

# How Rational Are Business Firms?

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*SUMMARY: This paper explores decisions in business firms. The assumption of perfect rationality and the "maximization metaphor" is criticized. It focuses on "procedural" or "subjective" rationality, where reasoning processes vary from one individual or group to another according to ordinary learning mechanisms. It is concluded that insights, knowledge and procedures that underlie business decisions cannot be adequately explained in the context of the formalism characteristic for the neoclassical paradigm in economic theory. The study uses empirical observations based on interviews with an owner of a medium-size firm.*

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## 1. Introduction

Tackling the problems of today begins with analyses of routines that derive from yesterday's problems. This insight is the preliminary step that leads me to question the adequacy of the classical postulates of economic rationality. That is to say, that images of decision-making which assume optimization over given alternatives are incomplete. The classical postulates are also inconsistent with the behavioural regularity documented in the field of bounded rationality, by sociologists and psychologists. In a critical essay about utility maximization Frey and Foppa (1986) suggest a "new perspective", where psychological processes and changes in constraints are considered as the driving forces for human action.

They distinguish two stages of decision-making, which mainstream economics collapses into one. The first and crucial stage determines alternatives within the possibility set known to an individual and the second stage determines the choice within the individually known possibility set. The determination of the set of alternatives is crucial as a great many potential options are excluded. Frey and Foppa argue that in most cases the final set of possibilities contains only a few alternatives or just one. Consequently, the second stage of decision making is comparatively unimportant. In a study of relationships between market decisions and the public policy process a third stage was included (Gunnarsson 1992). This stage concerns the focusing attention on the need to revise prevailing strategies. It leads us to consider procedures that motivate individuals and groups to attend to new information and to look critical upon existing routines.

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maximizers knowing the correct specification of the equilibrium relationships between market prices and private signals, but are uncertain about the parameters of these relationships, which are learned by repetition (Hashem Pesaran 1987 p 33). This framework, however, neglects matters about learning “the correct specification”. Hayek (1949) pursues this subject a little deeper in terms of a “wider aspect of the problem of knowledge”, which examines the question under what conditions the “subjective data” correspond to the “objective facts”. “Objective facts” are synonymous with “expectations of the same set of events” on which all individual plans must be based in order to be carried out. Hence, it is reasonable to associate “objective facts” with “the correct specification of the equilibrium relationships”. If plans based on “subjective data” are not mutually consistent, the agents carry out their transactions in an iterative process with stepwise revisions of these data, where “subjective data” of buyers and sellers eventually will come to correspond with each other and with the “objective facts”.

However, the knowledge participants in markets acquire is the knowledge they are bound to acquire in view of the “subjective data” they originally have and how these data are changed. Since the knowledge they acquire is obtained in the course of the implementation of a given plan, changes in the data of the plan (“subjective data”) are for the most part due to learning new facts as it were by accident. Hence “equilibrium analysis” or formal economic analyses, which conveys some knowledge by practical reasoning within a given economic process, does not really tell us anything about how mental models that frame economic decisions are learned (the “wider aspect of the problem of knowledge”). Similar conclusions have been drawn by Kirzner (1974 p 31), who found that learning about “subjective data” is crucial to the economizing activity, but cannot per se be analyzed in terms of economizing, maximizing or efficiency criteria. Instead, Hayek associates this kind of learning with institutions like the press and advertising, while Kirzner refers to the “entrepreneurial element of human action”.

This is the spirit in which the present paper has been written. It has a focus on business decisions. At the centre of concern is “procedural” or “subjective” rationality, where decisions are made from reasoning processes that vary from one individual or group to another. Contradictory to “substantively rational behaviour” (utility maximization) – where the premises in the form of preferences, sets of possible actions and computational means are given – the premises are constantly changing during series of trials based on ordinary learning mechanisms (Simon 1986).

That is to say, that it is necessary to look directly at the decision mechanism and processes (cf. Simon 1957, Simon 1986, Gunnarsson 1992). Behaviour, that seems unreasonable from an observer’s point of view, may be reasonable, given the premises of the subjects in the form of procedures and knowledge.

