Committee I

Unity of Science: Organization
and Change in Complex Systems
Chairman: Marcelo Alonso

Draft

for Conference Distribution only

June 1985

THE EVOLUTION OF THE EXTENDED ORDER

HAYEK'S THEORY OF THE RISE OF CIVILIZATION

by
Gerard Radnitzky
Professor of Philosophy of Science
University of Trier
Trier
West Germany

Copyright: G. Radnitzky

The Fourteenth International Conference on the Unity of the Sciences
Houston, Texas November 28 - December 1, 1985

SUMMARY

What are the origins of human socialities? How did the abstract society come into existence, and what keeps an Open Society open? The main part of the essay is devoted to Friedrich von Hayek's theory of the rise of civilization, which is based upon 'the twin ideas of evolution and of the spontaneous formation of an order'. Before addressing Hayek's theory biological and cultural evolution are compared by investigating how animal socialities evolve, which constitute a protoform of human social order. After outlining Hayek's theory of the emergence and the functioning of the unplanned society and the market order, I will reflect on the political implications of the theory and on the problem of the comparative evaluation of types of institutional arrangements.

0. Cosmology tells us that since the Big Bang, the preferred moment in time or perhaps the mysterious moment when Time began, there has been a development towards organization at different levels in the universe. Session I investigated what keeps together this totality of interacting things. Session II and III examined how eventually this development made possible the emergence of life and consciousness: first came bacteria, then plants that could undertake photosynthesis, then the first animals, the first carnivors, and so forth. Intelligent being that can reflect upon the origins of the universe of life and mind can evolve only in those worlds in which the magnitudes of the natural constants stand in certain relationships to each other. This links the three Sessions to each other. Session IV is devoted to the problem of how human socialities evolve and change, and to the problem of what keeps them together. It addresses the question of how complex societies evolve in which there exists science-based reflection on all of these developments, an unending quest for understanding them better and better. An understanding of how such a complex society and economy function is one of the prerequisites of a rational politics, without which a free market of ideas cannot be preserved.

1. THE EPISTEMOLOGICAL POSITION UNDERLYING HAYEK'S THEORY OF THE RISE OF CIVILIZATION AND OF THE FUNCTIONING OF SOCIETY

1.0. All life is problem solving. Resources, scarcity, competition and selection, together with the laws of nature that govern them, apply to all organisms, not just to man. Hence, the principle of economizing is operative in all living nature. What distinguishes organisms from inert matter is that an organism has to do something in order to remain a "going concern". This involves a protoform of choice. However, choice in the full sense appears only at the

human level. Man is a chooser, and action is by definition intentional, goal--purpusive. At all levels practical problems include knowledge problems. A theory of action can be useful in the analysis of social organization only if it is based upon an epistemological framework, a theory about the generation, improvement and transmission of knowledge, which is adequate at least in some extent. At the same time, epistemology and, in particular, the methodology of research can profit from applying the "economic" approach, since solving knowledge problems involves action.[1]

There exists a unified theory of knowledge which is applicable to organisms and to man. At the human level, this theory makes use of both the "economic" approach in the widest sense, which is akin to Popper's rational--problem-solving approach, and of Hayek's theory of spontaneous orders, which is a refinement of invisible-hand explanation. At the biological level, this theory of knowledge offers "as-if rational"-explanations of animal behavior. In this perspective, organs are viewed as (routinized) problem solvers and traditions as devices for economizing information costs and decision costs.[2] Traditions that, in the competition of traditions, religions, institutions, etc., have passed the test of daily experience embody "tacit" knowledge; they constitute epistemic resources. Language and market order are the classical examples of orders that have passed such tests, that have evolved spontaneously. Natural language embodies the world view of "commonsense". The market order embodies knowledge about the best known way of making use of the widely dispersed, fragmented "local" knowledge (which is partly "tacit" knowledge) of millions of market participants, knowledge about how to collocate relevant knowledge with decision rights in such way that the overall result is an increase in the efficiency of the use of all sorts of scarce resources, goods and services

skills and special knowledge.[3] Following Hayek and the tradition of the architects of Western civilization such as Locke, Hume, and Adam Smith, it will be argued that the market order is one of the presuppositions of individual freedom, and not only a precondition of the efficiency of an economy.

Unlimited competition (i.e. criticism) in the world of ideas, in scientific research as well as in critical thinking in general, is the intellectual counterpart to the market order. The tradition of criticism or "criticist tradition" in Popper's and Bartley's sense, i.e. criticism separated from justification,[4] is an epistemic resource that embodies the knowledge of how to avoid the trilemma that is inevitable in the context of justification philosophy and of Cartesian methodological doubt, viz. the trilemma that one confronts whenever one attempts to provide an ultimate justification for a descriptive statement, a value judgement, or what have you: the trilemma of infinite regress, vicious circle, or dogmatism. The criticist tradition thereby clears the road to a workable methodology of research and a viable ethics in the Aristotelian sense of the "art of living" which is based on the experience of life. Dogmatizing, i.e. the protection of certain ideas from critical examination, is the intellectual counterpart of economic protectionism, which is an attempt to impair or even to eliminate the selection mechanisms.[5]

1.1. The thesis that ultimate justification is imposssible and that, therefore, criticism has to be separated from justification follows directly from a realistic image of man, i.e. an image of man that recognizes the principal fallibility of the human intellect. The epistemological thesis of the pervasive fallibility has profound implications not only for the methodology of research (philosophy of science) but also for political philosophy and politics.

