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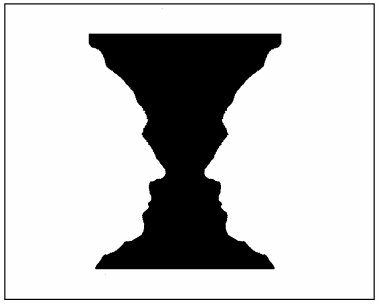

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Introduction

The concept of bounded rationality is a hybrid between realism and abstraction. It modifies the abstract rationality assumption of economic theory – economic man as a rational utility maximizer with unlimited computational resources – in the direction of "more realism", but it sticks to the idea of rationality, although in a restricted form. In doing so, it maintains a normative spirit: the focus is on *intendedly rational* behavior. This focus on rationality is problematic. Many economically important activities defy an easy dichotomization in the rationality/irrationality dimension. Yet such a classification is unnecessary. To develop a theory of economic processes, we should concentrate on *important* patterns of action rather than restrict our attention to rational modes of behavior, however defined. As Ronald COASE [1984, 31] put it, we should start "from man as he is".

From this point of view, the abstract rationality assumption may still be defended as a useful as if construct. The first part of the paper briefly reviews this position. It seems clear, however, that problems of organization and contracting can hardly be tackled successfully within a full-blown abstract rationality framework and so the merits of the "bounded rationality" approach will be discussed in the second part. It will be argued that this approach is much too narrowly confined to rationality and computational simplicity and covers only rather special aspects of human behavior, and thus should not be expected to provide a firm foundation for institutional analysis. The third part offers some concluding remarks.

2. Abstract Rationality as an As If Construct

2.1 Defenses of the Abstract Rationality Assumption

The defense of the abstract rationality assumption has never been that it is realistic. As COASE [1988, 3–4] remarked: "The rational utility maximizer of economic theory bears no resemblance to the man on the Clapham bus or,

I thank Gisela Kubon-Gilke for very helpful comments.

indeed, to any man (or woman) on any bus. There is no reason to suppose that most human beings are engaged in maximizing anything unless it be unhappiness, and even this with incomplete success". This is not, I think, controversial.

What *is* controversial, however, is the usefulness of the abstract rationality assumption. Two defenses have been proposed in this context, which may be termed the *a priori defense* and the *as if defense*. Let us consider them in turn.

The A Priori Defense. This defense of the abstract rationality assumption goes back to Carl MENGER [1983]. Menger proposed to *define* theoretical economics as being solely concerned with the course of events under the hypothetical assumption that man acts as a homo oeconomicus, guided solely by economic motives – the striving for the maximization of utility and profit. The existence of other motives is not denied, neither is it excluded that their effects might override the economic factors, but their workings are not seen as a theme which must be considered by exact economics; this theme is relegated to the other social sciences.[2] Such a defense has a very tautological flavor: an admittedly unrealistic picture of man, called homo oeconomicus, is construed, and it is investigated what the world would look like if it were inhabited by these imaginary beings. It appears like a cloud cockoo land which "may often be suggestive in unexpected ways" but seems fairly remote from any relationship with real economic processes (MARSHALL [1949, 644]). Such a defense can certainly not vindicate any prominent place being given to the abstract rationality assumption in economic theory, and I shall not consider it any further.

The As If Defense. This defense maintains that the abstract rationality assumption of economic theory is a useful *as if* construct which helps in the understanding of some real economic phenomena. The motivations which underlie economic behavior may be diverse, but we may argue that people behave *as if* maximizing a utility function. It has even been argued that outright erratic behavior may be formalized as abstractly rational.[3] We are thus entitled, it is argued, to analyze economic behavior in terms of abstract rationality, in spite of the fact that it is quite differently motivated. If people are following strategies or rules of thumb, these strategies or rules of thumb have been selected because they have been proven to be fruitful in the sense of leading to the best results. Thus they lead to choices which approximate that which would be obtained by abstractly rational behavior. It is even abstractly rational to adopt these strategies and rules of thumb rather than engage in abstract rational decision-making, once the costs of calculation are taken into account.

[2] MENGER [1883, 59]. Menger distinguishes between "exact" and "realistic empirical" economics. The latter is only able to establish historical regularities without proving their necessity. (It should be remarked here that Menger's economics, to its own advantage, does not necessarily confirm to his methodological prescriptions.)

