening of organizational hierarchies. This process has been given many different names: decontrolling, demanaging, empowering. They all refer to the same process: removal of some, or all, layers of middle management and giving employees the power to make some, and in some cases many, decisions. Managers and/or owners voluntarily transfer some power to 'call the shots' to the employees. In other words, the owner 'chooses who gets to be the decision-maker in production, that is, whether the organizational structure will be participatory or non-participatory' (Minkler 1993a, p. 18). Decentralized firms are participatory in the sense that non-top-management workers participate in the decision-making in the firm. In some cases the decision-making is limited to an employee's own narrow sphere of operations, but in other cases the decision-making granted to employees encompasses even long-term strategy. In addition, the proper amount of decision-making decentralization fitting the particular circumstances often cannot be known in advance, but rather must be discovered by the owners/managers through a process of dynamic interaction between the firm and the markets in which it operates.

An interesting example of just such a case can be seen in a 1989 *Harvard Business Review* article, 'Managing without Managers' by Ricardo Semler, president of Semco S/A, Brazil's largest marine and food-processing machinery manufacturer (at least at the time). The article attempted to explain the radically decentralized managerial structure in his company. It was not a very large company (only 800 employees), and it did not deal in work that most people would think of as knowledge work – it was basically a manufacturing company. Semco reduced 'management levels to three – one corporate level and two operating levels at the manufacturing units' (p. 78): the top level consisted of five 'counselors' including Semler himself; the intermediate level was formed of heads of eight divisions referred to as 'partners'; the bottom layer consisted of all other employees, 'associates' and 'coordinators'. As Semler put it, 'Counselors, partners, coordinators and associates. Four titles. Three management layers' (ibid.). The company combined the flat managerial structure with a system of profit sharing. The reason that the employees were allowed to claim a share of the profits was that, though Semler was the president of the company, he was not the key decision-maker in his own company:

> We insist on making important decisions collegially, and certain decisions are made by a company-wide vote. Several years ago, for example, we needed a bigger plant for our marine division, which makes pumps, compressors, and ship propellers . . . [T]he workers voted [on which of the three available buildings the company would acquire] – and they chose a plant the counselors didn't really want . . . But we accepted the employees' decision, because we believe that in the long run, letting people participate in the decisions that affect their lives will have a positive effect on employee motivation and morale. We bought the building and moved in. The workers designed the layout for a flexible manufacturing system, and they hired one of Brazil's foremost artists to paint the whole thing, inside and out, including the machinery. That plant really belongs to its employees. I feel like a guest every time I walk in. I don't mind. The division's productivity, in dollars per year per employee, has jumped from $14,200 in 1984 – the year we moved – to $37,500, and for 1989 the goal is $50,000. Over the same period, market share went from 54% to 62%. Employees also outvoted me on the acquisition of a company that I'm still sure we should have bought. But they felt we weren't ready to digest it, and I lost the vote. In a case like that, the credibility of our management system is at stake. (pp. 78–9)

In addition, Semco employees were expected to read and understand the company balance sheets (Semco provided classes to teach them to do so) and to 'question the management decisions that affect future profits' (p. 82). It is because of this that Semler can say that:

> Marketing is everybody's problem. Everybody knows the price of the product. Everybody knows the cost. Everybody has the monthly balance sheet that says exactly what each of them makes, how much bronze is costing us, how much overtime we paid, all of it. And the employees know that 23% of the after-tax profit is theirs. (p. 84)

Semco is, to be sure, an extreme case, but it successfully illustrates the measures that some companies are – successfully – taking to become more competitive. If Semco did not actually exist, I am certain that most economists would confidently claim that such an intra-firm structure is the stuff of fairy-tales; and yet Semco showed dramatic productivity gains and became the market leader through these practices.

The scant existing economic literature on hierarchical decentralization has explained the success of such firms strictly in epistemological terms: '[T]he primary advantage of participatory organizations may lie in their utilization of dispersed knowledge' (Minkler 1993a, p. 18) and 'The decentralized structure produces knowledge that would be impossible to produce in a different organizational structure' (Sautet 2000, p. 127).

In decentralized structures a greater amount of knowledge is utilized simply by giving the decision-making power to those workers who are in the best position to make the decisions. Oticon is another effective example. In

Chapter 1, I described Oticon's experimentation with radical decentralization of decision-making as a response to loss of market share and the threat of bankruptcy. Oticon was in trouble because it did not keep up with competitors' innovations, which mostly centered around the development of an in-the-ear hearing aid. Once the decentralization was undertaken, it was soon discovered that Oticon employees, working independently of the company commands and unbeknownst to their managers, actually did develop the in-the-ear hearing aid technology, but owing to the inflexibility of the hierarchical organizational structure existing at the time they were unable to bring the product to the manufacturing stage. The management did not think to tap the knowledge of their employees until Kolind restructured the company and made it radically decentralized (he referred to it as the 'spaghetti organization'), as seen in the following quote:

> One of the things soon to be realized when the spaghetti organization became a reality was that Oticon actually already had almost fully developed an in-the-ear hearing aid back in 1979 . . . A result of the spaghetti organization was that work on the old in-the-ear hearing aid could be resumed. (Foss 2001c, p. 12)

And:

> [A] basic problem in the old organization had been that commercially important knowledge simply didn't reach the relevant decision-makers. A reflection of this is the example . . . of Oticon employees already having invented the in-the-ear hearing aid, that invention basically being shelved and forgotten until the spaghetti organization recovered it. (Ibid., p. 14)

The decentralized organization form is often the result of the managers recognizing that they themselves cannot make a decision that is as good as the decision that the employee will make, because the managers do not possess the proper knowledge to do so. Oticon was decentralized based on this assumption, and CEO Kolind was proven absolutely correct, as the above anecdote shows. This knowledge asymmetry is obviously very relevant in the areas of knowledge work, as discussed above, and, to the extent that more work is becoming knowledge work and the workers are becoming more knowledgeable, decentralized organizational forms are likely to become more common.[15]

Though decentralization of decision-making has innate logical appeal in the cases of knowledge work, we find it being tried even in manufacturing. The accepted wisdom in manufacturing firms has been that the workers are there simply to carry out the work which has been precisely set out for them through specified orders handed down from above. There was not much consideration given to the possibility of dispersed knowledge in

manufacturing settings. However, this status quo has been increasingly challenged. Minkler presented a dramatic example of decentralization in manufacturing:

> Saturn automobile company, a semi-autonomous division of General Motors, is another example of an American firm that recognizes the importance of the dispersed knowledge. The company has a flat hierarchy and employs teamwork and worker participation. The workers belong to the United Automobile Workers Union and were chosen from GM's other plants based upon their motivation and desire to work in a cooperative environment. From the very conception of the plant's design workers were involved in all stages of decision-making. They have continued to exert significant decision-making authority and responsibility. At Saturn any production worker (called member) can stop the production line – but if she does she has the responsibility to correct the problem. The intent is to develop an organization that fosters commitment and that promotes ideas which can be used not only at Saturn, but at GM's other facilities as well. (1993b, pp. 573–4)

Saturn's organizational structure would have been unthinkable in the US even 20 or 30 years ago. But more recently there have been many examples of manufacturing firms with decentralized decision-making not only surviving but actually thriving, as Minkler explains:

> Evidence suggests that manufacturing workers possess and can develop significant knowledge and are the source of important ideas and innovations, especially process innovations and especially in conducive environments. Many, if not most, Japanese industrial firms have recognized this and are using organizational innovations like employee participation, team production (cooperative rather than hierarchical or sequential decision-making), just-in-time inventory systems, and employment guarantees. (1993b, p. 572)

As Minkler points out, Japanese firms were the pioneers in the area of decentralization of decision-making, many of them eagerly adopting the managerial techniques introduced by William Deming. But with a few exceptions,[16] economists have largely ignored the unique managerial and organizational advances made by Japanese firms. In fact, as I asserted above, the economic profession in general has mostly turned a blind eye to the decentralization developments. Foss also draws attention to this fact:

> From an Austrian point of view, it is striking that the [modern economics of organization] has focused almost exclusively on the negative aspects of decentralization, that is, to the extent that it has treated decentralization in organizations at all. Large firms may confront knowledge dispersal problems of magnitude comparable to those that confront the social planner in a socialist economy. . . .the Hayekian point that decentralization is an effective response to

> the local emergence of unforeseen contingencies is either neglected or given a static mechanism design interpretation. (Foss 1999, p. 471)

Foss emphasizes the superior 'response to unforeseen contingencies' as the main benefit of decentralized decision-making, an issue not studied much in modern economics, mostly owing to the great difficulty of mathematically modeling dynamic factors in the face of uncertainty. In light of this, it shouldn't be surprising that we find the most fruitful discussion of decentralization of decision-making in management literature, as Foss also recognizes:

> There is, in fact, an enormous management literature that explicitly addresses how to handle the knowledge dispersal problems (not just the incentive problems) that exist in, typically, multinational firms. The focus is normally on choosing the right degree of decentralization . . . The literature explicitly begins by rejecting the idea that top management in large firms, such as [Asea-Brown-Boveri], can simply centralize all the relevant knowledge and issue in a top-down fashion the relevant commands to different business units. This is seen as plainly absurd; and the arguments advanced in favor of this judgment are closely related to Austrian arguments against central planning: the size, complexity, and partially tacit character of the relevant knowledge, in addition to the need for flexibility and local adaptation, makes centralization not only inefficient, but truly impossible. Firms must resort to other means to handle dispersed knowledge. (Foss 1997, p. 187)

Management is a practical discipline, so maybe it is to be expected that on this issue it was ahead of economics:[17] management theory follows managerial practices, and the practitioners do not have the luxury of assuming away the very real problem of internally dispersed knowledge. In attempting to handle the knowledge problem, managers discovered this tool of decentralization of decision-making. As Mises explained in *Bureaucracy* ([1944] 1983), this is the result of even division managers being ultimately guided by the bottom line of profit: managers must in the end contribute to a larger firm profit to justify the operation of their divisions, and in some cases the divisions run by the managers who gave greater decision-making power to their employees showed a consistently better performance, maybe owing to the enhanced response to the unforeseen contingencies mentioned above.

Allowing the employees with the greatest knowledge of time and place to make the appropriate decisions will give firms the greatest 'capability to react quickly to change' and 'promote innovation' (Minkler 1993b, p. 569). This response to unforeseen contingencies, noted by Foss as the central benefit of decentralization, becomes more important as a market becomes more rivalrous, and survival no longer depends simply on cost

minimization but rather rapid adjustment to unexpected actions by competitors. Minkler explains the benefits of decentralization in the following way: '[A]s global markets demand greater flexibility, on-the-spot decisions become crucial and workers become "knowledge" workers – they come to have decision-making advantages over superiors higher up the hierarchy' (Minkler 1993b, p. 569).

We can see that desire for flexibility in the following example by Langlois:

> [IBM]'s hierarchical structure, internal sourcing procedures and elaborate system of controls made it too inflexible to respond well to a rapidly changing market. As a result, IBM chose in effect to disintegrate vertically into the production of PCs. The company 'spun off' a small group of executives and engineers, exempted them from IBM internal sourcing and other procedures, and treated them as, in effect, a venture-capital investment . . . IBM's motives for *disintegration* were . . . the need to gain rapid access to capabilities that would not otherwise have been available in time. (1994b, pp. 177–8, italics in the original)

To the extent that the spin-off was still a part of IBM, the process described by Langlois is better understood as a case of limited decontrolling or decentralizing rather than vertical disintegration, which would require sale of the division. IBM officials understood that there was much locally held knowledge which could not be utilized under their standard hierarchical structure. In other words, the internal structure, while successful in co-ordinating the activities of the giant company, also stood in the way of speedy development of a product necessary to remain competitive in a rapidly changing market. IBM managers removed the constraints of a hierarchical decision-making in order to create the flexibility to respond to a market challenge.

Langlois draws a general conclusion that is closely applicable to the above examples:

> The hypothesis I propose generalizes this idea: *the more radical the change – the more radical the deviation from the customary path – the more abstract will be the institutions necessary to change, create, or otherwise redirect concrete capabilities in an effective direction*. If this hypothesis is right, then, the best way for an organization to plan for the future, especially an unpredictable future, is to emulate in some degree a spontaneous order. (1994a, p. 21, italics in the original)

In light of Langlois's hypothesis, I claim that firms with decentralized decision-making are consciously and intentionally endeavoring to become more like organic orders (which feature spontaneously evolving abstract rules). They do so in order to spur greater use of the knowledge dispersed among a firm's employees and thus to better cope with unexpected changes created through rivalrous market competition.