Fallibility does not preclude that the idea of absolute truth func-

tions as a regulative principle. On the contrary, in spite of the fact that there can be no infallible method of ascertaining the truth value of a particular statement, absolute truth or approximation to truth (Popper's comparative truthlikeness or comparative closeness to truth) is indispensible as regulative principle in intellectual endeavors. Without this regulative principle, which is a formal principle, neither the concept of scientific research nor the concept of scientific progress make sense. In the realm of ethics and axiology substantive concepts of the "Good Life" or of justice are always contested concepts, i.e., a particular explication of one of them is justifiable only relative to a particular value system. However, a formal concept of justice is indispensible as a regulative principle in any rational discussion of ethical or political problems. Examples of aspects of the formal idea of justice are that nobody must be judge in his own case, that one law must not contradict another, that a law must not be applicable to particular persons, that it must be applicable to future cases only, that et altera pars audiatur, and a concern to deploy some acceptable general principle as a reasoned basis for decision. Methodological or epistemological reflections can get started only within a framework in which the meaning of such statements as, for example, the statement 'Statement p is a more accurate description of r than statement q, is closer to the truth' is sufficiently clear. Likewise, a rational discussion of problems in the philosophy of law or of political philosophy presupposes a framework in which the above-mentioned procedural characteristics of justice operate de facto as principles of procedure, be it that they function as unarticulated assumptions implicit in the practice or that they have been embodied in articulated laws.

The anthropological thesis that man is a chooser has to be qualified by another insight into the human condition: the insight that our life history is shaped more by coincidences, often by "fated" coincidences, i.e. by chance events that we could not have prevented from happening, than by our deliberate decisions. Because of this fact and since also the unintended consequences of our actions play an important role in shaping our life history, this history is in an important sense similar to a spontaneous order. Of course, a significant part of our biography is influenced by, or even determined by, our deliberate choices and we certainly are accountable for our decisions. Yet, the assertion that man is a chooser, a chooser at least in the more limited sense just outlined, has to be qualified also in a second respect. He is a chooser in the full sense of the word only to the extent in which he has become a personality, and his personality is an artifact of culture. Our concept of self and our personality is shaped by partaking in the various traditions that constitute the maturing individual's intellectual, social and spiritual environment, his ecology. Which traditions play the key role in this development process is again a matter of coincidence. The human personality "crystallizes" in the course of living, and a person "gravitates" to a particular position in morals or ethics rather than deciding to adopt it, he arrives at embracing particular values more by a spontaneous process than by acts of deliberate choices. The development of an autonomous personality is facilitated by living in an intellectual environment in which there exists a free competition of various traditions and norm systems. Such a pluralism will increase the individual's chance of achieving intellectual freedom and responsibility, provided that plurality is approached with a critical attitude, which conceives the critical examination of the various positions as an

open-ended process.[6] If in the individual's intellectual ecology an encounter of various traditions or norm systems takes place, he can play off one system against the other.

1.2. In an important sense internal criticism is relatively unproblematic. There is a good reason for internal criticism whenever one discovers a particular inconsistency in a norm system. It may be a "practical" inconsistency, i.e., when attempting to apply the rules of the system to a particular case, one discovers that the consequences are "unacceptable". A moral system and a legal system evolves through the endeavors to eliminate inconsistencies from it. Hence, as Hayek emphasizes, the model for morals is common law, case law, and not the other way round.[7] The judge may rely largely on "tacit" knowledge, he may be guided by the framework of unarticulated rules embodied in a practice, use it as an epistemic resource. This does not release one from the task of making explicit as much of the norms as is possible, because only articulated, linguistically formulated statements and value judgments can be subjected to a systematic critical examination. The problem of criticism becomes delicate when the issue is one of external criticism, when the critic has to answer to questions of whether or not his criticism is more than simply an objection from a different point of view. In this case a genuine value issue has to be faced.

The various assertions about the conditio humana, the hypotheses about various aspects of the image of man, which have been proposed in this section, are synthetic statements; hence they cannot, in principle, decide any issue about genuine, i.e. non-instrumental, value judgments or norms. At least the central value of the value system that is to be used in an evaluative problem has to be "posited" by the individual. This positing may be made by a deliberate

decision, an existential decision, or it may remain implicit and manifest itself only in the practice of life, in the individual's art of living. However, for a critical rational discussion of the value that has been accorded priority it is necessary that the value and the value judgments expressing it and the arguments supposed to support them be made explicit.