[3] Gary BECKER [1962] shows that erratic behavior of individuals may lead to group behavior which can be described by means of a stable utility function. See also SCHLICHT [1981] for an argument that economic incentives may be extremely powerful determinants of collective behavior even if quite unimportant on the individual level.

The *as if* defense seems to me to be of the utmost importance in economics, so let us investigate it more closely.

2.2 The Billiard Player

The following example, due to FRIEDMAN and SAVAGE [1948], illustrates the *as if* defense nicely. "Consider the problem of predicting the shots made by an expert billiard player. It seems not at all unreasonable that excellent predictions would be yielded by the hypothesis that the billiard player made his shots *as if* he knew the complicated mathematical formulas that would give the optimum directions of travel, could estimate accurately by eye the angles, etc., describing the location of the balls, could make lightning calculations from the formulas, and could then make the balls travel in the direction indicated by the formulas. Our confidence in this hypothesis is not based on the belief that billiard players, even expert ones, can or do go through the process described; it derives rather from the belief that, unless in some way or another they were capable of reaching essentially the same result, they would not in fact be *expert* billiard players".[4]

This argument should, I think, not be dismissed easily. In fact, much of what has been written in the vein of the New Institutional Economics seems to me to be fully compatible with such a view. It is argued that routines are adopted and rules of thumb are selected in order to economize on costs of calculation and information, but these rules and routines have been adjusted in a trial and error process such that only the best survive. The arguments are also applicable to expert billiard players, since they will certainly adopt heuristics, experiment with them and adapt them while learning the game, but this repertoire of heuristics will certainly not resemble the set of mathematical formulas mentioned by Friedman and Savage. Similarly, we may be entitled to describe many economic actions in terms of abstract rationality.

2.3 A Precondition for As If Constructs

There is, however, an important point implicit in the billiard player example: *We can name and describe a mechanism which links actual behavior to our theoretical* as if *construct*. We can, for example, name a mechanism which will lead the billiard player to play *as if* he knows all the mathematics involved.[5] Similarly we may describe the behavior of an individual in terms of abstract

[4] FRIEDMAN [1953, 21]. Note the tautological ring reminiscent of Menger in the last sentence!

[5] This applies also to FRIEDMAN's [1953] other examples. Friedman implies in his "predictionism" that as if arguments are legitimate even if such a link can not be established. This would, however, amount to making correct predictions for the wrong reasons. Apart from myself being not interested in arriving a correct conclusions by starting from wrong presuppositions, such a spurious correlation in the past should not, I think, increase our confidence that similar coincidences will occur in the future.

rationality although he does not know his utility function. A consumer chooses according to his experience. He may remember that he enjoyed the pizza pepperoni more than the pizza margarita and thereby discovered a part of his preference ordering which was previously unknown to him, and so forth, and in the end he may have developed a consumption pattern which is optimally adapted to his taste.[6] This may well be described *as if* generated by abstract rationality. Similarly, a firm may not know its cost function, but if it tries to minimize costs by some trial and error process, we may describe this in terms of an underlying cost function. We are, however, not so easily entitled to assume that the firm maximizes profits if the apparent goals of the firms are quite different. In this case we must nominate a mechanism which will establish the link between what the managers do and why the outcome may be described in terms of profit maximization. We may resort to competition as that mechanism, but it seems unclear that the strategies with the highest chance of competitive survival are profit- rather than, e.g., growth-maximizing.[7] Still, many arguments in the New Institutional Economics are of that sort: they explain the existence of certain rules and institutions by pointing to their competitive advantage over other forms of organization. This is, in fact, a characteristic feature of WILLIAMSON's [1975] "organizational failures" framework.

If, however, some modern macroeconomists attempt to describe the entire household sector of an economy *as if* all households were identical, and perhaps of infinite life, without giving any reason which could link such a construction to reality, this seems unsatisfactory, since more realistic life-cycle patterns of individual consumption and the dynamics of wealth distribution may very easily lead to divergent aggregative results.[8]

2.4 The Advantages of the Abstract Rationality Assumption

Assume for the moment that a certain phenomenon – say, the moves of an expert billiard player – can sensibly be described by an abstract rationality assumption; we are able to supply a convincing reason for its doing so, although we know that the billiard player acts quite differently. We thus have two

[6] Note that this argument presupposes a preference ordering which is stable in the sense of not being affected by the search process. The hypothesis about the real world which is involved here may thus be wrong, i.e. the "isolation principle" may be violated, see SCHLICHT [1985, 19–21].