One implication of this approach is that preferences and opportunities are less clear than usually assumed in theories of rational choices. Decision processes are not mere

ways to choose among alternatives. I am arguing that they involve developing of meaning, discovering reality as well as constructing it (cf. March 1987). It is referred to observations of business decisions of a non-repetitive sort arising initially in a highly unstructured form (non-programmed decisions) (Cyert 1988 p 30).

My examinations rest on the assumption that the agents restrict flexibility of action by imposing *operating procedures* on their behaviour. Before entering into a detailed discussion it might be useful to briefly define this concept. Operating procedures can be defined generally as "procedures for making daily decisions" (Simon 1981 p 56). This definition covers, for instance, algorithms that are well-defined sequences of operations, i.e. calculational procedures of some kind (Penrose 1990 p 17). However, there may be calculations without behavioural implications and there may be behaviour without any bases in calculations (cf. March, Olsen 1979 p 15). In recognizing this dilemma, we must admit that an algorithm can always be expressed in symbols, i.e. it is communicable, but there are operating procedures where individuals and groups behave according to tacit knowledge: one knows how to bring about an action, but one is not able to formulate any reason verbally. This group of procedures without any basis in calculations includes what Giddens (1979 p 56) calls "practical consciousness": tacit knowledge that is skilfully applied in the enactment of courses of conduct, but which the actor is not able to express in words.

Examinations of operating procedures demand a host of empirical facts about decisions and individual decisionmakers. Some facts were gathered in a study using observations based on indepth interviews with a selected group of key people involved in the administration of a public policy on the retrenchment of a Swedish shipyard (Gunnarsson 1992). Since this paper focuses on decisions in business firms, I shall limit myself to a presentation of a number of interviews with Charlie, who is managing director of one of the growing firms (Salvation Company) in the region where the yard was situated and also director of an investment trust company (Coming Company). A considerable amount of government money was allocated to this company, which was set up in order to compensate for the jobs lost when the yard was closed down. One purpose of the study was to clarify whether firms conduct their business in what is often referred to as a "fishbowl" neglecting the need to rethink their strategic position towards the public policy process.

Three rounds of interviews were carried out at regular intervals over the two-year period during which the events evolved. At the centre of concern were the perceptions the interviewees had of problems and events over this period. The interviews, which were very candid, were recorded on tape and transcribed. The following types of questions were asked: "What has actually happened in connection with the closure of the shipyard"? "Which factors are of importance"? "Who are the main actors and what are

their roles”? “How would you define your own role and how do other actors define your role”?

## 2. Empirical evidence

Originally, Charlie was a farmer supplying other farmers with cleaning and similar services. That is to say, that he has the typical background of an entrepreneur, i.e. there is an occupational link connecting his previous occupational experience and the business he has founded. The empirical observations concern procedures and routines. However, Charlie is not a puppet of these operating procedures. From time to time the subjective insights that underlie them are made discursive and reason is given whether they should be continued or changed. Thus, a fundamental concern of my investigations is ways of acquiring and abandoning these procedures through different kinds of reasoning. It is important, however, not to put too much weight on reasonings neglecting the original problem of forming reduced representations of the observable world.

There are some basic categories by which Charlie represents his situation. He maintains, for instance, that owners of small or medium-size firms and managers of large firms have different notions of organizational matters. Managers of large firms “are good at administration and negotiation...What they do is carefully organized. They don’t just say: ‘Hoopla! There is something. Let’s have a look at that’”. Charlie’s world, on the other hand, is tangible. His job involves dealing with hundreds of new “business ideas”, such as the acquisition of new firms, joint ventures, new products, meetings with inventors, but also down-to-earth problems about how to manufacture a new product.