Even Alfred Chandler, often ascribing almost superhuman powers to managers, recognized the benefits of decentralization and demanaging, as can be seen in the following passage:

> Yet the dominant centralized structure had one basic weakness. A very few men were still entrusted with a great number of complex decisions . . . As long as the enterprise belonged in an industry whose markets, sources of raw materials, and production processes remained relatively unchanged, few entrepreneurial decisions had to be reached. In that situation such a weakness was not critical, but where technology, markets, and sources of supply were changing rapidly, the defects of such a structure became more obvious. (Chandler [1962] 1990, p. 41; in Sautet 2000, p. 114)

These comments imply that a tradeoff of some sort is present as firms change their internal structures.[18] Decentralization appears to be most appropriate during times of rapid change. It is then that firms must have the greatest flexibility, greatest use of dispersed subjective knowledge held by their employees, and greatest ability to create new knowledge, embodied in new products and processes. We see this explained by Bill Gore, founder of the radically decentralized W.L. Gore & Associates:

> I'm told from time to time that a lattice [decentralized] organization can't meet a crisis well because it takes too long to reach a consensus when there are no bosses. But this isn't true. Actually, a lattice by its very nature works particularly well in a crisis. A lot of useless effort is avoided because there is no rigid management hierarchy to conquer before you can attack a problem. (Shipper and Manz 1998, p. C-499)

The obvious question in light of this is, given that flexibility and the ability to create and use new knowledge are generally desired by all firms at all times, why is decentralization not *always* appropriate? I will answer this question in 'The organizational tradeoff between co-ordination and innovation' (page 00).

Delegation and Decentralization in Recent Economics Literature

There has been increasing interest in the issues of decentralization of decision-making in mainstream economics (Jensen and Meckling 1992; Aghion and Tirole 1997; Holmstrom and Roberts 1998; Hart and Moore 1999; Stein 2002; among many others). Most of this work has been focused on incentive and opportunism problems that are created by a decentralized decision-making structure (usually analyzed under the umbrella of agency theory and asymmetric information problems), and thus falls short of thoroughly dealing with the true intra-firm or double knowledge dispersion

problem as I explained above. In addition, these articles rely on mathematical models of decentralization of decision-making for analysis and are thus fundamentally constrained by the simplifications necessary to make the models tractable. Nevertheless, it is informative to take a brief look at this literature. The article that began this line of inquiry and set out the fundamental approach is Jensen and Meckling (1992). In this piece the authors consider two different types of knowledge that can exist within a firm: general and specific. Following Hayek (1945), they explain how the 'market automatically moves decision rights to the agents with the relevant knowledge' (Jensen and Meckling 1992, p. 252) when specific knowledge is difficult to transfer:

> Because it is costly to transfer, getting specific knowledge used in decision-making requires decentralizing many decision rights in both the economy and the firm. Such a delegation in turn creates two problems: the rights assignment problem (determining who should exercise a decision right), and the control or agency problem (how to ensure that self-interested decision agents exercise their rights in a way that contributes to the organizational objective). (Jensen and Meckling 1992, p. 251)[19]

This article was among the first anywhere to explicitly set out the tradeoffs of decentralization: on the one hand, costs due to the lack of use of existing relevant information in the case of too little decentralization (recognizing the existence of dispersal of knowledge within firms) and, on the other hand, 'agency costs' (principals' loss of control over agents) in the case of too much decentralization. Jensen and Meckling come to the conclusion that managers must weigh these two carefully in deciding the optimal allocation of decision rights.

Another influential article in this emerging field is Aghion and Tirole (1997). This article showed that the primary benefits of delegation consist of greater 'initiative' to acquire relevant information as well as more active 'participation' in the organization, since employees derive greater utility from work when they are able to make decisions rather than being commanded. Aghion and Tirole think of this primarily in terms of the asymmetric information problem: a principal can overrule the agent, but wouldn't want to if the agent is better informed. Another benefit of decentralization is the faster response in situations of urgency of decision-making: 'It is sometimes observed that the need to adapt quickly to customer requirements has forced firms to decentralized decision-making' (p. 24). They do not explain exactly why decentralized decision-making could be expected to bring about a quicker adaptation.

Following the precedent of Jensen and Meckling, Aghion and Tirole accept that the downside of decentralization is the standard one of loss of

control by principals. They hypothesize about one other interesting downside of centralization – worsened communication due to the threat of selective interventions by principals. If principals are likely to overrule the decisions made by the employees, though the decision-making was delegated to them, employees might respond by hiding relevant information in order to prevent selective interventionism. Aghion and Tirole discuss at some length different ways in which the principal can create the trust and/or credible commitment necessary to reduce the potential for selective interventionism, and thus encourage proper communication as well as provide better incentives for the agents to become better informed. One important insight is that principals may intentionally remain somewhat uninformed in order to increase their credible commitment to abstain from selective interventions.

Ultimately, Aghion and Tirole conclude that centralization prevails if the principal has the superior information, while decentralization prevails when the principal is not as well informed as the subordinate and thus fears the possibility that forcing her decision on the agent will lead to a worse situation.

A more recent article to consider decentralization within firms is Stein (2002), which asks the question 'what organizational form – decentralization or hierarchy – does the best job of allocating capital to competing investment projects?' (p. 1916). The main explanatory factor in this article is the existence of 'soft' information 'that cannot be directly verified by anyone other than the agent (the "line manager") that produces it', in contrast to 'hard' information that is easily verifiable and communicable. Soft information cannot be verified by upper management or the CEO. It is somehow unique to the person who has it, even if that person is located at the lower levels of the hierarchy. (Notice the similarity to Jensen and Meckling's use of 'general' and 'specific' information, closely corresponding to 'hard' and 'soft' information here.) The CEO will want to ensure that this soft information is used for the benefit of the firm (and that the agent engages in further 'research' – that he continue to accumulate more information and generate more ideas) so he will allocate sufficient capital to the decision-maker at a lower level in a hierarchy, such as a production line manager, in order for him to 'lever' his expertise. The implication is that in the presence of soft information firms should attempt to align authority over capital with expertise – in other words, decentralize the decision-making. However, when the information produced by the line managers is 'hard', Stein comes to exactly the opposite conclusion: 'separating authority from expertise actually improves research incentives, as line managers struggle to produce enough information to convince their bosses that they should get more of the firm's resources' (p. 1893). In many ways, we can

think of Stein (2002) as an extension of Aghion and Tirole (1997), with one key addition: a strong hierarchical structure will weaken incentives for the better-informed agents to properly utilize their information only when the information is 'soft'. In the presence of soft information, 'line managers are discouraged when they do not have full authority' (p. 1894) and will therefore engage in less 'research' and information generation. Finally, if the information can be 'hardened', the relative merits of a hierarchy will increase.

So, to sum up, in this emerging literature we see greater appreciation for the knowledge problem. The differentiation seen in Stein (2002) between 'hard' and 'soft' information and in Jensen and Meckling (1992) between 'general' and 'specific' information would seem to adhere at least somewhat to Hayek's differentiation between tacit and subjective knowledge of time and place on the one hand and more straightforward data-like, quantifiable knowledge on the other. Rajan and Wulf (2006), discussed at the beginning of Chapter 1, also introduce the idea of heterogeneity of information when speculating about the possible reasons why hierarchies are flattening:

> [G]reater competition may increase the complexity of the decisions that have to be made as well as the variety of data that impinge on the decision . . . Also, information may be hard to convey up a hierarchy with the necessary detail and color, thus reducing managers' incentive to collect it. (p. 23)

The insights generated by these articles are valuable, though ultimately incomplete, as I will show below. Nevertheless, it is good to see that economists in the mainstream of the profession are beginning to take the issue of intra-firm knowledge heterogeneity seriously, and I certainly hope that this sort of work on delegation and decentralization continues to be further explored.[20]

THE ORGANIZATIONAL TRADEOFF BETWEEN CO-ORDINATION AND INNOVATION

I have shown above that there is an emerging consensus that flexibility, and thus a greater ability to cope with change, is the main benefit of decentralization. This benefit is largely due to the fact that in decentralized-decision-making firms knowledge and decision-making are aligned. In addition, such firms are better at spurring *innovative* activities by their employees, which is conceptually distinct from (though not entirely unrelated to) making the best use individually held knowledge. These benefits have become widely recognized. But the proponents of decentralization

(especially Cowen and Parker 1997) tend to emphasize these upsides of decentralization without acknowledging any possible downsides. Their logic explicitly follows the following pattern: the greatest amount of decentralization in markets is desirable; decentralized firms emulate markets; ergo, the greatest amount of decentralization in firms is desirable. However, this is simply not so. The first reason is theoretical: decentralized firms *do not* emulate markets – they are distinct institutional forms that, though they may appear so, are not like markets. It should be clear that firms *are* fundamentally different from markets owing to the fact that they can never fully be an 'order', in the Hayekian sense of an institution featuring a system of rules that do not aim at any one purpose apart from allowing the individuals within the system to achieve their goals. Ultimately all firms have one over-arching final goal – to make profit. In order to achieve that goal they rely on conscious co-ordination to at least some extent. It is improper thus to attempt to draw analogies between markets and decentralized firms. The second reason why Cowen and Parker's logic is faulty is an empirical one: if there were only benefits to decentralization, we would observe many more real-world firms featuring radically decentralized decision-making than we actually do. Furthermore, we have seen radically decentralized firms *diminish* the extent of their decentralization and do very well (Foss 2001c). If decentralization were always superior to a hierarchy, it would be difficult if not impossible to explain such cases.

It should be clear that decentralization entails some costs and that there most definitely *are* benefits to the hierarchical institutional structure. Those benefits follow the traditional Coase/Williamson/New-Institutionalist theory: hierarchies can reduce transaction costs due to opportunism and bounded rationality. In broader terms, we can say that hierarchies can effectively create institutional stability and incentive co-ordination. Langlois explains it in the following way:

> A social institution, then, is a mechanism to reduce the entropy of the environment. The presence of such a mechanism means coordination, high payoffs, and, in this context at least, a rigid and predictable pattern of behavior by both agents. (1986b, p. 175)

The nature of the tradeoffs facing firms with decentralized decision-making should be clear: they must balance the costs of lesser stability and poorer intra-firm incentive co-ordination with the benefits of greater flexibility, better use of dispersed knowledge, and superior innovative capabilities. Finding the right balance appears to be a difficult task. Firms with successful decentralized decision-making replace explicit control systems with systems of abstract rules that are able to achieve some minimum

required amount of incentive co-ordination, but these systems of rules are very difficult to develop. As I will discuss in the next chapter, they must consist of both an organizational culture providing a thoroughly pervasive structure of intersubjective meanings and an effective system of incentives (team-production, profit sharing, and so on).

The above tradeoff, ever present in decentralized institutions, was first recognized by Ludwig Lachmann:

> In our view the central problem of the institutional order hinges on the contrast between coherence and flexibility, between the necessarily durable nature of the institutional order as a whole and the requisite flexibility of the individual institution. (1971, p. 13)

Lachmann was not talking about decentralization within a firm but rather within an extended market order. But this quote gets right to the heart of the matter as far as firms with decentralized decision-making are concerned, as well. The tradeoff is between the 'coherence' of a firm on the one hand and its 'flexibility' on the other. As a firm becomes more participatory, a greater number of individuals will be acting according to their own knowledge, interpretations, and desires, leading to an inevitable splintering of a firm's purpose and capabilities. In other words, the firm can and probably will lose some 'coherence': there will inevitably be less co-ordination of the actions of the employees, and therefore firms will be less stable and maybe even less enduring and robust. But a purely hierarchical firm will lack flexibility. An analogy that Hayek drew is of an army where each soldier's actions must be dictated by a superior. Such an army would be impossibly handicapped. These are the relevant tradeoffs faced by firm managers, and, unfortunately, they are not easily quantifiable, or often even explicitly understood *ex ante*.

What is not well recognized is that the internal structures of firms rarely stay fixed for a long period of time. Managers/owners can and do actively search for the proper level of institutional decentralization of decision-making through a process which combines trial and error, experience, and learning, all based on the judgments formed by their own subjective, tacit, empirical knowledge of the institutional characteristics of the firm. The internal structures of firms evolve through time: firms change, sometimes by design, other times spontaneously. They can acquire characteristics of an organic order for some period of time, which can be shed later as firms attempt to change into organic organizations, or even pragmatic organizations. They search for the best organizational structure for *that* moment in time – or, more precisely, the organizational structure most appropriate to the particular market circumstances that prevail at that moment in time.[21]

These tradeoff factors have rarely been accounted for in the normative study of institutional structures, that is, a study of optimal institutional structures, which led Langlois to make a case for a dynamic understanding of institutional efficiency:

> One implication of [a flexibility–efficiency tradeoff] is, in effect, that efficiency is not an absolute concept: it can't be defined independently of the organization's environment. A firm in a very rapidly changing environment may have very bad transaction-cost properties but be far more efficient – far better able to survive – than a relatively less flexible organizational structure with good transaction-cost properties in equilibrium. It's not clear how important this problem is in practice, although I conjecture that it may be quite significant in situations of rapid technical change. In any event, it's far from clear that one can't do comparative-institutional analysis in a way that accounts for these dynamic considerations. Most current analyses do seem to assume that the criterion for the organization's survival is efficiency in the allocation of resources rather than flexibility or something like it. (1986a, pp. 20–21)

In other words, New Institutionalist economists have been examining only the ability of firms to reduce the transaction costs of their operations but neglecting to examine their ability to be flexible in the face of market instability and rapid change. It is clear that firms with decentralized decision-making are unlikely to have very good transaction-cost-reducing properties, which explains why economists have been so suspicious of – or even hostile to – decentralized forms of institutional structures of firms. But firms with decentralized decision-making exist because their managers are willing to forgo some of that coherence if it will gain the firm better use of dispersed knowledge and greater innovative capabilities. We can go a bit further and also explain the limits of firm operations from the perspective of these tradeoffs. This is nothing new: management literature has taken the view for decades that firms are constrained in their size by their ability to handle dispersed knowledge, as Foss points out:

> Implicitly the knowledge dispersal problem is seen in this literature as determining the boundaries of the firm, for there is a point where the 'loss of control' is so overwhelming that it more than offsets any gains from, say, integrating one more line of business or making one more foreign direct investment. (Foss 1997, p. 187)

To the extent that this was the question that originally motivated Coase to study firms, fully incorporating the double knowledge (or the knowledge asymmetry) problem into the theory of the firm contributes an important element to the Coasian perspective.