[7] Growth maximization may actually involve severe suboptimalities, cf. SCHLICHT [1988, 97–98].

[8] I refer here in general to the "real business cycle theories" surveyed by PLOSSER [1989], and in particular to FRIEDMAN's [1957] "permanent income hypothesis" versus the "life cycle hypothesis" of saving advanced by MODIGLIANI and BRUMBERG [1954]; and to my own example of the "system effect" of aggregation in the context of STIGLITZ' [1969] distribution model (SCHLICHT [1977, 90–92]; [1985, 87–93]).
Incidentally, abstract rationality is not the only possible *as if* construction. To paraphrase Coase, people may well behave as if maximizing misery although they try to increase their own happiness, but we ought to supply a reason for such an assumption.

possibilities to describe and analyze the actions of the billiard player: first, we may use the terms which the billiard player himself uses and describe his decisions in these "realistic" terms; and second, we may analyze his behavior in terms of abstract rationality.

It might be argued that it is always preferable to analyze the action in terms of the true motives rather than in terms of theoretically imagined motives, i.e. abstract rationality.[9] Such a naively realistic stance, although in itself very attractive, is, I think, not always theoretically sound. There are reasons which will make an abstract rationality approach more attractive than a realistic behavioral theory. We should not be lured by realism.

Manageability. One reason is that a behavioral approach may be much more complicated to the point of theoretical intractability whereas an abstract approach, although offering only a first approximation to true behavior, may be much easier to handle. If the behavioral approach is not manageable, it is not so useful theoretically and we should use an abstract approach which is vaguely right and, therefore, if manageable, vaguely useful.

Generalizability. However, a behavioral analysis will usually be much more manageable than an abstract analysis. The very reason why people prefer behavioral rationality over abstract rationality is quite often the impossibility of performing all the complicated calculations required by abstract rationality![10] The abstract approach has, however, the important advantage of being generalizable. The same laws which govern the billiard balls govern tennis, soccer, and, indeed, the universe, whereas the billiard players' strategies, as they conceive them, will be hardly applicable to such a wide range of phenomena. Behavior is governed by so many specific details. Organizational structures vary widely among industries, and the various customs and rules of thumb which people employ in the diverse realms of social life are very situation-specific and can hardly be expressed in general terms; they appear *ad hoc*. Theory seeks, however, to view the different events as brought about by a set of tendencies and forces with wide applicability. Theory ought to generalize; it cannot, as theory, be naively realistic – else it would cease to be theory, it would be description.[11]

[9] WILLIAMSON [1975, 249] argues in this way.

[10] This point is stressed by the proponents of bounded rationality. It should be noted, however, that a behavioral theory may be more complicated than the corresponding abstract theory. The finitely repeated prisoner's dilemma game can be analyzed abstractly in a very simple way, using SELTEN's [1978] "backward induction" argument, whereas an analysis in terms of behavioral rationality (e.g. SELTEN and STOECKER [1986]) seems more complicated. In a similar vein, implementation theory quite often gives the result that first best solutions can be implemented in a surprisingly simple manner, as has been pointed out to me by G. Kubon-Gilke.

[11] Simon's "satisficing" is such a postulate of wide applicability and may hence be used as a basis for a general theory of behavior which does not rely on abstract rationality. It is not clear, however, that people actually behave as satisficers, or whether the satisficing idea is just another (possibly fruitful) *as if* construction which requires additional arguments to link it to actual behavior.

Theory thus requires an abstract approach. This does not amount to saying that the abstract rationality approach is the only possible way of theoretically generalizing about economic phenomena. In fact, abstract rationality, although often useful, may also be misleading, mainly if the precondition is not met that a mechanism can be instanced which links the *as if* contruction to actual processes. There are, however, other limits to the abstract rationality assumption.

2.5 The Limits of As If Abstract Rationality

Separability of tastes and constraints. Rational maximizers maximize a well-defined target under a well-defined constraint by selecting an appropriate action. This requires a separability and independence of tastes and constraints, not so much as a matter of logic but as of analytical usefulness. The idea that changing trade-offs between alternatives affects choices in a systematic way breaks down if the factors which affect these trade-offs simultaneously affect the evaluation of the alternatives, i.e. the utility functions; anything could happen. If prices enter utility functions, nothing useful can be gained from an analytic point of view by making a distinction between tastes and constraints. Thus the abstract rationality approach requires that a useful distinction between tastes and constraints can be made.