In looking upon the notion Charlie has of his parent company, we notice the importance of a “philosophy” whose central propositions are “to establish small and medium-size firms”, “to focus attention on people” and the “autonomy of individual units”. Hence he simplifies by employing *stereotypes* (sets of axiomatic propositions that are not always made explicit or unified into a coherent theory) that constitute reference-points in reasoning. The need to simplify also raises questions about the way he deals with all the hundreds of things facing him in his everyday activity. My interviews suggest that he classifies the enormous number of events into *stable intermediate forms*. This concept has been used by Simon to denote categories, which simplify problem solving in the sense that they constitute a basis for selective trial and error (Simon 1981 p. 205). Subsidiary companies and inventors are classified in “groups”, options for new production and firms acquired are assigned into “projects”. These “intermediate forms” are effective in extending the field of control rapidly.

The next categorization to be noticed concerns *risk*. The risk category determines input values in many parallel processes. It influences his notion of managerial control: He considers it as important that his holdings secure him the right to exercise a direct

control. Hence, one condition for being a part-owner in Coming Company (the investment trust company) was that he had a majority in the company, otherwise he would run the risk of not being able to control his assets: "We put Salvation Company into this/ Coming Company/...we take a risk and therefore we want to have the right...". Even when he shapes his communication networks, risk is an important factor: "To involve business friends is a form of risk-spreading". Risk-aversion has a direct influence on operating procedures in the sense that it leads Charlie to draw action-oriented conclusions like "not too many minority owned subsidiary companies" (otherwise "we run the risk of loosing our capital").

One purpose of the interviews was to clarify the relationships between politics and economic activities. One finding that emerged from my interviews was that Charlie makes a clear-cut distinction between business and politics; between his own field of operation and the public sphere. We should perhaps take a look at his notion of Coming Company of which he is the managing director. Since the company is partially financed by the government, its operation is a subject of public debate. The study suggests that Charlie forms one representation of a zone for the generation and evaluation of market opportunities, and another category for a zone which links up with the public sphere. Accordingly, the representative of the state on the board and the executive committee of the company has a crucial role in encounters with the public sphere: "He is much more extrospective. I think about mass media...We're very different. He is arguing that we have to inform the public – we are a company owned by the state". Thus, when Charlie is concerned with the interaction between the company and the public sphere, he suggests an uncommunicativeness: "We want to work in peace and get something done...We inform the press every three months". He distances himself from politics, "which don't concern business": "Politicians often put issues about unemployment on the agenda... Often more about politics than about business".

Let us instead consider the way Charlie forms these categories. In verbalizing his learning ("reflexive calculations"), he refers to personal experience and practices. That is, reasoning about and reproduction of operating procedures are not based on theoretical training. Instead, he stresses the importance of "getting impulses" from which he picks up opportunities that can be introduced into the market: "Usually, I think about presentation by inventors and entrepreneurs...You combine these and suddenly you get a flash of genius". When subsidiary companies are started up, he takes part personally until the operations are routinized: "Once a company is functioning, I can withdraw so that someone else can take the driver's seat to continue where I left off".

We may view the categorizations of relevant information as a repertoire or database for reasoning about operating procedures and routines. It is true, then, that for instance, project evaluation follows axiomatization and propositional reasoning, but, at the same time, this repertoire contains data-structures (categories) which cannot be used in for-

malized reasoning processes. This discord leads Charlie to the following conclusion: "There are no routines for acquisitions of firms". Business concepts proposed by inventors are multifaceted and thus cannot be defined precisely: "After thirty years in business one knows that a modest person who has not formulated his idea in writing might have a very good product". Charlie admits, however, that during recent years it has been necessary to combine practical knowledge and theoretical training.

It is alien to Charlie to derive conclusions from propositional reasoning. Instead, he draws action-oriented conclusions by recognizing that a situation has distinct aspects. He combines representations of knowledge and beliefs in *bipolar reasoning* (good versus bad) and by *making distinctions*. For example, he makes clear-cut distinctions between politics and business, which lead him to draw the following conclusion: "Politics are not about business". He defines his own role in contrast to managers of large firms ("they are good at administration and negotiations") and he contrast his notion of Coming Company with unsuccessful investment trust companies: "Their experience shows, that we have to be extremely cautious with high-tech". Decision alternatives also derive from *reasoning in communication networks*. Opportunities to be introduced into the market are put on the agenda by persons Charlie happens to be acquainted with: "business friends" (mostly members of the boards of subsidiary companies), inventors and personnel in departments of Salvation Company. Also banking connections, accountants and consultants are important. It should be pointed out, however, that ways of using the network change with the business cycle. Owing to a boom, the number of market opportunities was drastically reduced between my second and third interview: "Only fortune hunters are left". Thus, Charlie had to play a more active role. He had to initiate his own search in the networks.