All of these elements together form a solid foundation for a more thorough study of decentralized forms of organization. The work done on

decentralization by Langlois, Minkler, and Foss was of a peripheral nature: decentralization was not the center of their inquiry. Sautet (2000) was a large step forward in this area, as it explained decentralization as a way to generate new knowledge for the firm. However, Sautet restricts his examination of decentralization to the development and adoption of the multidivisional structure. I am interested in explaining the more radical application of decentralization of decision-making that we see in modern markets. So, though the work of the above scholars is important and a fundamental starting point, I hold that there is much more that remains to be explained about decentralization. I will suggest several new theoretical tools that I believe will be important in that study, tools that have not gotten much if any attention yet. It is the lack of understanding of these elements that recently led several economists working in the Austrian tradition to question the benefits of decentralization. I will discuss this next.

FOSS'S CRITIQUE OF INTRA-FIRM DECENTRALIZATION

Seemingly paradoxically, as the mainstream of the economic profession discovers the Hayekian knowledge problem in the process of attempting to explain the decentralization developments, a few of the more recent Austrian works in this field (Foss 2001a; Foss and Klein 2005; Witt 1998) have been emphasizing the importance of centralized control within a firm and de-emphasizing the benefits of a reduction of managerial hierarchies. The logic behind this development is summed up well in the following passage: 'Application of basic Austrian ideas suggests that the entrepreneur needs the relevant knowledge to organize the activities of his firm. In other words, the more important an individual's knowledge, the higher he should be in the hierarchy' (Garrouste 2002, p. 79). The primary question of decentralization of decision-making is who will get the decision rights within a firm, and the Austrian economists listed above increasingly answer that the 'entrepreneur' (in the sense of the owner or the CEO) will be the one with the greatest – or at least decisive – information and thus must be given the decision rights. They recognize that the Hayekian dispersion of knowledge within the firm exists and matters, but their claim is that it is dominated by the benefits of conscious control and co-ordination of productive resources (both capital and labor), a self-consciously Coasian perspective. This stands in stark contrast to the earlier contributions by Austrian economists in the field of the theory of the firm which, as I have shown above, tended to be generally supportive of intra-firm decentralization developments.

The most striking example of this reversal can be seen in the work of Nikolai Foss. In contrast to Foss 1997 and 1999, Foss 2001a, 2001b, and 2001c strongly question the logic of decentralization. In this series of articles Foss attempts to show the dominating benefits of authority (and the corresponding strongly hierarchical organizational structure), and the problems with 'hybrid' organizational forms (those combining aspects of markets and firms), in particular their instability (because they are not an organizational equilibrium). Foss is interested in showing that, even when decentralization is applied in 'knowledge firms', it does not work nearly as well as the proponents would make it seem. Recall that knowledge firms are most likely to exhibit an internal situation that Sautet defined as the 'double knowledge problem' and Minkler defined as 'asymmetric knowledge'. Foss explains this situation in the following way:

> One reason why authority is (allegedly) waning in importance is that it is becoming increasingly more difficult to monitor and direct workers, because of the specialist nature of knowledge work . . . [The principal] may be ignorant about members of the set of possible actions open to the agent, or the agent may be better informed than the principal with respect to how certain tasks should (optimally) be carried out, or both. (2001b, p. 4)

He goes on to say that, 'even in such a setting, it is possible to provide efficiency explanations of authority' (ibid.). Foss's argument is a direct response to Cowen and Parker (1997), as can be seen in the following passage:

> [I]t is argued that only those firms that emulate markets inside their internal organization to the largest possible extent will survive and prosper in the knowledge economy (Cowen and Parker 1997). The 'Coasian firm', characterized by well-defined boundaries, authority, etc. will, in contrast, wither. (2001a, p. 5)

I have already critiqued Cowen and Parker above: firms decentralized with decentralized decision-making do not emulate markets. They are alternative institutional forms that have their own characteristics and structures. It is not only overly simplistic to describe them as being 'market-like', but profoundly inaccurate: markets are (complex) systems of exchange based on money prices and property rights, neither of which is featured to any great extent within (considerably less complex) internally decentralized firms. The employees are not necessarily the owners of the capital that they utilize, and certainly very few firms with decentralized decision-making have internal exchanges based on 'prices'.[22] It is hard to understand how anybody could describe an institution that lacks both of these characteristics as market-like! We must come to the conclusion, as I did above, that

Cowen and Parker (1997) do not offer a good explanation of decentralization, and therefore any *critique* of decentralization based on their work should be immediately suspect.

And so it is with Foss (2001a), the central theme of which is that 'it does *not* follow that firms should emulate markets as far as possible' (p. 5, italics in the original). Foss presents a rather novel critique, though, pitting Mises against Hayek, in a manner of speaking.[23] Foss describes the 'pro-decentralization' literature as basically Hayekian, in the sense that there is an emphasis on the Hayekian knowledge problem.[24] But Foss objects that the Hayekian knowledge problem has been *over*emphasized in the pro-decentralization literature. As he says, 'the very fact that firms exist is *prima facie* evidence that they can somehow cope with the problems implied by Hayekian settings' (p. 14). And, according to Foss, while the knowledge problem has been overemphasized, the role of an entrepreneur-leader who holds ultimate authority has been greatly underemphasized. He backs up this claim by referring to Mises:

> In his critique of market socialism, Mises (1949) pointed to the folly of 'playing markets', and I draw on his overall argument that bringing coordination mechanisms characteristic of market organization into a planned organization is inherently problematic . . . I . . . argue that firms are also systems of complementary elements and that this fact places constraints on the extent to which firms may be made 'market-like'. In particular, I agree with Mises that '[t]he function of the entrepreneur cannot be separated from the direction of the employment of factors of production for the accomplishment of definite tasks. The entrepreneur controls the factors of production' (Mises 1949: 306). (2001a, p. 5)

We see in this paragraph that Foss derives two ideas out of Mises: 1) just as it is impossible to have intermediate forms of economic systems which combine elements of markets and socialism, so it is with markets and firms – we cannot 'arbitrarily' combine markets and firms and expect to create stable institutions; 2) the entrepreneur *must* direct the factors of production within a firm, a task which cannot be assigned to the employees themselves. I will argue that Foss is wrong (to different degrees) on both points.

Decentralized Firms as Combinations of Firms and Markets?

First I will discuss Foss's claim that it is impossible to combine firms and markets. He explains the 'firms-as-markets' claims made by pro-decentralization writers:

> One possible interpretation of the recent literature on economic organization in the knowledge economy is that as Hayekian settings become increasingly

> prevalent, traditional authority relations vanish . . . and coordination mechanisms (i.e., authority, norms, teams, prices, etc.) will increasingly be combined in new, innovative ways – resulting in what is often referred to as 'new organizational forms', and substituting for traditional relations of authority. This final claim implies that organizational forms do not cluster in a few rigid, discrete forms, but, on the contrary, that coordination mechanisms are highly malleable. In particular, firms may adopt coordination mechanisms that we normally think of as characteristic of the market rather than of planned coordination. (2001a, pp. 8–9)[25]

Foss is implying here that 'new organizational forms' cannot really exist, a claim I believe is rather difficult to stake: the existence of 'new organizational forms' would appear to be self-evident. One need only take a look at the last 10 or 20 years of business and management literature to see that this is so. However, though Foss is not very clear on this point, it would appear that his view is not that firms featuring various forms of decentralization are not observed at any point in time, but rather that such firms are unstable in the sense that they are unable to retain their decentralized features for any lengthier period of time. He supports this claim in Foss (2001c) by further examining the Danish firm Oticon A/S. As I explained in Chapter 1, Oticon implemented a radical form of decentralization for a period of time only to ultimately reject it and return to a more-or-less straightforward hierarchical form. Thus, Foss draws the conclusion from this example that it is very difficult – if not impossible – to properly 'shape' a 'new' and, more importantly, *lasting* form of organization. In other words, it is unlikely that a decentralized organization can ever be an equilibrium solution to the organizational problem.

This raises the question of how long an organizational structure must last to be considered an equilibrium solution. The decentralized structure in Oticon lasted between five and eight years (depending on the interpretation of events), during which time Oticon became a market leader in several innovative products, gained significant market share and became very profitable. If a period greater than five years does not qualify as an equilibrium solution, then we need to rethink our notion of equilibrium. In addition, it should be obvious that one example of failure of radical decentralization does not condemn the entire organizational form, and I have shown examples of radically decentralized *and* successful companies that have lasted for much more than five years and which still continue, such as W. L Gore & Associates Inc. In the case of Oticon, it would appear that management made key mistakes that unraveled the entire organizational form, as I discuss just below. But it is by no means a matter of certainty that management teams in all firms exhibiting greater degrees of decentralization will always make mistakes that render decentralization impossible.

And as I pointed out in Chapter 1, even if the Oticon management failed to create a stable decentralized structure, in many ways their experiment was a success, placing the company back in the position of market leader, in terms both of technical and product innovations and of market share.

I believe that Foss goes wrong when he accepts the perspective of decentralization proponents who repeatedly refer to decentralization as a process of emulating the market, which, as I explained above, is not what decentralized firms do. Therefore, it is incorrect to analyze these 'new organizational forms' as combining hierarchy and markets. Whatever they may be, they are not markets. Once we recognize that, it very much calls into question the applicability of Mises' insight that markets and central planning cannot be mixed to derive a stable economic system. Foss explains his use of Mises' insight in more detail in the following paragraph:

> [R]ather than being combinable at will, coordination mechanisms, such as authority, delegation, pricing, etc., tend to cluster in predictable ways. This is an application of sorts on the level of the firm of Mises' demonstration that the various elements that make up the capitalist market economy are complementary ones; one cannot simply take a subset of these away, say, unhampered capital markets, and substitute them with elements that are characteristic of a different system. In a similar manner, concentrated ownership, authority, circumscribed decision rights, and incentives that are less 'powered' than those of the marketplace are all complementary elements of a system, namely, the firm, and they will continue to be so, even in the knowledge economy. (2001a, p. 19)

It bears pointing out that Foss is not actually using Mises' argument directly, but rather only by analogy: Mises was not speaking about intra-firm structures when making his claim. In light of this, we can see that the first problem with Foss's argument against decentralization is that, if decentralized firms do not actually emulate markets, the analogy breaks down, and Mises' insight is irrelevant to the question of intra-firm decentralization.

But an even more significant problem with Foss's argument is that Mises' above objections to 'playing market' were aimed at *coercive* interventions into the spontaneous market order. These coerced market interventions were done (or proposed to be done) in a way that would not allow the consumers to have any say in determining the efficiency and desirability of the new structure – consumers were prevented from 'voting with their dollars'. That is most certainly *not* the case with decentralized firms. First of all, decentralized firms are often far more experimental rather than designed in nature: they are generally an outcome of a spontaneous – or semi-spontaneous – incremental evolutionary process, rather than rationalistically 'designed' in the way that market interventions and non-market, governmental institutions are. Second, and more importantly, the decen-

tralized firm structure is not coerced into the markets; instead, it exists within a wider catallactic order where employees unhappy with the decentralized firm structure (or performance of such a structure) can freely quit and get jobs in more hierarchical firms; and consumers unhappy with the products of decentralized firms can freely choose goods made by more hierarchical firms. And this underlies my ultimate objection to Foss's analogy between Mises' rejection of a mixed economic system and Foss's rejection of decentralized firms: decentralized firms are still very much subject to market forces and must compete with predominantly hierarchically structured firms. If indeed decentralized structures were always inferior, as Foss appears to imply, that would very quickly become discovered through the process of market competition. As it is, even Foss is forced to acknowledge that decentralized firms do in fact exist.[26] Thus when Foss argues for the sanctity of the traditional 'Coasian' structure of the firm by saying 'the very fact that firms exist is *prima facie* evidence that they can somehow cope with the problems implied by Hayekian settings' (2001a, pp. 13–14), we can just as easily say that the very fact that firms exhibiting *decentralized* elements exist is *prima facie* evidence that they have been able to cope with whatever problems that structure may create for them (more on that below).