The Chess Players. Herbert SIMON [1972, 165–171] dicusses the game of chess to illustrate the shortcomings of the abstract rationality approach with respect to actual problem-solving. Chess is trivial in the game theoretic sense since it has only a finite number of possible moves and finitely many turns for each player. It is theoretically clear that there exist optimum strategies for each player, either pure or mixed. Simon stresses what von Neumann and Morgenstern have observed, namely the practical impossibility of computing the optimum strategies: "This relative, human difficulty necessitates the use of those incomplete, heuristic methods of playing, which constitute 'good' Chess; and without it there would be no element of 'struggle' and 'surprise' in that game (VON NEUMANN and MORGENSTERN [1944, 125]). Indeed, the assumption that all players play *as if* playing optimally in the game theoretic sense would come down to the following: the first player chooses a strategy at random among the optimal strategies, and the second player selects his best response.[12] The whole game would be reduced to throwing dices in order to play the mixed strategies selected; "the play would be decided before it starts" (VON NEUMANN and MORGENSTERN [1944, 125]). There are childrens' games which have obvious winning strategies for the first mover, and chess would have the same character for any abstractly rational player. It is precisely because humans are not abstractly rational players that chess is considered an interesting game.

[12] They will, of course, be sophisticated enough to take into account arguments of backward induction and, if necessary, of forward induction.

WILLIAMSON [1975] has argued similarly with respect to economic organization: one of the key factors which brings about the organizational structures in the economy is that people do not act on the basis of abstract rationality. Economic organization – the division of labor, specialization, adoption of routines etc. – enable men to perform tasks which they could not perform through conscious planning.[13] Thus the study of economic organization cannot usefully proceed in terms of a full-blown abstract rationality assumption.

2.6 Black Boxes

Such an argument does not exclude however, that a given organization behaves *as if* deciding optimally in an abstractly rational way. For instance, a classic study of organizational structure in British manufacture arrived at the following conclusion with regard to the interrelationship between structure and success: "Again no relationship between the 'rules' of management and business success appeared in the preliminary analysis of the research data. The twenty firms graded as outstandingly successful seemed to have little in common. When, however, firms were grouped on a basis of their production systems, the outstandingly successful ones had at least one feature in common. Many of their organizational characteristics approximated to the median of their production group. For example, in successful unit-production firms the span of control of the first line supervisor ranged from twenty-two to twenty-eight, the median for the group was twenty-three; in successful mass-production firms it ranged from forty-five to fifty, the median of the group being forty-nine; and in successful process-production firms it ranged from eleven to fifteen, the median for the group being thirteen. Conversely the firms graded below average in most cases diverged widely from the median".[14] In other words, firms clustered around optimal organizational patterns, but this was certainly not the result of deliberate optimization. In fact, since we do not have a theory which

[13] This is of course a fundamental theme in economics, most prominently present in the frequent discussions of the division of labor. Mandeville put it in 1729 as follows: "To Men who never turn'd their Thoughts that way, it certainly is almost inconceivable to what prodigious Height, from next to nothing, some Arts may be and have been raised by human Industry and Application, by the uninterrupted Labour, and joint Experience of many Ages, tho' non but Men of ordinary Capacity should ever be employ'd in them. What a Noble, as well as Beautiful, what a glorious Machine is a First-Rate Man of War, when she is under Sail, well rigg'd, and well mann'd! As in Bulk and Weight it is vastly superior to any other movable Body of human Invention, so there is no other that has an equal Variety of differently surprizing Contrivances to boast of. There are many Sets of Hands in the Nation, that, not wanting proper Materials, would be able in less than half a Year to produce, fit out, and navigate a First-Rate: yet it is certain, that this task would be impracticable, if it was not divided and subdivided into a great Variety of different Labours; and it is certain, that none of these Labours require any other, than working Man of ordinary Capacities", (MANDEVILLE [1924, 141 f]).

[14] WOODWARD [1958, 21]. See also ALCHIAN [1950].

would yield such predictions, we must rely here on experience and trial and error, just as a violin maker must rely on his expertise rather than attempting to calculate the optimum violin. (Note that Stradivarius experimented with the size of the violin body only to find out that the traditional size was just optimal! (BOYDEN [1989, 28])).