### 3. Conclusions

This paper concerns decisions in business firms. The assumption of perfect rationality and the "maximization metaphor" have been criticized. Since the empirical evidence is fragile, no far-reaching conclusions can be drawn. I limit myself to a few remarks, which, if anything, are suggestions about what seems to be productive orientations for future treatises on business decisions.

I have been arguing that managers restrict flexibility by imposing routines ("operating procedures") on their behaviour, which is consonant with a theory that sees firms as more or less loosely structured clusters of routines – ways of doing things and ways of determining what to do. Cyert, for instance, classifies routines recurring in different steps of business decisions in one category relating to communication requirements of the organization and one relating directly to the solution of decisional problems (Cyert 1988 p 30). The supreme importance of the first type of routines was displayed in my interviews with Charlie. References to communication requirements are frequent: deci-

sion alternatives derive from communication networks, opportunities to be introduced into the market are put on the agenda by "business friends", banking connections, accountants and consultants.

It is true, that the institutional structures and regularities as routines and operating procedures explain behaviour of firms, but managers are not merely puppets of the institutions. An operating procedure is not established once and for all. Further research is needed to clarify the first stage of decision-making (cf. section 1): the focusing attention on alternative ways of doing things that could persuade individuals or groups to reconsider their operating procedures. That is, one fundamental concern, must be to examine how these routines and procedures are acquired and changed. The most adequate way of gathering empirical facts about this kind of learning is to let actual social encounters provide basis for interpretations: interviews with key people like Charlie are recorded on tape and transcribed. Textanalyses of these transcriptions give an inkling of the reason actors give when the subjective insights and knowledge that underlie operating procedures are made accessible and discursive.

Thus, individual-level analysis is important. It is also a natural consequence of abandoning the model of "substantively rational behaviour" in favour of "subjective rationality". As it was pointed out in section 1, the latter model is based on the assumption that reason varies from one individual or group to another according personal experience and capabilities for information-processing. It is a matter of course that a rational person must reason *about something* (knowledge, beliefs). Therefore, any considerations of differences between individual strategies for reasoning requires concern with how an agent represents relevant information. It should also be mentioned that just forming reduced representations of relevant information can lead to changes in operation procedures. The costs in terms of time calculating changes are considerable. If information is organized efficiently, these calculations would take less time. For example, Charlie simplifies problem solving by classifying the huge amount of information into "stable intermediate forms" (companies are classified in groups, new ideas are assigned into projects).

Charlie reasons with *commonsense concepts*. It is practical, occupational, rather than formal experience that has formed his world view. In contrast, choice processes in economic analysis are founded on symbols that are classical definitions like mathematical concepts based on necessary and sufficient conditions. However, unlike mathematical concepts, commonsense concepts cannot be defined via necessary and sufficient conditions. This leads me to conclude that insights, knowledge and procedures that underlie business decisions cannot be adequately explained in the context of the formalism characteristic for the neoclassical paradigm in economic theory.

Reasoning with commonsense concepts is discussed by Reiter (1987). Here it is sufficient to note that this kind of concepts brings us to reasoning patterns based on com-



parison operations according to classical laws of association: Hypotheses are generated and tested according to (1) if information signals occur simultaneously, (2) if they occur in close succession, (3) if they are similar, (4) if they are contrary (Kohonen 1988). One finding that emerged from my interviews was that, for Charlie, associative learning is the standard pattern of thinking about economic situations. Some basic patterns were discerned. One is that he combines sense-making data-structures in "bipolar reasoning" by being capable to recognize that a situation has distinct aspects.

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