The Role of an Authoritarian Entrepreneur

The second critique of decentralization that Foss derived from Mises is that firms must have direction of resources within them by an entrepreneur with ultimate decision-making authority. Foss claims that entrepreneurs holding some ultimate authority in firms are a key component of any firm's organizational structure, and cannot be dispensed with, as firms with decentralized decision-making appear to wish to do. But as I discussed above, though firms with a great amount of internal decentralization tend to have fewer managerial layers and therefore less direction of employees, they inevitably still feature some ultimate decision-maker, whether an owner or some sort of a manager. Foss defines the 'principal' in this relationship to be the entrepreneur in the Misesian definition;[27] the agents, of course, are either lower-level managers or sometimes the ordinary employees. In all firms, whether centralized or decentralized, the Misesian entrepreneurs delegate their own decision-making rights to the agents to different extents. Foss discusses Mises' explanations of this phenomenon:

> The reason that firms can thrive even though their internal organization exemplifies Hayekian settings is that they have recourse to delegation. As Mises (1949, p. 303) emphasized, 'entrepreneurs are not omnipresent. They cannot themselves attend to the manifold tasks which are incumbent upon them.' Mises

> (p. 305) clearly recognized that in many firms decision rights are allocated by the entrepreneur (and the board of directors) to lower levels, presumably in order to better cope with distributed knowledge, an insight that is not present in Coase (1937). He perceptively recognized that delegation leads to agency problems, but argued that the system of double-entry book-keeping and other control measures may partly cope with such problems. Mises also understood that delegation of decision rights is circumscribed in an attempt to cope with the control problem that follows from delegation. (2001a, p. 14)

Foss demonstrates that Mises was aware of inherent tradeoffs associated with organizing a firm: delegation (or decentralization) has the benefits of relieving the entrepreneur from carrying out many tasks that others can do just as well, thus allowing her to focus on just those tasks that she is uniquely qualified to carry out; but it comes at a cost of creating agency problems. Foss reads Mises (accurately, in my opinion) as saying that the costs of delegation become higher than the benefits rather quickly, leading to a situation where relatively few, and mostly unimportant, decisions can be delegated. Foss further extrapolates that firms with some decentralization 'are prompted by a market-driven pressure to delegate decision rights (for example, to better serve customer preferences) and structure reward schemes in such a way that optimal trade-offs are reached' (pp. 14–15). Foss adds a proviso, though: decision-making rights 'are delegated as means to end, their use is monitored, and top-management reserves ultimate decision rights for itself' (p. 15).

The first of these three seems like a rather odd thing to point out: of course decision rights are delegated as a means to an end. As I pointed out, every firm will always possess important elements of an 'organization' (in a Hayekian sense) because all firms have a bottom line, an ultimate end, of maximizing profits. Delegation/decentralization is not done for its own sake, whatever that may mean, but rather to improve the performance of a firm, and as soon as it appears unlikely that it will do that over the long run it should be abandoned. As for monitoring the use of decision rights, this is another rather obvious element of decentralization, with an important limitation: as Minkler explained, in an asymmetric knowledge situation the entrepreneur may not be able to fully understand whether the agent is acting responsibly or irresponsibly with the delegated decision-making rights, so monitoring, while to a certain extent absolutely necessary and unavoidable, can sometimes be of limited use. The third point that Foss makes, that the entrepreneur reserves ultimate decision rights for herself, I will discuss in greater detail next.

Foss concludes that radically delegated decision rights are unlikely to be used in an efficient manner by employees, and therefore attempts at intra-firm decentralization are most likely doomed:

> An immediate implication of this kind of reasoning is that emulating market organization inside firms, by radically decentralizing the firm and allocating far-reaching decision rights to employees may be hard to accomplish in a successful manner . . . [T]here are incentive limits to the extent to which market mechanisms can be applied inside firms, and delegation, while not exactly a rare flower, is certainly a very delicate one. (2001a, pp. 18–19)

Foss questions the logic of delegating decision-making rights for two reasons: 1) there are several reasons why the entrepreneur, that is, the person with ultimate authority, *should* have and keep her decision-making rights; 2) the entrepreneur can never make a credible commitment to not engage in selective intervention, thus distorting the incentives faced by the agents. I will address each of these in turn.

As far as the first reason goes, Foss makes an important contribution with his discussion of the benefits of centralized decision-making. It should be emphasized again that Foss carries out his analysis within an implicit asymmetrical knowledge setting, where employees have greater knowledge than an employer. Foss shows that even in such settings there are significant reasons why the intra-firm decision-making should still be centralized:

> [I]t is possible to explain the presence of authority in [an asymmetric knowledge] setting, in the sense of it being rational to give one agent decision-making power over another one. I discuss the rationales for this under the headings of 'the need for urgent coordination', 'decisive information', 'economies of scale in decision-making' and 'defining incentive systems'. (2001a, pp. 11–12)

These four rationales have been improperly disregarded or dismissed by proponents of decentralization. The first rationale for centralized or authoritarian decision-making can be summed up as 'the need for urgent coordination':

> Coordinated adaptation or action may be required when actions or activities are complementary, when it is important to make *some* urgent choice (possibly highly inefficient), because doing nothing is worse. In such cases, it may be better to have somebody pick a strategy and make everybody play this strategy . . . [T]he decentralized solution performs poorly if urgency is important. (2001a, p. 12, italics in original)

The second rationale for centralized decision-making is the possession of 'decisive information' by one person:

> Even under distributed knowledge, where the centralized decisionmaker per definition does not possess (at least some) local information, he may in many cases still hold the information that is *decisive*. (2001a, p. 12, italics in original)

The third rationale for centralized decision-making is 'economies of scale in decision- making':

> [Economies of scale in managing in the form of effort costs of negotiating, learning about potential suppliers, etc.] may relate both to managing the internal relations between agents inside the firm and managing relations to outside agents (customers, suppliers, government agencies). (2001a, p. 13)

The fourth and final rationale for centralized decision-making is 'defining incentive systems':

> [E]ven under hidden knowledge, the principal may be able to form conjectures of the financial results that result from the agent's activities, and he can check whether these conjectures are actually confirmed using the control system of the firm . . . Hidden knowledge does not imply that subjective performance measurement becomes impossible. (2001a, p. 13)

These four reasons go a long way towards explaining why we do not see more decentralization of decision-making than there already exists. But the most important conclusion we can draw from them is that determining the internal structure of a firm is a very complex process involving many different factors. In addition, the importance and nature of each one of the factors is often very difficult to evaluate *ex ante*. For example, the question of whether there will actually be economies of scale in decision-making accruing to the entrepreneur or whether by holding on to those decision-making rights the entrepreneur is giving up important contributions by the employees is an extremely difficult one, and likely to vary dramatically through time and circumstance. Ultimately, there must be a combination of experience, judgment, and trial and error to arrive at the correct answer to such a question. The existence of these four factors is not a 'slam-dunk' for the 'Coasian firm' but rather an important consideration for entrepreneurs in deciding how many of their decision rights to delegate.

The second factor leading Foss to question the delegation of decision-making rights is that an entrepreneur can never make a credible commitment to *not* engage in selective intervention, a scenario that will have a distorting effect on the incentives faced by the agents. In other words, it is impossible for principals in a firm to credibly reject their power to make ultimate decisions. Employees will understand this, and will therefore respond by changing their behavior in undesirable ways. I discussed this problem in Chapter 2: Williamson, who referred to it as 'the impossibility of selective intervention', was the first to formulate it, and Foss explains it in the following way:

> The main problem is that incentives are diluted. This is because the option to intervene '. . . can be exercised both for good cause (to support expected net gains) and for bad (to support the subgoals of the intervenor)' (Williamson 1996: 150–151). Promises to only intervene for good cause can never be credible, Williamson argues, because they are not enforceable. Although Williamson may be going too far, a main conclusion in this literature is indeed that credible delegation may be very hard to accomplish, since reneging on a promise to delegate will in many cases be very tempting and those to whom rights are delegated anticipate this. An immediate implication of this kind of reasoning is that emulating market organization inside firms, for example, by radically decentralizing the firm and allocating far-reaching decision rights to employees may be hard to accomplish in a successful manner. Unlike independent agents in markets, corporate employees never possess ultimate decision rights. They are not full owners. This means that those who possess ultimate decision rights can always overrule employees. (2001a, pp. 18–19)

As I explained in Chapter 2, this logic leads Williamson to more or less reject the possibility of the existence of any sort of delegation (or, as Williamson refers to it, a hybrid organizational form). Though Foss notes that Williamson goes too far, he does not clarify exactly how he thinks Williamson's claims should be moderated. Foss instead seems to fully accept Williamson's critique. I propose that both Williamson and Foss are failing to take into account two important factors, which could sufficiently moderate the 'non-credibility of rejection of selective intervention' problem to make decentralized decision-making within firms workable. They are: 1) the wide use of the tit-for-tat strategy by employees, and their subsequent accumulation of information through the reputational effect; 2) absence or successful removal of opportunism on the part of the entrepreneur and/or top managers.

First, I will discuss the role that the tit-for-tat strategy and reputational effects play in decentralization of decision-making. Game theorists have shown that the so-called tit-for-tat strategy, where a person cooperates in the first round and in each subsequent round adopts the opponent's strategy from the previous round, can be very successful in maximizing gains from trade. The most important factor for this to happen is that the game must be repeated many times, with no known end. I believe that this applies in most firm situations. The entrepreneur could always interfere and take away the delegated decision-making rights, but she will know that she will lose the trust of the employees, and therefore any subsequent delegation she attempts to engage in will not be trusted, because she will develop a reputation as a 'cheater'. Therefore, the entrepreneur would forfeit all possible future benefits of delegation/decentralization by overruling the employees on a decision that was previously delegated to them.

To better illustrate the important role that reputational effects play in the process of delegation it is useful to take another look at the two examples of radical decentralization of decision-making I have discussed previously, Oticon and Semco. Foss uses the story of Oticon to demonstrate the selective intervention problem. Though the radical decentralization of Oticon between 1990 and 1995 was a great success in terms of innovations and gaining a competitive advantage, Oticon reverted to a much more hierarchical structure in 1996. The main reason according to Foss's analysis was that the CEO, Lars Kolind, frequently engaged in selective interventions, leading to employees becoming discouraged and disillusioned. Though employees had a large amount of discretion, there continued to exist one all-important hierarchical layer within Oticon that led to the ultimate undoing of the company's radically decentralized decision-making organization structure. As Foss explains,

> [P]rojects had to be evaluated by the Products and Projects Committee that was staffed by Kolind, the development manager, the marketing manager, and the support manager. The Project and Products Committee either rejected or approved of the project . . . Although a considerable amount of variety was indeed allowed to evolve, the selection over this variety was very much guided by the visible hand of the Products and Projects Committee. (Foss 2001c, p. 15)

Of course, the existence of the Products and Projects Committee is not necessarily a barrier to successful decentralization of decision-making within a firm. But Foss shows that the Committee abused its gate-keeping power by engaging in frequent selective interventions in those five years of radical decentralization, leading to 'diluted incentives and a general state of de-motivation' (ibid., p. 22) among the employees. The Committee created a situation where 'projects were interrupted in seemingly arbitrary ways' (ibid.). Since the Committee was unable to credibly commit to a policy of non-intervention, the employees stopped introducing new projects. The management's view may have been 'that in important respects and in many situations, they were likely to possess decisive knowledge, and that efficient resource-use dictated intervening in, and sometimes, closing down projects' (ibid.). The management obviously did not have faith in the radical decentralization of decision-making they had created, and ultimately the employees engaged in a tit-for-tat strategy, bringing about an unraveling of the decentralization. Oticon in 1996 adopted a more structured, hierarchical organizational form (though, according to Foss, 'Oticon headquarters is still by any reasonable standard an organization characterized by much delegation of decision rights' (ibid., p. 16)) because once the management had lost the ability to convince the employees

that they would not give in to the temptation of selective intervention there was nothing else they could do but re-establish some hierarchical controls.[28]

A rational, long-term-oriented entrepreneur who wished to take advantage of decentralization of decision-making would have to discipline herself not to give in to this type of temptation, understanding that it is necessary to gain employee trust in order to allow delegation of decision-making rights to succeed. Ricketts (2002) explains that a 'sufficiently high probability of repetition thus changes the structure of the exchange game . . . cheating is no longer the dominant strategy' (p. 21). This explains why Ricardo Semler (see Chapter 3, 'Decentralized decision-making through hierarchical flattering', page 00) refused to overrule the employees of his firm even when he disagreed with them: 'Employees also outvoted me on the acquisition of a company that I'm still sure we should have bought. But they felt we weren't ready to digest it, and I lost the vote. In a case like that, the credibility of our management system is at stake.' Semler showed a keen awareness of the value of 'cooperating' in this one round (despite the possibility that the value of his company might be harmed in the short run) in order to gain the benefits of continued trust and continued cooperation by the employees. Semler demonstrated that in fact an entrepreneur *can* be credible in his commitment to non-interventionism. Since all parties understand the potential benefits of a successfully decentralized firm, it is possible that in the first round of the game the entrepreneur and employees will engage in cooperative behavior, which in turn will lead to a self-reinforcing process of continuous cooperation. As Ricketts again explains: 'In certain conditions, self-interested behavior may result in the widespread adoption of the "tit for tat" strategy in trading games. "Tit for tat" becomes . . . a convention. Once established there are powerful forces of self-interest tending to maintain it' (2002, p. 22). It would seem that, unlike Oticon between 1990 and 1995, Semco (as well as W.L. Gore & Associates, as I showed in the first chapter) successfully created a convention of managerial non-interventionism, and they reaped the benefits.