We may thus conceive firms as "black boxes" which behave *as if* directed by abstractly rational decision makers while we know that their actual working is brought about by the interplay of various customs, traditions, and institutional detail. This has, indeed, been the traditional approach in neoclassical economics. Such an approach seems appropriate if our focus of interest lies not so much on the firm's internal organization but rather on its role as a building block for a broader theory.

But if we want to understand the firm's internal organization and the nature of economic institutions, the abstract rationality approach will not tell us very much. If institutional structures are optimally selected, such a selection must work on the set of feasible alternatives, but the abstract rationality approach tells us nothing about what the feasible alternatives are; they must be presupposed. This is, again, similar to the chess player example: given the set of available heuristics, we may say that an expert chess player has adopted the optimal heuristics available to him. In other words, he does not maximize fully, but within constraints. To tackle these problems, which are central to any institutional analysis, it has been proposed to substitute bounded rationality for abstract rationality. So let us now consider this view in the context of institutional analysis.

3. *The Inadequacy of Bounded Rationality as a Normative and Positive Concept*

3.1 On the Notion of Bounded Rationality

The notion of "bounded rationality" has gained a prominent place in the New Institutional Economics, mainly through WILLIAMSON's [1975] insistence. The term was introduced by Herbert SIMON [1961, xxiv] as referring to human behavior that is "*intendedly* rational, but only *limitedly* so". The limits are due to cognitive constraints and language constraints. The cognitive constraints stem from the facts that we have limited possibilities of receiving, storing, retrieving and processing information without error, and that all this requires (costly) time and effort. The language constraints refer to our limited possibilities of communicating in a very detailed fashion and to the costs involved which increase with accuracy.

This notion of bounded rationality as well as its characterization in terms of information constraints and language constraints suggests a kind of *imperfect*

abstract rationality, and that full abstract rationality is more desirable than such an imperfect variant.[15]

3.2 Purposes of the Bounded Rationality Assumption

Several purposes of the bounded rationality assumption may be distinguished:

Normative Prescription of 'Good' Problem Solving. SIMON [1978, 8–9] starts from the observation that "the number of considerations that are potentially relevant to the effectiveness of an organization design are so large that only a few of the more salient of these lie within the circle of awareness at any given time, that the membership of this subset changes continually as new situations (produced by external or internal events) arise, and that 'learning' in the form of reaction to these consequences is the dominant way in which rationality exhibits itself" and concludes: "In such a world, we must give account not only of *substantive rationality* – the extent to which appropriate courses of action are chosen – but also *procedural rationality* – the effectiveness, in light of human cognitive powers and limitations, of the *procedures* used to choose actions". This procedural rationality is certainly conceived in a normative spirit and linked to the theory of heuristic search, cultivated in artificial intelligence and information processing psychology. The "rationality" part of the concept is, however, hard to maintain if it turns out that emotions, aesthetic judgements and other things usually not falling under the rubric "rational" enhance learning and problem solving. If this is the case, and I think it is, we should drop the "rational" in "boundedly rational" instead of employing phrases such as "rational irrationality" and that "irrationality is rational". Such statements merely establish the confusion of the concept and reaffirm that it ought to be avoided.[16]

Bounded Rationality as a Behavioral Assumption. Another purpose of bounded rationality is that it is intended to capture some dominant features of economic behavior, offering, so to speak, an approximation, to "man as he is". This seems the view basically entertained by WILLIAMSON [1975], [1985], although his allusions to "atmosphere", "dignity", "obedience" and so forth stretch the concept of bounded rationality far beyond what is usually conceived as rational.

[15] It is perhaps for that reason that Herbert SIMON [1978] himself, in an article exclusively devoted to rationality, has avoided the term "bounded rationality" altogether!

[16] I want to avoid a definition of rationality as a behavioral or normative concept because I think that this is inappropriate. Sensible behavior, as well as successful behavior, as well as actual behavior, is characterized not only by cognitions (which are the rational part) but also by emotions; these things go together, see sects. 2.3–2.6 below. Herbert SIMON [1978, 2] has noted, however, that "the term 'rational' has long had in economics a much more specific meaning than its general dictionary signification of "agreeable to reason; not absurd, preposterous, extravagant, foolish, fanciful or the like; intelligent, sensible".

Bounded Rationality as an As If Construct. Sticking to the usual usage of the rationality notion, we may still believe that people act from a variety of motivations, some sensible, some not, some rational, some not, but that their behavior may still be described *as if* they were boundedly rational beings. Such an approach is used in game theory when rational players are replaced by "finite automata" and this permits solutions to be reached which we want to obtain but cannot do so from fully abstractly rational players. It is again clear that the ideas people pursue, the heuristics they employ and so forth are quite different from what the automata do, but we may invent a mechanism which links actual behavior to the behavior of automata – indeed we ought to do this if we want the approach to make sense. This approach really boils down to the abstract rationality approach under additional constraints, and there is no necessity to discuss it any further. Additional problems rest entirely in the constraints which are usually taken as given *ad hoc*, whereas a serious approach would have to link these *as if* constraints to real psychological processes or behavior to avoid the problem that everything can be "explained" as maximizing something unspecified under some unspecified constraints. This is true also for the abstract rationality approach. But the problem is less severe there, since by definition fewer constraints are used and less arbitrariness enters in this sense.

The normative and the behavioral use of the bounded rationality assumption are closely linked, however, precisely because we should expect that people learn to behave successfully. Thus they will adopt effective strategies, they will learn how to learn, and so forth. This should, however, not be described as "rational" although it is not irrational either – the rationality/irrationality dichotomy is simply inappropriate with regard to both normative and positive issues. This can be illustrated by a few examples.

3.3 The Strategic Role of Emotions

Emotions play an important role in interpersonal relationships. Robert FRANK [1988] has elaborated on this issue. People like the Quakers, who are known to be honest to the point of foregoing their own advantage, are good business partners and may therefore be quite successful. It may be reasonable to be honest although it is certainly not rational in a traditional sense. It is also not boundedly rational if the constraints which distinguish bounded rationality from full rationality are cognitive constraints alone. Only if the bounds refer also to moral bounds can these cases be covered. This would, however, not be the traditional usage of the term and would also be inappropriate, since emotions which are functional in Frank's sense – honesty, guilt, pride, love – are not simply constraints but quite active determinants of action. These emotions play thus an important part in social life. People use them and should use them, and firms should and do take these things into account. This is neither "rational" nor "irrational", but it is sensible. Further, these things do not stem from

cognitive or informational constraints. If we want to built a realistic theory of institutions on bounded rationality alone, this would suggest that the strategic role of emotions is unimportant. This may eventually turn out to be the case, but we should not, I think, postulate in advance what seems to run against all naive evidence.[17]

3.4 Skills

We learn and do many things without really understanding what we are doing. The billiard player will presumably not know very much about theoretical mechanical dynamics, the singer will not know very much about how his vocal chord is controlled by his central nervous system, and so forth. All this depends on what Michael POLANYI [1962] termed *tacit knowledge*. NELSON and WINTER [1982, ch.4] have stressed this tacit aspect of skill formation in the context of economics.

We do not understand the skills we have but, skill acquisition is very effective. A physicist could earn a lot of money by simply devising an optimal violin, but the violin makers with their skills, heuristics, and aesthetic considerations have up to now been more successful.[18] Similarly, craftsmen or businessmen will rely very much on their skills and on their "feel" of the situation and they would, as a rule, be less successful if they ignored these aspects which escape the rationality/irrationality dichotomization.

3.5 Routines

Organizations are largely characterized by a set of routines which determine their inner "normal" functioning (NELSON and WINTER [1982, ch.5]). To a large part, these routines are present as tacit knowledge within an organization. Their utmost importance is evident. NELSON and WINTER [1982, 99] propose "that the routinization of activity in an organization constitutes the most important form of storage of the organization's specific operational knowledge". It seems, however, inappropriate to consider these routines as brought about by some kind of rationality, bounded or not: routines are just there. It is essential that they are partially automatic, like skills on the individual level. Further, emotions play an important part in keeping routines intact. They are often stabilized by firm specific norms of justice, fairness and appropriateness; their ultimate justification remains obscure, but they may be very functional. Again, the rationality/irrationality dichotomization seems inappropriate in positive and normative respects.

[17] It should be noted that Williamson used the term "bounded rationality" freely to include nonrational things like atmosphere and dignity but his arguments center on rational aspects like opportunism, specificity and so forth.

[18] It seems that physicists have tended to spoil rather than improve the violins, e.g. by "baking" them.