This process of the development of a convention is more likely to take place within a firm than in a market situation for two important reasons: 1) unlike market participants, employees in a firm are guaranteed to have repeated dealings with one another and with the entrepreneur; and 2) within a firm it is relatively easy to accurately observe whether a participant cooperated or cheated, which is sometimes more difficult to determine in market situations. For these reasons we can confidently expect widespread adoption of the tit-for-tat strategy among employees, thus severely restraining the incentives for the entrepreneur to engage in undesirable (in the long run) selective interventionism.[29]

The second factor indicating that Williamson and Foss are exaggerating the problem of selective interventionism is one of opportunism. A key part of Williamson's theory is his assumption of opportunism on the part of not only employees but also the entrepreneur. However, if we could show that people within firms are not opportunistic in the ways that Williamson assumes, then the whole credible non-interventionism commitment problem breaks down. I will discuss opportunism and worker motivations in the next chapter. There I will show that several recent studies have come to the conclusion that opportunism is not nearly as widespread as Williamson makes it seem, therefore allowing for the possibility of credible commitment by entrepreneurs and managers to abstain from engaging in selective interventions into delegated decision-making by employees. In fact, contrary to Williamson and Foss, we can make a case that the existence of occasional opportunistic individuals can in fact explain why we have been observing a 'flattening' (removal of layers of middle management) of the organizational structures as a common part of the decentralization process. Even though most managers with authority may not be opportunistic, opportunistic behavior by just one can spoil the entire reputational environment. For this reason entrepreneurs (who can be expected to truly want to maximize the long-run benefits of decentralization of decision-making and will therefore have the most to lose from selective intervention, which will undermine the confidence in the delegation process) could remove many of the middle managers as a way to ensure the least amount of selective interventionism.

Conclusion

Despite my objections to Foss's arguments, I whole-heartedly agree with him that pro-decentralization literature has been far too eager to proclaim the death of the Coasian firm:

> Proponents of the knowledge economy notion assert that these settings are becoming increasingly prevalent in today's business landscape, in the sense that an increasing fraction of firms experiment with decentralizing their internal structures, build relations to external knowledge sources, etc. (2001a, p. 4)[30]

Whether they are becoming increasingly prevalent or not is an empirical question, which has so far not been conclusively answered.[31] But I suspect that the reports of the death of the Coasian firm have been greatly exaggerated. Finding the 'right' institutional structure to make a firm properly decentralized indeed is not easy, and it is possible and even likely that many firms will get it wrong – meaning that the costs of decentralization will turn

out to be greater than its benefits and the decentralization experiments will be abandoned, firms returning to a more hierarchical structure. In addition, external circumstances may change in ways that will make a radically decentralized decision-making structure no longer necessary, and we will observe a return to a hierarchical, controlled structure. Ultimately I argue, as did Langlois above, that, owing to the unavoidable 'flexibility–efficiency tradeoff', it is impossible for economists to determine the absolutely more efficient internal structure of the firm – rather, it must be discovered by entrepreneurs and other actors within firms themselves. This is ultimately one of the most important tasks for the figures with authority within firms.

Foss is certainly correct to point out that the proponents of decentralization are not right in claiming that all firms would be better off if they engaged in a greater degree of delegation. But he goes too far in the opposite direction to show this. I believe that the proper conclusion to draw from this discussion is that firms must have an appropriate structure for their particular competitive environment. Firms deal with Hayekian or knowledge-work settings by finding the proper amount of decentralization befitting the situation. It may or may not in fact be the case that competitive environments are changing in such ways that more firms will have to become more decentralized in order to survive. This also is not a theoretical issue, but rather an empirical one, and we as economists cannot say how much decentralization is appropriate nor which firms should be decentralized nor how much – this must be done by entrepreneurs and employees in the firms themselves.

SEEKING CREATIVITY WITHIN FIRMS

In most of the pro-decentralization literature (with the exception of Sautet 2000), the authors largely failed to discuss how intra-firm decontrolling brings about a stimulated creative response from employees. In fact, there has not been much work done exploring the connection and distinction between the *use* of dispersed knowledge and the *creation* of new knowledge (whether in the form of new products, new production processes, or new markets). Though these two would clearly seem to be connected, they are not the same. My claim is that the primary benefit of decentralization of decision-making within firms is not necessarily the better co-ordination of dispersed knowledge, but rather the generation of the greatest amount of new knowledge. To the extent that creativity is the necessary antecedent for innovative behavior, firms seeking to foster their innovative capabilities can do so by adopting intra-firm structures that encourage creative problem-solving by the employees. Minkler recognizes the importance of

creativity and innovation, as can be seen in this quote, though ultimately he does not advance this important insight any further: 'Successful firms are the ones that develop organizational capabilities that allow them to continue to innovate; firms that rest on their past accomplishments decline' (1993b, pp. 583–4).

Sautet (2000) *does* go further, explaining that the multidivisional form of intra-firm decentralization is primarily instituted as a way to generate new knowledge:

> [T]he decentralized structure is a locus of discovery and of exploitation of profit opportunities. This is possible, not simply because bounded rationality problems were overcome (even if this is certainly true), but rather because the knowledge necessary for the growth of the firm could be discovered only through a decentralized structure that is conducive to entrepreneurial discovery. The M-form allows for the discovery of knowledge that would not have been discovered otherwise. (Sautet 2000, p. 132)

New knowledge is discovered or generated as there is greater ability for employees to act on their existing knowledge. And the ability for employees to act on their existing knowledge is very much determined by the intra-firm structure or, more precisely, the rules governing the employees. The rules within successful firms characterized by a great amount of decentralized decision-making have been designed (or in some cases have evolved) to 'extract' the maximum amount of creativity from employees at different levels of the firm hierarchy. In a world of intense competition, it is often too costly *not* to take advantage of employees' creative problem-solving, since firms need to be as responsive to changing market conditions as possible. In fact, many businesses fully expect that their employees will not act as simple automatons, carrying out orders from above, but will rather creatively engage with whichever problems may arise in the process of production. In other words, employees are expected to behave as entrepreneurs, and we can thus explain the benefits of decentralized firms as encouraging entrepreneurial – meaning creative, innovative, alert – employee behavior. Firm rules which are capable of harnessing and using these employees' entrepreneurial judgment, alertness, and imagination may be more likely to survive the competitive evolutionary process, as seen in multitudes of examples of decentralized firms in today's economies. Such rules must allow for some level of personal decision-making and, by logical implication, restrict the amount of planning from above that can take place.[32]

Therefore, the benefits of decentralized firms may be explained not only in terms of the Hayekian 'dispersed-knowledge' co-ordination but also in terms of Schumpeter's evolutionary-entrepreneurial stimulus to

innovation.[33] I will explore the connection between decentralization and employee creativity in more detail in Chapter 5.

CONCLUSION

In this chapter I have summarized and critiqued the current state of economic knowledge about decentralization within firms, resting mostly on the idea of the knowledge problem within a firm. Sautet refers to this as the double knowledge problem, while Minkler labels it an asymmetrical knowledge problem. Some important foundations have been laid in the past 20 years, but there has also been work that I believe has led us down a few wrong paths. I have tried to separate out the valuable contributions from the false ones. But, as insightful and beneficial as the valuable contributions are, they do not go far enough. Several important questions remain mostly unanswered, and the analysis has not been pushed as far as it should. The unexplained or insufficiently addressed aspects of decentralization of decision-making within firms can be summed up in the following two questions: 1) What motivates workers to work hard if they are not continuously monitored – in other words, how do decentralized firms solve the agency problem? 2) How do firms with decentralized decision-making co-ordinate the actions of the multitudes of employees empowered with their own decision-making rights – in other words, how are they able to avoid absolute chaos and discoordination?

I will answer these questions in the next chapter. I will show that there exists a process generating a spontaneous order within firms characterized by a high degree of decentralization that is different than the spontaneously ordering process we observe in the markets, and that we can explain it by relying on Schutzian sociological philosophy. In addition, I will show that firms with properly structured decentralized decision-making can effectively reduce the agency problem, contrary to the common wisdom of transaction cost economists, and that workers who are not acting in opportunistic ways are much more likely to spontaneously co-ordinate their actions.

NOTES

1. As an example, see Cowen and Parker 1997: 'We argue that firms *should* rely on market-based mechanisms to an increasing degree, and that the problems of command approaches to management resemble the problems faced by all forms of central planning of resource allocation' (p. 17, emphasis added). Also, see Gable and Ellig 1993: 'Historical experience shows that market economies, which rely on the dispersed

knowledge and independent judgment of numerous consumers and producers, consistently provide a dramatically higher quality of life than centrally planned economies. Given that reality, it makes sense to examine how market economies coordinate human activity in order to glean lessons for improving business management. Unfortunately, many analysts in business and academia resist this approach, out of a belief that market concepts apply only "out there", beyond the boundaries of the firm. In this view, the principles of a free society apply in the external market, but the firm's internal affairs are the province of brilliant planners making command decisions . . . [W]e believe firms that fail to learn and adapt market principles internally will one day find themselves distant competitors to firms that do' (pp. 8–9).

2. Again, see Cowen and Parker 1997: '[I]t is far from obvious that the border between the firm and the market was ever as distinct as the earlier literature implied . . . Arguably, therefore, the differences between markets and hierarchies are best analyzed in terms of *a unified theory of contracts and incentives* rather than as fundamentally different institutional structures' (p. 42, emphasis in the original).
3. Langlois was one of the pioneers in this field, and it is largely due to him that the study of the firm, as he himself put it, is 'beginning to attract – and to yield to – insights and approaches one could characterize as fundamentally Austrian. Among these insights are the importance of economic process and the tacit and decentralized character of economic knowledge' (1994b, p. 173).
4. The following quote effectively sums up Foss's research agenda.'[T]he ambition of the present paper is not to take steps towards an alternative Austrian theory of the firm. Rather, it is the more humble one of suggesting that Austrian economics is a challenge to the [modern economics of organization], that economists of organization may derive inspiration from Austrian economics, and perhaps even that some sort of combined research program may be a worthwhile endeavor' (Foss 1999, p. 459).
5. Sautet refers to the intra-firm knowledge problem as the 'double Hayekian knowledge problem', and explains it in the following way: 'In the complex firm, individuals are alert, on the one hand, and possess knowledge that can be local, tacit and social in nature, on the other. In that sense, the complex firm cannot function like a simple firm, for the employees' knowledge cannot be entirely centralized. There will always be knowledge possessed by the employees that will depend on the particular circumstances of time and place and which the promoter cannot know (even if this would be valuable to him/her). This knowledge could be about the internal allocation of resources or about a profit opportunity in the marketplace. In other words, there is a [Hayekian knowledge problem] in the complex firm: the entrepreneur-promoter can be ignorant of his/her ignorance with respect to the knowledge possessed by some of his/her employees (and this knowledge could be crucial to the firm). This is in addition the [Hayekian knowledge problem] in the marketplace' (2000, pp. 98–9).
6. To a certain extent Harper is restating Williamson's work here. They both define paradigmatic firms as purely hierarchical organizations that are completely without any element of order. Harper's list of hybrid modes of governance is almost identical to Williamson's: 'venture capital contracts, venture nurturing (including corporate new venture divisions and R&D partnerships), venture spin-offs, joint ventures, franchising, reciprocal trading (including product exchange agreements), share contracts, quasi-vertical integration and other forms of non-standard contractual arrangements' (1996, p. 154). However, Harper differs from Williamson by virtue of being more open to the possibility of the existence of multitudes of governance structures, in addition to those listed here, along the governance continuum. Williamson appeared to believe that intermediate forms of organization are very few and he left out any consideration of decentralized-decision-making firms, as I discussed in Chapter 2.
7. Foss puts it this way: '[T]he Austrian insight that most economically relevant knowledge is local and tacit is not systematically incorporated into contemporary Coasian theories of the firm, at least with regards to production knowledge' (1994, p. 56).
8. Foss brings up this same critique in another article: 'The dispersal of knowledge creates coordination problems that go beyond the incentive coordination problems that are

treated in the [Modern Economics of Organization], and are consequently sidestepped in this body of theory. A consequence of this neglect is that the MEO tends to neglect the role of management, leadership, routines, capabilities, and shared cognitive categories (e.g. corporate culture) in coordination, except when these can be interpreted as either manifestations of *ex ante* incentive alignment or *ex post* governance problems that are non-standard in the context of the MEO' (Foss 1999, p. 459).