3.6 Obedience to Authority

The concept of authority and delegation is central to the theory of the firm. COASE's [1937] seminal contribution rests entirely on a distinction between market and command when he maintains that the distinguishing mark of the firm is the supersession of the price mechanism by command.[19] Starting from a rationality assumption (bounded or not), the distinction between exchange and command remains obscure: it would indeed be irrational to obey commands if no sanctions were attached to disobedience. Hence economists tend to think that obedience is brought about by sanctions, but then obedience is *exchanged for the absence of sanctions*. This point has been elaborated conclusively, I think, by ALCHIAN and DEMSETZ [1972]; from a rationality point of view, authority is "delusion" and firms are "legal fictions which serve as a nexus for a set of contracting relationships among individuals", in other words, the firm dissolves as a concept.[20]

Arguments of this type slip away from all empirical evidence and could, at best, be defended as *as if* constructs. It has been amply demonstrated empirically that *people do obey authority even without sanctions and even if they dislike very strongly performing the task they were ordered to do*. This effect is produced by situative factors alone.

This fact permeates everyday life, but what seems less evident is that the authority effect may be unbelievably strong and systematic. This has been firmly established by a series of studies initiated by STANLEY MILGRAM [1975]. People are prepared to obey commands with a high probability if ordered by a person in an "authority position" who takes " the responsibility", even if they very much dislike doing so – as evidenced by bad dreams subsequently – and in spite of the fact that no sanctions are available to the authority.[21] The stories devised to explain internal organization which rely on rationality (bounded or not) do not capture these effects adequately. It they were intended as *as if* explanations, it would have to be explained that behavior brought about by

[19] COASE [1937, 389]. See also SIMON [1951]. The dichotomization between market and command is, again, inappropriate since, e.g., routines escape this distinction but seem of the utmost importance, see section 3.5 above.

[20] Quotations from ALCHIAN and DEMSETZ [1972, 777] and JENSEN and MECKLING [1976, 310]. Note also that WILLIAMSON [1985, 50] dismisses obedience as an important factor on the ground that 100% obedience is "unwarranted" and a feature of "robots" which is, I think, rather misleading. Obedience need not be 100%, and it can be socially very functional (as Williamson himself notes), but it can also have disastrous effects. Still, it is a most important factor in social life, and positive analysis ought to take this into account.

[21] It should be stressed that some of the experiments were actually conducted in a business environment: a shabby opinion research firm. The authority mechanism worked there, too, although slightly less pronounced than in a research laboratory of Yale University.

authority without adequate sanctions works *as if* brought about by rationality in the absence of authority and adequate sanctions, but this is rarely done.[22]

3.7 Contracting

Take, as a last example, the notion of contracting itself, which certainly occupies a central place in institutional analysis. It seems incompatible with a rationality approach, bounded or not. Two persons enter a contract by declaring their intention to do whatever they have agreed to do. It is mutually understood that one person promises to behave in a certain way because the other person makes a similar promise. A contract refers, so to speak, not to isolated promises, but rather to an exchange of promises, explicit or implicit. These promises entail that the contracting parties *will keep their promises even if this runs against their immediate interest*. A promise that I will do what I am anyway preferring to do is just an agreement but should not be termed a contract, since such a promise would be unnecessary in the first place and there is no reason to pay a price for it.[23]

The conclusion of a contract is an exchange of declaratory acts: some gestures, some sound-waves, some patterns of ink – all this does not change anything real, it is entirely *symbolic*. From a rationality point of view, this should not change real incentives, and thus contracting should not be possible among rational individuals, bounded or not. Ultimately, keeping promises is irrational if no sanctions are present which enforce this; but if performance is tied to sanctions, the very act of concluding a contract must trigger a sanction mechanism which, in turn, must be tied to incentives, and so forth. Ultimately, symbolic action must be able to change real behavior somewhere in the system, else there would be no link between the triggering of the sanction mechanism and the conclusion of a contract. Hence symbolic acts must change behavior. Yet all this is unnecessarily complicated: a promise simply increases the probability of the action in most cases *ceteris paribus*.[24] In a rationality framework, it should change inclinations or preferences to perform certain acts in the future, but such a view seems not particularly useful and indicates that basic issues in contracting escape the rationality/irrationality dichotomization. Something more than, and different from, bounded rationality is needed to deal with these issues which are fundamental for any social theory.

[22] One way out is, of course, to speak about "internalized sanctions", but such a parlance begs the question. Actually, the economic theories of the firm, as reviewed e.g. by HOLMSTROM and TIROLE [1989], systematically disregard these effects.