9. Minkler defines structural uncertainty as 'the type of uncertainty that exists if a decision-maker cannot *ex ante* specify all relevant alternatives or outcomes' (1993b, p. 571). It is ultimately caused by dispersed knowledge.
10. Minkler in a different article phrases this problem in the following way: 'But if a principal does not know what agents should be doing (maybe because knowledge is dispersed through the organization or because an agent knows about production processes and outcomes the principal does not) the problem confronting the principal is different and cannot be solved by monitoring. In certain predicaments, the principal would not even be able to decipher what was observed. Direction would be pointless' (Minkler 1993a, p. 18).
11. According to Minkler: 'Information-based models preclude the possibility that agents could understand more than the principal about certain aspects of production' (1993b, p. 570).
12. This is one thing not well understood by critics of decentralization: they object that a decentralized firm cannot solve the moral hazard problem while remaining oblivious to the fact that in this asymmetrical knowledge situation the standard firm is just as helpless against it.
13. Minkler gives an interesting example of the futility of monitoring in a knowledge work situation: 'Even if Millard, an entrepreneur who saw the potential market for personal computers but technically incompetent himself, could have costlessly observed the two engineers who developed the IMSAI 8080 microcomputer, it would have served no purpose. Because he did not have sufficient knowledge to direct the engineers, Millard could not decipher what they were doing, or equivalently if they were shirking, by watching them' (1993a, p. 20).
14. Sautet's answer to this question is in many ways similar to mine: 'I contend that one of the ways for a firm to grow is by becoming multidivisional . . . I see the main function of the M-form as solving the inner [Hayekian Knowledge Problem] (with which the general managers are confronted) and, at the same time, as overcoming the impossibility of planning (completely) the growth of the firm (in a diversified and geographically dispersed way) from the central office' (2000, p. 131). My answer is more general than Sautet's, in the sense that I explain decentralization of decision-making as the response to the double knowledge problem, but certainly the multidivisional form is an important way of decentralizing decision-making within a firm. In addition, I am interested in explaining the extreme cases of decentralization, whereas in an M-form divisions can still be centrally planned to a great extent. Nevertheless, Sautet's work is certainly of great relevance to my own inquiries.
15. Sautet makes the same claim: 'With an increasing level of human capital, delegation of authority (team-based operations) becomes increasingly possible, and this delegation diminishes the inner Hayekian Knowledge Problem (provided new coordination problems are under control)' (2000, p. 124).
16. For example, Aoki (1990), Ricketts (2002).
17. At least Schumpeter would not have been surprised by this development. He was aware of the failure of economics to realistically deal with business institutions, and called for more study by economists of business literature: 'I would commend to economic historians – and, for that matter, to economic theorists, if they will interest themselves in the problem – that they examine the already available secondary literature for data upon entrepreneurial characteristics and phenomena. A miscellany of such writings – from general economic histories to biographies of businessmen, and from local histories to studies of technological change – all hold information, which sifted and arranged with definite hypotheses in mind will carry us a goodly distance toward our goal. New facts

will doubtless be needed in the end, but already we have a multitude that have as yet not been digested' (Schumpeter 1949, p. 271). Let us also not forget that Coase wrote his groundbreaking 1937 article only in response to spending months visiting different factories and interviewing their managers. Ultimately, economists must examine the *meanings* that managers and employees put on their own business structures, and the best way to do so at this point would be to better familiarize ourselves with business and management literature.

18. We can also see a vague reference to a tradeoff existing between centralization and decentralization in the following passage by Langlois: 'Indeed, decentralization is very much the imperative for any organization once it becomes successful and established . . . Once the innovation of mass production of parts became assimilated and disseminated, centralization becomes more costly and less beneficial' (1994a, p. 19).
19. It is informative to contrast Jensen and Meckling with a passage from the recent book *The Science of Success* by Charles Koch, founder of Koch Industries, Inc.: 'We should also expect decision rights to change over time, as our businesses and our comparative advantages change and we make good or bad decisions. This is a dynamic process meant to ensure that those with the best combination of values, knowledge, motivation, demonstrated capability and opportunity cost are making the decisions' (Koch 2007, p. 128). Also: 'Those with local knowledge are often in a better position to solve the problem at hand. The ideas and creative energy of all employees should be leveraged . . . Decisions should be made by those with the best knowledge, taking comparative advantage into account' (Koch 2007, p. 133).
20. See also Rajan and Zingales (2001), Sliwka (2001), Zabojnik (2002), Dessein (2002), Rivkin and Siggelkow (2003), Colombo and Delmastro (2004), Mookherjee (2006), and De Paola and Scoppa (2006).
21. This constant flux to which institutional structures are prone calls into question the applicability of the equilibrium concept to institutional structures. Foss defines an equilibrium state for institutions in the following way: 'An organizational equilibrium obtains where decision rights are delegated in such a way that the benefits of delegation in terms of better utilizing local knowledge are balanced against the costs of delegation in terms of agency losses' (Foss 2001b, p. 5). But in a world of constant change and imperfect knowledge, it would seem that such a notion of equilibrium is more or less irrelevant, especially given the fact that the 'benefits of delegation in terms of better utilizing of local knowledge' are just as impossible to quantify as are the 'costs of delegation in terms of agency losses'.
22. Foss would agree with this perspective on decentralized firms, as he admits that 'playing market . . . may [be] broadly interpret[ed] as the introduction of pricing in the context of hierarchy' (2001a, p. 17). Most firms featuring decentralized decision-making categorically do not do this.
23. Foss (2001a) explains it in the following way: 'Misesian arguments are used to criticize arguments derived from Hayekian insights that firms should emulate markets to the largest possible extent. In a sense, Misesian arguments resurrect the Austrian and Coasian notion that markets and hierarchies are indeed different mechanisms for resource allocation' (p. 5).
24. In Foss (2001a) he explains it in the following way: '[M]any of those who have addressed economic organization in the knowledge economy have explicitly drawn upon Austrian – more precisely, Hayekian – ideas on the need for decentralization fostered by the presence of dispersed knowledge. They have used such Austrian ideas to argue that hierarchy and planning methods are as problematic inside firms as they have proved to be outside firms, that firms need to harness the ability of markets to utilize, exchange and build information rapidly in response to changing contingencies, and that extensive delegation of decision rights and the use of high-powered incentives to support this are imperative' (p. 4–5).
25. Another version of this same statement can be found in Foss (2001a): '[B]ecause authority declines in importance as knowledge becomes distributed and knowledge inputs increase in importance, resort to other coordination mechanisms is necessary. Thus,

firms increasingly rely on high-powered incentives, implement employee stock-ownership programs, invest in building "corporate cultures", try to price corporate resources to the largest possible extent, and so on. An outcome of this is the emergence of "new organizational forms". The theoretical implication is that various mechanisms for coordinating resources are combinable to a much larger extent than hitherto assumed in, for example, organizational economics, where economic activities are normally assumed to be organized across three discrete governance structures, firms, markets and hybrids (e.g. Williamson 1996)' (p. 6).

26. For example, see Foss (2001a): 'economic organization in settings where rapid changes in the external environment necessitate a high degree of organizational decentralization and "empowerment" of employees, where relations to outside knowledge sources (other firms, universities, and so on) are paramount, and where "knowledge assets" account for a large (and increasing) part of value-added in production. *While such settings have no doubt existed in some industries for a long time*, they are not exactly the dominant mode of production that characterizes, say, American business history for a great part of the 20th century' (p. 4, italics added).
27. Foss defines the Misesian entrepreneur as one that engages in speculation, that is ultimately in charge of a business venture, that hires the managers and employees, makes the expansion and contraction decisions, and has ownership over a firm's key assets. A case could be made that, when one defines the entrepreneur in this way, the argument that a firm needs an entrepreneur, in a sense of a person with ultimate authority, is somewhat tautological.
28. Interestingly enough, Foss, though critical of radical decentralization in this article, admits that the spaghetti organization in Oticon 'may indeed have caused a degree of innovativeness that might not have been obtainable in its absence' (Foss 2001c, p. 4). He also says that, though the spaghetti organization may be an 'inherently unstable administrative system, this system was in fact necessary to realize the benefits of increased innovativeness' (ibid.). This is a very interesting quote, since it implies that even temporary decentralization, as long as it is at least partially successful, may be worth any instabilities that it will introduce. The instabilities can be fixed later, once the innovations have been created and are being exploited by the company. This perspective brings into question the necessity of the decentralized institutional structure being in some sort of an 'institutional equilibrium'.
29. Of course there may be circumstances where it makes absolute sense for an entrepreneur to intervene in the delegated decision-making, especially if she determines that delegation and decentralization have outlived their usefulness.
30. See also the following quote: 'Misesian arguments help to demonstrate the continued viability of the "Coasian firm", as against those critics who have argued that it will wither under the impact of the increasing prevalence of Hayekian settings' (2001a, p. 19).
31. Though I did show at the beginning of Chapter 1 that recent empirical studies have been providing support to the notion that decision-making within firms is increasingly decentralized and allocated to lower tiers of the managerial hierarchy.
32. A striking example that demonstrates creative problem-solving which does not emanate from the top (that is, is designed) is given by Harper (1996): 'The concept of moving production lines was not in fact solely [Henry] Ford's brainchild. "It is clear that the impression given in Ford's *My Life and Work* that the key ideas of mass production percolated from the top of the factory downward is erroneous; rather, seminal ideas moved from the bottom upwards" (Nevins & Hill 1954, p. 474). In fact, they credit Clarence Avery, a recent university graduate, as having played the largest single role in introducing the new production technique into Ford' (p. 205).
33. The benefits of decentralization can also be explained in terms of the discovery of opportunities for profit and new knowledge, which is what Foss, building on the work of Israel Kirzner, does.

4. Spontaneous order in decentralized firms

When business profits leap ahead, the entrepreneur will eventually even be ready to go beyond the yield attributable to labor and to let the workers share to some extent in the entrepreneurial profits, adding such share to their wages. A remarkable fact! It may be viewed as a symptom of the fact that between employers and employees, much as they may be at odds with one another, there yet exists fundamentally a far-reaching community of interests. In today's combative mood the existence of this community is not publicly admitted, but it nevertheless is at work, if tacitly. The whole circle of people engaged by the enterprise, from the top managers to the lowliest workers, is bound together by their common stake in the success of the business, and in the struggle with the customers and competitors it feels as a unit as a companionship of fate. (Wieser 1926, p. 354)[1]

The most important hitherto unexplained aspect of decentralization within firms is how the actions of multitudes of employees can ever be co-ordinated in the absence of a conscious, explicit command-and-control system. There are several questions to be answered in regard to this point: Can an intra-firm decentralization actually be an example of spontaneous order? What is the mechanism by which this order comes about? Is it possible to achieve spontaneous order if people are always acting in opportunistic ways? Even if people are willing to be cooperative, moral, fair, and selfless (to a degree, anyway), is it not necessary to have managers who will consciously co-ordinate the employees' actions? In the absence of such co-ordinative force, won't chaos rule?

When it comes to answering these questions, it would appear that we are (almost) all Coaseans now. Coase established a bold differentiation between firms and markets: a firm was always characterized by conscious co-ordination of resources because of the transaction-cost advantages of intra-firm organization compared to relying on markets. In markets, on the other hand, we observe spontaneous order, which is entirely absent within firms. I argued in Chapter 2 that this view is flawed, and even Coase himself stated decades after writing his 1937 article that he wished he had not stated his argument in such black-and-white terms. And, indeed, we have been seeing much evidence that spontaneous order can exist within firms, and there is today growing recognition of this fact by organization and management scholars, if not yet entirely by economists.

In this chapter I will explain how spontaneous order can be generated within decentralized firms. I will first focus on explanations of employee motivational factors which are more realistic than the simplistic assumption of widespread opportunistic behavior on which much of modern Transaction Cost Economics is founded. It is important to see that employees have a variety of motivations that make co-ordination within firms easier to attain. So having a good explanation of employee motivations is important not only to explain how firms with decentralized decision-making can mitigate the problem of incentive alignment without relying on close monitoring by managers, but also to explain why and how employees voluntarily co-ordinate their actions with other employees to bring about intra-firm order. In the second part of this chapter, I will apply the theory of spontaneous order derived from Alfred Schutz and Richard Ebeling to the firm. When combined with an examination of employee motivations, this theory can successfully explain how and why decentralized decision-making within firms works.

I. WHAT MOTIVATES EMPLOYEES?

Most economists accept that the principal–agent problem within firms can best be solved by employee monitoring. Because employees face low-powered incentives within firms the most effective way to ensure their full effort is to establish a monitor (usually a residual claimant of some form) vested with the power to determine the employee's wage or even their very employment based on the observed effort and results of the employee's labor (Alchian and Demsetz 1972). But how realistic is this explanation? In the real world no employees are watched for the duration of their working hours – such a thing would be unimaginable, as well as unimaginably costly: it would require one monitor for each worker, and then of course monitors for the monitors.

Fortunately, in most modern workplaces successful outcomes are achieved without having to resort to anything approaching such extreme measures. Economists must start with the right motivational premises if we hope to explain this reality. As we will see, those include not only traditionally considered positive and negative incentives, but also factors such as peer pressure, work ethic, morals, identification with the organization, and satisfaction from doing a good job.