[23] Hence, I distinguish between an "agreement" which serves a pure coordination function and is in the mutual interest ("We shall meet tomorrow") and a "contract" which involves, in Williamson's term, the promise to not behave "opportunistically" in the future.

[24] This problem is dealt with at length in SCHLICHT [in preparation] were various enforcement mechanisms (religion, moralistic aggression, pride and honor) are also discussed.

3.8 Bounded Rationality as Half-way House

My conclusion is this: Bounded rationality is really a half-way house between an *as if* approach based on abstract rationality and a realistic approach capturing important mechanisms which are the basis for institutions. It is neither realistic nor *as if*, but only limitedly so: it captures certainly important features of real behavior, but, with regard to institutional questions, not all and not the most relevant aspects. It may turn out, however, that it could serve as still another useful *as if* approach. But the point seems to be that the crucial features of obedience, routinization, contracting, and so forth, which pose difficulties in an abstract rationality framework, contain so many features which go beyond the rationality/irrationality dichotomization that a rationality view, bounded or not, seems inappropriate unless the concept is conceived as comprising many things not usually considered rational. Institutions are built on these features. Their raison d'etre is sometimes to protect man from his own foolishness (FREY [1990]). All this should not be excluded from consideration.

4. Generalizing About Institutions

4.1 The Problem of Balkanization

It is unfortunate from the point of view of present-day economists that the workings of institutions do not fit neatly into the abstract rationality concept, but the *as if* defense may still be used in a sensible way and enable us to gain some understanding, yet this should not be pushed too far. What Alfred MARSHALL [1949, 381 f.] said about market equilibrium seems to apply here too, namely that "the theory helps indeed to give definiteness to our ideas; and in its elementary stages it does not diverge from the actual facts of life, so far as to prevent its giving a fairly trustworthy picture of the chief methods of action of the strongest and most persistent group of economic forces. But when pushed to its more remote intricate logical consequences, it slips away from the conditions of real life". However, Marshall was also aware of the "growth and decay of custom" and its importance for economic progress, but he remained very cautious with regard to the application of economic arguments to institutional changes and he would certainly not have minimized the importance possessed by non-rational elements in this context.

Still, we are interested in the nature of economic institutions "which we are no longer content to take as ultimate and insoluble facts given by nature" and the problem arises of how to deal with these issues in a *generalizing* manner.[25] To insist on the diversity of routines, skills, obedience according to situative factors, and so forth, balkanizes economic theory. This is most unsatisfactory in view of all the regularities which we find in the real world. We should no

[25] Quotation taken from MARSHALL [1949, 640].

longer be content to take all the specifics as ultimate and insoluble facts given by nature. Yet to insist on a rationality approach, simply because it avoids balkanization is no better than searching for a key under a lantern because only there is the light, even if the key has been lost somewhere else.[26]

4.2 In Search of Universals

The abstract rationality approach is "not so much a theory of motivation but an attempt to sidestep the need for one" (ASCH [1987, 318 n]). This shortcut – as useful in many respects as it is – seems not particularly suited for institutional analysis, and the bounded rationality approach – useful as it may be for other questions – seems no better in this respect. At the end of the day we must care for "man as he is".

If we want to avoid balkanization, we must start from universal abstract features of human motivation and action. We must start from psychology, but I have no solution on which I can rely very firmly.

In order not to conclude on a negative note I can only hint at an approach which seems promising to me and which takes its point of departure from Solomon Asch's book on social psychology.[27] Here we find some universals which may be used to produce generalizable ideas in institutional thinking: Basic principles in pattern recognition, concept formation, simplicity, and grouping, seem fundamentally invariant across cultures, sometimes even across species. The same holds true regarding the interrelationship between cognitions and emotions. All this is encapsulated in the notions of "Prägnanz" and "requiredness" in Gestalt psychology. My program is to start from here. This will certainly not meet with general applause, but others may try other approaches. We should, however, not continue to search only under that lantern.

[26] The analogy has been brought to my attention by Dieter Schmidtchen.

[27] ASCH [1987]. The book is reviewed in SCHLICHT [1990 a]; see also SCHLICHT [1990 b]. Some of Hayek's writings are very closely related to the Gestalt approach, as he himself makes clear, see e.g. HAYEK [1962, 323]. The relevance of social psychology has been stressed recently by various authors, most notably AKERLOF and DICKENS [1982] and FREY [1990].

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