Simon on Motivational Factors

The most significant work on employee motivation was done by Simon (1991). He asks the following questions: '[How are] the employees of

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If we can accept that employees do not usually act in the ways presumed by Transaction Cost Economics and that they are often willing to engage in something approaching consummate cooperation, then next we must explain how cooperation can come about within firms that have decentralized decision-making. All firms must have some – if not great – internal co-ordinative forces. Within regular, hierarchical firms co-ordination of course is achieved through conscious command-and-control methods. But within firms with decentralized decision-making we observe co-ordination which is not fully, or even mostly, a result of conscious command-and-control, and which can only be explained by recourse to the theory of spontaneous order. But that certainly does not mean that we thus need to rely on the *market theory* to explain co-ordination with firms exhibiting some decentralization. As I pointed out previously, firms with decentralized decision-making do not emulate markets, and thus it is incorrect to attempt to explain their internal co-ordinative forces by relying on the institutions that generate spontaneous order within market institutions, most fundamentally consisting of property rights and monetary prices. We need to take a more subtle view of the forces shaping spontaneous orders in general. I believe those forces can be explained by the groundbreaking work of sociologist and philosopher Alfred Schutz.

Schutz was greatly interested in the issue of co-ordination of human actions. Ebeling (1995a)[12] places Schutz's fundamental social problem in the context of the economic world: 'How can a multitude of individuals participating in a complex and world-encompassing division of labor successfully coordinate and adjust their actions and minimize frustration and disappointment, when each participant possesses different and ever-changing knowledge and expectations about the possibilities of the future?' (p. 81). A simpler way to ask this question is: 'How is a society possible?' An equivalent question for the purposes of this book would be: How is a firm with a great amount of decentralized decision-making possible? [13]

At the very bottom of this problem is the existence of a great amount of interdependencies among the people in any relevant society, whether an economy or a firm. When other people's actions have a great amount of bearing on one's own chances of success, there must be a method by which those actions are somehow co-ordinated. This co-ordination problem is even more relevant in a firm with decentralized decision-making, since interdependencies and externalities (both positive and negative) have greater importance here than in a large society, in the sense that they will have a larger effect on the chances of success of each individual. How can

employees correctly anticipate the actions of their colleagues that are relevant to their own decision-making, as well as signal to others what they themselves will be doing? That is the crux of the problem.

To Schutz, 'social action . . . was human action in which the actors incorporated the possible actions of others into their own plans and modes of conduct; it consisted of intricate webs of "mutual orientation" (Ebeling 1995a, p. 84). That mutual orientation is possible through the existence of a shared set of meanings that social actors put on their own actions as well as the actions of other individuals. They are shared in the sense that they are not private meanings, unique to a particular individual. In a wider social order it is our parents, friends, religious institutions, media, or own experience that teach us 'to interpret the meanings embedded in the multitude of social relationships' (ibid.). These meanings become 'ideal types'[14] which are subject to constant reconsideration and flux. But, as impermanent as they may be, 'typifications emerge out of social interaction and become formalized into *structures of intersubjective meaning*' (ibid., italics in the original), or meanings which we all share in common.

These structures of intersubjective meaning allow us to understand other people's gestures, their inflections of words, purposes of different products, and uses of resources. In turn, they bring about greater social coordination. The structures themselves are not objective because they are neither permanent nor uniform in meaning from person to person; rather, they constantly change, and we all may have slightly different interpretations of their meaning. In addition, they are usually learned through experience rather than any formal method. Nevertheless, we each individually act as though they are objective to us in the *here and now*. They are tacit or informal institutions of the web of social relationships. As Ebeling eloquently explains it, 'for the human actor in the social arena of everyday life, it is the structure of intersubjective meanings, as captured in ideal typifications, that incorporates and envelops the "reality" of mundane action' (1995a, p. 87).

The structures of intersubjective meaning evolve as actors assign new meanings to actions and objects, owing to new thoughts, ideas, and experiences. Since the structures are necessarily informal, they are continuously modified by different individuals. Some modifications are rejected by the society (that is, others do not adopt the same meanings, and therefore they remain unique rather than shared), but those that are accepted are institutionalized through repeated actions based on that meaning. It is an evolutionary process of meaning selection that Ebeling sums up in the following way: 'Thus a dynamic process of mutual dependency emerges in which the "given" meaning structures serve as points of individual and social orientation for "understanding," while being themselves modifiable through

their use for the expression of new meanings by individuals' (1999, p. 128). The meaning structures are flexible and do not act as constraints, but rather as guides for co-ordinating our actions with those of others.

Expectations and Co-ordination

The structures of intersubjective meaning allow us to build a relatively reliable model of expectations of the actions and reactions of others, one which is applicable in a wide variety of circumstances, even relatively unique ones. This is done through the typification process, which can reveal 'patterns of regularity or "types" of response for prediction of unique cases . . . No matter how imperfect, it introduces an additional source of knowledge for coordination of plans in the complex social setting of the market' (Ebeling 1994, pp. 92–3). The structures of intersubjective meaning will also lead us to expect that others will have the same ability to interpret and understand our own actions. This co-ordination of expectations will allow us to form plans with a great deal of confidence that we will be able to successfully fulfill them, even when these plans are heavily dependent upon the actions of others. We can expect that others will be able to interpret our intentions and requests in ways that we desire. As Ebeling again explained it, 'the routinization of behavior along typical patterns introduces *ranges of knowability* about the possible future conduct and motivations of others. It is what makes society and economies possible in lieu of a "perfect knowledge" of each separate individual and his or her unique eccentricities and differences' (Ebeling 1995b, p. 146, italics in the original).

The co-ordination process is therefore predicated upon those shared meaning structures. When our expectations of the actions of others are largely met, it is because we have the same intersubjective understanding of our roles in a particular situation or relationship. As Ebeling points out, these structures of intersubjective meaning seem to be exactly what Ludwig Lachmann (1971) referred to as the informal 'nodal points' of mutual orientation and plan co-ordination that accrue 'among the interstices' of the structure of formal rules (laws) in society. It is a powerful but sadly neglected account of the forces of spontaneous order in a society.

Structures of Intersubjective Meaning within Firms

Though neither Schutz nor Ebeling applied this construct to firms, I believe that its import is natural.[15] It explains very effectively how individuals within firms are able to co-ordinate their complex activities and get things done in the absence of explicit commands. It is important to recognize that even the most closely controlled firms rely somewhat upon the 'common

sense' of their employees rather than the spelling out of every detail of the productive process, but that common sense is ultimately always predicated upon a structure of intersubjective meaning present in that firm.

There is one major difference between a society and a firm: in a society many of our relationships are by necessity anonymous; in contrast, within firms most relationships are better described as being 'face to face', 'in which the participating actors form typifications not of all men or some group of men, but of the particular other with whom one is interacting' (Ebeling 1995a, p. 85), 'on the basis of his typical attitudes, motivations, and responses as they have come to be seen and analyzed in direct interpersonal contact' (Ebeling 1995b, p. 146). It is for this reason that structures of intersubjective meaning within firms can have a more powerful co-ordinating effect than in a large society. Employees can engage in a more concrete typification process based on close, repeated contact with others with whom they are co-ordinating their activities. This is an added benefit of organizing most work within firms as teamwork. The benefits of teamwork do not consist only of influencing the motivations of employees, but also of allowing all team members to get to know each other better – and therefore form more accurate typifications of each other. In addition, the existence of a particular 'corporate culture' can make the typification process even more effective by emphasizing what sort of actions and attitudes can be expected by employees and managers. In other words, the corporate culture can greatly facilitate mutual comprehension of meanings.[16]

When firms are viewed from this perspective, the role of managers is seen very differently than in the transaction cost literature. Managers become facilitators of co-ordination, rather than monitors or planners. Their primary task may be the establishment or simple fostering of a particular culture within a firm. Herbert Simon pointed out this aspect as well: 'seeing that commands are obeyed is not simply a matter of observing behavior, but of affecting the thought processes and the decision premises of employees'[17] (1991, p. 32). This can be effectively done through the establishment of an organizational culture, imparting a structure of intersubjective meaning on the firm. 3M is a famously innovative company, and it has come up with just such a culture, consisting of a compelling narrative which promotes the entrepreneurial self-image among the employees. In the process 3M clearly presented the kind of approach towards work that it expects of its employees:

> The legends of 3M almost all speak of the dogged dedication of the intrapreneur. When his bosses told intrapreneur Phil Palmquist to stop working on reflective coatings because that wasn't his job, he continued four nights a week from 7:00 P.M. to 11:00 P.M. Soon he had a product 100 times brighter than white paint. Among other things, it now lights up roadway signs at night when

> your headlights shine on them. In a more extreme case, George Swenson, another 3M intrapreneur, was fired when he wouldn't stop working on a new roofing material. He continued working on the project despite the fact that he was no longer employed. Once he had it working, the company relented and rehired him. By treasuring such stories, 3M encourages others to try to innovate despite opposition. (Pinchot 1985, pp. 46–7)

Managers in decentralized firms must act as co-ordinating conduits by facilitating a strong organizational culture.[18] Another example of a manager attempting to establish just such an organizational culture can be seen in the development of Pontiac Fiero in the late 1970s. This project was headed by Hulki Aldikacti. He was convinced that a sporty two-seater car would be very successful for GM, but he had a hard time selling the concept to the headquarters. So he forced a form of decentralization through to GM: as he put it, he decided to 'go outside and set up shop and run it like a small business' (Pinchot 1985, p. 78). Though he didn't have the full support of the GM headquarters, the heads of the Pontiac division were behind him. They also understood that 'the Pontiac organization as it then existed was too ponderous for the job' (ibid.), so they let him bend the rules while they protected him in his unofficial intra-firm horizontal disintegration. Aldikacti rented a space some ten miles away from the Pontiac office to get away from the bureaucracy. Also, he was aware that they had a very limited time to complete the project before the headquarters put a stop to it. Moving away from the main office allowed his cross-functional team to easily communicate and in the process develop a common culture, greatly speeding up the development:

> One of the great barriers to speed in innovation is slow communication. To avoid that problem, Hulki [Aldikacti] brought all of his people together in a small building away from the noise of bureaucratic interference. Formality slows communication too, so Hulki insisted on direct communication. Only with a small team can members of the group know and trust each other well enough to dispense with formality. (ibid., p. 82)

In this case, the manager very clearly acted as a facilitator of the development of an informal culture of communication that established a structure of shared meanings. The result was that the team was able to set a new record in the length of the car development period: 'The Fiero project cut almost two years and many dollars out of the normal timetable for new car development. GM top management considered this system so significant that they are trying to recreate it' (Ibid., p. 80).

Another important (and related) role for managers is to judge human character: managers must be able to determine whether a particular person has the right characteristics (innate or formed through experience) to fit

into the organizational structure. Once the employees with the 'correct' attitudes and ambitions are selected, firms can rely on organizational identification, job satisfaction, morals, peer pressure, and so on, to get employees to exert maximum effort. Thus the employee selection process is of a greater importance in firms with decentralized decision-making than within orthodox hierarchical firms. We see this employee selection process at play in W.L. Gore & Associates, a company with an extremely flat organizational structure and a great degree of decision-making decentralization, as described in Chapter 1. At Gore there are no managers, and the hiring process is carried out mostly by the employees themselves. But the hiring process is very methodical and detail-oriented in order to identify those employees who hold the appropriate outlook on work and fit within the company's relatively unique organizational culture:

> Job applicants at Gore were initially screened by personnel specialists, who contacted as many as 10 references for each applicant. Each candidate who passed this screening was then interviewed by Associates working in the area of the company where the candidate was being considered for a position. According to those who had gone through them, the interviews were rigorous. Before a candidate was hired, an Associate had to agree to be his or her sponsor. The sponsor's role was to take a personal interest in the new Associate's contributions, problems, and goals, acting as both a coach and an advocate. (Shipper and Manz 1998, p. C-503)

Ultimately not all employees will be cut out for this way of working. Some employees may find a decentralized corporate culture stifling, despite others finding it free or even nurturing. In order to create an effective organizational culture the structures of intersubjective meanings must be voluntarily shared by all, and it is very important that only those employees who are willing and able to do so are employed. We see this dynamic in action at Gore:

> Not all Gore Associates functioned well in Gore's unstructured work environment, especially initially. Those who had worked at other companies and become accustomed to a more structured work environment usually encountered adjustment problems. As [founder] Bill Gore said, 'All our lives most of us have been told what to do, and some people don't know how to respond when asked to do something – and have the very real option of saying no – on their job. It's the new Associate's responsibility to find out what he or she can do for the good of the operation.' A few Associates concluded that Gore's flexible, unstructured workplace was not for them and soon left the company . . . However, the vast majority of new Associates, after some initial floundering, adapted quickly. Overall W.L. Gore's lattice organization proved to be good for the company's bottom line. The year before he died, Bill Gore estimated that the company's profit per Associate was double Du Pont's profit per employee. (Ibid., p. C-500)

Another example of the importance of the employee selection process can be seen in the following segment of an interview with Eric Schmidt, CEO of Google Inc.:

> *Wall Street Journal*: How do you choose people to work at your company? Mr Schmidt: The principle that Google operates under is to hire very, very strong-willed, sort of driven persons. We have relatively little management and the management is very, very thoroughly vetted. They both have the intelligence and the history of working in high-tech and they want to work, they want to change the world. We always talk at Google about how brilliant the engineering teams are, which is indeed true. It's just as important to have corresponding managers or leaders who have the strategic understanding of what we're trying to do because it changes every nine months. (Interview by Mylene Mangalindan, *Wall Street Journal*, March 29, 2004, p. B1)

Several interesting points emerge here: first, Google can operate with little management because they hire people with high intrinsic motivation and great love of their work; second, they hire people who have worked in this industry and most likely already have similar structures of shared meanings, facilitating intra-firm co-ordination; finally, we also see that having few management layers creates a situation where all managers can have a fuller strategic picture which allows great flexibility, necessary when the plans, as Mr Schmidt put it, are changing every nine months.

So, to sum up, an organizational culture should accomplish two purposes: enable greater co-ordination through structures of shared meaning and encourage creative, hard work by creating a feeling of a common cause among employees. I have already talked about the decentralization developments in the Danish firm Oticon, and we can interpret CEO Lars Kolind's instituting of a new organizational culture befitting a radically decentralized firm as aiming to accomplish both of these, as Foss notes: '[Kolind's] attempt to infuse the organization with a strong set of shared values may also be seen as an attempt to assist the coordination of multiple efforts in a decentralized setting while simultaneously keeping agency problems at bay' (Foss 2001c, p. 16).[19]

CONCLUSION

There are forces at work that even in the absence of conscious co-ordination by managers can bring about a great amount of co-ordination within firms. This explains why we have been seeing a major push towards eliminating middle-management positions in many firms (the so-called process of 'delayering'). It is a result of greater decentralization of decision-making powers within firms, which inevitably required a redefinition of the managerial roles.

Many firms (especially in the high-tech sector) have created an internal organization where the managers are expected to encourage the creativity of their employees while the employees are expected to freely cooperate with others within an open job framework (one where their duties are continuously changing, often on their own initiative). Though sometimes seeming chaotic, such firms appear to be able to effectively co-ordinate the actions of multitudes of individuals within them under at least some circumstances. I believe that they do so because they have been able to create structures of intersubjective meaning manifested as an organization culture in which, first, their employees do not act in opportunistic ways, but are rather motivated by a variety of factors, such as morals, peer-pressure, intrinsic factors (that is, a work ethic), pride in a job well done, and positive incentives in the form of profit-sharing or stock options, and second, these structures create sufficient compatibility of actions among employees. In addition, it is worth noting that, though the intra-firm behavioral rules may be few in number in firms with a great deal of decentralized decision-making, the employees are also governed by wider social rules, such as, for example, courtesy and honesty, which also contribute to making order and cooperation possible.

If at this point stable firms with decentralized decision-making are not very common, a possible reason for it may be that the business world and the society know little about the institutional structures that will properly establish the right motivational factors and create an effective structure of shared meanings. This might also be the reason for the seemingly transient nature of some firms with great degrees of decentralized decision-making. My conjecture is that we are in the early part of the evolutionary development of decentralized decision-making, and much more needs to be discovered and understood to fully take advantage of this institutional form. However, I certainly do not mean to give the impression that decentralization is some sort of an organizational panacea. There are many circumstances where it would be inappropriate and its ultimate effect nothing but institutional destabilization and a great amount of internal discoordination. As Ebeling pointed out above, the structures of intersubjective meanings are not perfect as co-ordinating forces, and it is possible that they will be insufficient to achieve necessary co-ordination in some or even many situations. In fact, I believe it is safe to say that relying on structures of intersubjective meaning will *never* achieve the level of co-ordination that can be achieved through conscious co-ordination. Also, despite the existence of all the other motivational factors, employees may nevertheless decide to act in narrowly opportunistic ways. Yet we see – and will continue to see – firms still engaging in decentralization of decision-making because sometimes the potential benefits of decentralization, such as the greater employee

creativity, innovation, and even entrepreneurship, are simply too attractive and trump the potentially considerable downsides.

NOTES

1. Contrast Wieser's quote with a remarkably similar quote by Alfred Marshall, made only months prior: 'Thus there is *de facto* some sort of profit-and-loss sharing between almost every business and its employees; and perhaps this is in its very highest form when, without being embodied in a definite contract, the solidarity of interests between those who work together in the same business is recognized with cordial generosity as the result of true brotherly feeling. But such cases are not very common; and as a rule the relations between employers and employed are raised to a higher plane both economically and morally by the adoption of the system of profit sharing' (1925, p. 627).
2. In fact, Simon presents his arguments in this article as a direct critique of New Institutionalist Economics: 'The attempts of the new institutional economics to explain organizational behavior solely in terms of agency, asymmetric information, transaction costs, opportunism, and other concepts drawn from neoclassical economics ignore key organizational mechanisms like authority, identification, and coordination, and hence are seriously incomplete' (1991, p. 42).
3. Simon here is, without acknowledging it, adopting a part of the argument for the existence of the firm first made by Alchian and Demsetz (1972). However, Simon rejects the rest of the Alchian and Demsetz story: they explain that, owing to this inseparability of individual employee contributions to the firm's bottom line, managers will simply pay employees a fixed wage, assuming the residual claimant position for themselves. They can then monitor employees to determine whether they are exerting the proper effort.
4. Simon makes an interesting point on operations according to simple commands: 'For the organization to work well, it is not enough for employees to accept commands literally. In fact, obeying operating rules literally is a favorite method of work slowdown during labor–management disputes, as visitors to airports when controllers are unhappy can attest' (1991, p. 32).
5. Simon in particular intended to restore the reputation of government: 'Large organizations, especially governmental ones, are often caricatured as "bureaucracies," but they are often highly effective systems, despite the fact that the profit motive can penetrate these vast structures only by indirect means' (1991, p. 43). His insights would explain why we sometimes observe government agencies that work relatively efficiently, despite having a very 'wrong' incentive structure.
6. See Kahneman, Knetsch, and Thaler (1986); Frey and Bohnet (1995); Konow (1996).
7. Minkler includes a section in the paper on the methodology of the survey. He acknowledges that many economists are skeptical of surveys for the basic reason that they measure attitudes rather than actions. He examines the literature on the survey methodology, which in general finds that attitudes are a good indicator of future behavior. He also discusses two sources of potential biases in surveys, including a social desirability bias. It refers to a situation where 'respondents tailor their responses to draw a favorable picture of themselves at the cost of providing truthful answers' (2002, p. 16). Minkler dismisses the concern by noting that the 'respondents subject to social desirability bias in their survey responses are also those most likely to be subject to its effect in firms. If the norm is to work hard in their firm, those most likely to overstate their propensity to work hard because of social desirability bias would also be those most likely to conform to the norm' (ibid.). For further discussion, see pp. 15–19.
8. Langlois continues: 'This is not to say that a norm must always emerge or that the mechanism of repeated play must always solve the prisoner's dilemma in a happy fashion. There are far too many examples of social situations in which norms have collapsed or

failed to emerge and in which the dilemma of this game is all too real. It is a major task of research in this area to understand the circumstances under which efficiency-enhancing norms will in fact emerge' (1992, p. 173).

9. Though commonly seen with hobbies, we also observe this phenomenon with very successful and wealthy individuals who often continue to work very hard for the pure satisfaction that it brings. Individuals such as Donald Trump or Paul McCartney come to mind.
10. We can put another twist on this: a job is 'interpreted' by the worker according to his own valuations and circumstances and context. Some jobs will be very enjoyable for some people according to the meaning that the actors assign to that job. A teacher of economics may be willing to work for a relatively low pay because the meaning that he puts on the job is that he is imparting an important worldview to others who are likely to act, politically or otherwise, according to that worldview. If his own ideology is important enough to him, this contextual, subjective meaning of the job can make the job worthwhile to him even at a relatively low pay.
11. One of his superiors described Fry in the following way: 'Art is not just an inventor . . . He is an innovator. He has a good feel for economics, practicality, and a strong profit motive. He proves things out in his own mind, but he has a strong sense of the end user' (Pinchot 1985, p. 138).
12. In this section I will be mostly relying on Richard Ebeling's interpretation and extension of Schutz's work into the economic world for the basic reason that, as Ebeling explained, Schutz's 'published writings contain few concrete applications of his ideas to economic and market processes' (1999, p. 129).
13. Ebeling (1999) actually brings up Coase to support his application of Schutzian theories to economics: 'Coase does not deny that the "economic way of thinking" may have useful and indeed valuable applications in other surrounding disciplines. But he reminded his fellow economists that economics has potentially as many interesting things to learn from those other social sciences as it has to contribute to them' (p. 134). Ebeling does not extend any of his work on Schutz to the theory of the firm, though.
14. Ebeling (1994) presents a definition of an 'ideal type', based on the work of Max Weber: 'An ideal type is meant to be a stylized reconstruction, a selection of typical traits or characteristics conceived to represent for purposes of the analysis at hand those qualities in an individual, social institution or order, or historical period that enable an interpretive understanding of that individual, institution or order, or historical period . . . it represents an accentuation of certain qualities or characteristics and thus an idealization of the various attributes the individuals or objects possess or have in common' (p. 86). He went on to point out that '[t]he *ideal type* is a composite image of an individual or group of individuals created in the mind of a person wishing to either understand their actions in the past or anticipate their actions or reactions to various circumstances in the future. The complexity and difficulty for the individual attempting to construct and apply ideal types for the purposes of forming expectations about the possible actions of others arises from the fact that two problems confront him: first, it is necessary to enumerate the various idealized characteristics and attributes believed to be relevant for understanding what makes particular human beings "tick"; and, second, and often much more difficult, it is necessary to evaluate the relative importance (the "weight") of each of these behavioral characteristics or qualities in alternative and changing circumstances. Only success in both – an understanding of the relevant behavioral characteristics and their relative importance in an individual's actual conduct in a specific setting – enables correct expectations to be formed' (p. 89, italics in the original).
15. Interestingly enough, Foss (1997) criticizes the existing Austrian work on economic organizations for underestimating 'the role of shared mental constructs – theories, norms, ideologies, culture, and so forth – in coordinating a complex division of labor' (pp. 188–9), and points to Ebeling's early work on typifications (1986) as one exception (p. 189, footnote 9). Though Foss 1997 and 1999 contain some discussion of these issues (see below), he does not go far enough in explaining how these shared mental constructs can effectively bring about order in a firm.

16. Foss 1997 and 1999 contain a cursory discussion of these issues (all discussion in Foss 1997 can be found on p. 192, and in Foss 1999 on pp. 475–7). Foss (1997) discusses the importance of corporate cultures, which he defines as 'shared mental constructs'. Foss makes no mention of Schutz but rather bases this discussion on the work of Thomas Schelling and Harald Malmgren. He points out that these firm-specific mental constructs often have spontaneous origins, and 'help coordinate distributed knowledge by infusing employees with firm-specific knowledge' (p. 192). He also rightly emphasizes that they change over time, and may be influenced, though not predictably designed, by management. In a short and general discussion, Foss emphasizes that a corporate culture may act as a way to organize a localized discovery procedure, which may in turn require incomplete contracts. He does not discuss its implications to creative action of the employees, nor to decentralization of decision-making with in firms. The same is true of Foss (1999), where Foss considers the Schutz-influenced (through Lachmann) contributions by Langlois (1986b) and O'Driscoll and Rizzo (1985). Foss discusses the importance of typification processes in firms to explain how co-ordination can be achieved by managers who are limited in their planning and ordering abilities. But, though Foss does hypothesize that such a system would lead to decentralization pressures within firms, he does not consider its implications to the actions of the employees in any detail.
17. The rest of this quote is also relevant and bears reproducing here: 'If authority is used to transmit premises for making decisions rather than commands for specific behaviors, then many different experts can contribute their knowledge to a single decision. Information and policy rules can flow through the organization along many channels, serving as inputs – decision premises – for many organizational behaviors' (Simon 1991, p. 32). Managers can aid the process of knowledge co-ordination by establishing a proper culture or constructive rules, in other words.
18. This is in keeping with Kreps (1990), who introduced a basic theory of corporate culture. Foss sums up his argument in the following way: 'Kreps argues that firms may develop implicit contracts that align incentives by signaling to employees that management will not opportunistically take advantage of them in the case of unforeseen events, although nothing specific is being said (or can be said) about the event' (1999, p. 476). Foss builds on Kreps's insight to conclude that 'an important aspect of what a firm's leaders can do is to influence and steer the development of schemes of typification that are flexible enough to accommodate unforeseen events, and that help agents coordinate their interdependent activities' (ibid.).
19. Kolind ultimately failed in this, as noted in Chapter 3. Oticon was unable to sustain its radically decentralized organization. Though this was most likely due to the inability of Oticon's management to abstain from selective interventions, again as documented in Chapter 3, it appears that the lack of an organizational culture binding the employees together accounted for some part of the failure. In a meeting that led to the unraveling of the radical decentralization in Oticon in 1995, 'employees dramatically expressed their concerns about the gap between the Oticon value base, and the way the company was actually run' (Foss 2001c, p. 22). Without that organizational culture creating the structures of intersubjective meaning and organizational identification, radical decentralization of decision-making will be unstable and will not be able to survive.

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