1.3. Hayek's social and political philosophy has posited the priority of liberty, of the autonomy of the individual. Once the priority of liberty has been posited, the rest of the value system can be derived with the help of empirical theories. It then becomes an empirical question what the preconditions of a society of free men are. Again, the relevant concept of liberty is a formal concept. The crucial test for any system of rules is whether or not it maximizes an anonymous individual's chance of achieving his UNKNOWN purposes, provided only that equal freedom is conferred upon all, i.e., provided only that the individual's aims are compatible with the prevention of infringement of the protected domain of one's fellow men. The last-mentioned condition expresses the regulative principle of equal treatment of everybody, including the government. It is a principle of universalizability in the sense of a test of the self-consistency of the actions: a rule when applied to different instances of the same type-situation must produce the same result. Hence, the concept of justice is derived from the concept of injustice; injustice is the primary concept, or expressed differently, justice is defined negatively as the prevention of injustice, whereby the injustice that is to be prevented is the infringement of the protected domain of one's fellow man.[9]

A comparative analysis of the institutional arrangements that are realizable and of the norm systems governing them can be made with respect to their capability of satisfying certain values. It is, of course, possible to

conduct such an analysis using different values as standards of evaluation. Hayek proposes the priority of freedom. For the practice of a society that wishes to be liberal in the classical sense of liberalism individual freedom functions as regulative principle. The private rights include property rights, private rights to person, time, material possessions, and so forth. The classical function of the state is to protect and secure the private rights of the individual from both foreign intruders (national defence) and from domestic intruders (internal security, but also protection against governmental steeling or counterfeiting through inflation, debasement of currency, etc.). Individual freedom is also the regulative principle for any attempt of improving institutional arrangements by means of piecemeal social engineering. It is the task of the political philosophy of liberalism to make explicit and to produce arguments in favor of the priority of freedom.[10] In our century no one has undertaken this task with more success than Hayek.[11]

2. BIOLOGICAL EVOLUTION HAS DEVELOPED TWO ROUTES TO SOCIALITY THAT GO BEYOND KIN SELECTION AND STRUCTURED DEMES

2.0. In a recent study D.T. Campbell, probably the most important representative of evolutionary epistemology, argued convincingly that biological evolution offers but two main routes to sociality.[12] They can serve as a foil for reflections on the human route to social order. Higher animals not only adapt to their niche, but try actively to improve their niche. "As-if rational" explanations of animal behavior sometimes provide insights not obtainable by other means.[13] In biological evolution the unit of selection is, at least most often, the individual, and the unit of retention is the gene. In cultural evolution social patterns, traditions or rule systems are indirectly selected

by means of group selection.

It happens that a species is trapped in an ecological niche in which for an isolated individual or for a single family survival is no longer possible. In this case the species either solves the problem of how to develop a sociality or it disappears. Biological evolution has made possible the non-human primates' route to the semi-sociality of the small horde and the social insects' route to ultrasociality. "Ultrasociality" is defined as a level at which the division of labor has become so thorough-going that neither the group nor the bulk of the population could survive a breakdown of the sociality. Social insects (termites, ants, bees, and some wasps) -- and urban mankind -- have achieved ultrasociality. Chimpanzees, baboons, jackdaws, etc., but also wolves and semi-social wasps, achieve at most semi-sociality. But it is the non-human primate horde that is the protoform of human sociality. The ultrasociality of the social insects can at most serve as a utopian model for a totalitarian socialist state.[14] From the study of non-human primate hordes man can recognize that the roots of politics are older than humanity and that our political activity seems to be an evolutionary heritage from our biological ancestors.[15]

2.1. The semi-sociality achieved by non-human primates: chimpanzee politics

Multimale social groupings of chimpanzees, baboons, etc., trapped into group life for mutual defence achieve semi-sociality. The main organizing principles appear to be "dominance" (dominance hierarchy and subordination hierarchy) and "sharing". The origins and the stability of traits, dispositions, behavior patterns or "rules", that embody these two principles can be explained by the selection over time of such traits that have more

survival value for the group exhibiting them than rival traits or habits do. They are stable because of their value in promoting survival and genetic propagation. Hence, behavior is fairly predictable. It is doubtful whether group selection (of kins or structered demes (random association within the breeding population)) can fully explain the emergence of semi-sociality. Dispositions to behave in such a way that the behavior benefits others more than the actor will be eliminated by natural selection. Although no conscious intention is involved and, hence, it is misleading to use moral terminology, such behavior is often called 'altruistic', presumably because one thinks that this way of speaking has heuristic value. The evolution of such "altruistic" dispositions is impeded by absolute or relative costs in fitness (the total number of offspring that reach reproductive age) to those who have the disposition. The free rider problem in economics is an analogue to this situation. Various explanations have been offered to explain that sometimes such "altruistic" behavior may nonetheless be observed. Explanations of "reciprocal altruism", commend fights, etc. or, in general, of behavior that exhibits "weak altruism", argue that the total benefit of payoffs in terms of chances of reproduction for the genes of the animal having a disposition for "weak altruism" are in the long run higher than the costs in disadvantages for reproduction, because inclusive fitness can be increased by the effective fertility of near relatives since they share many of the same genes with the animal in question.[16] The metaphors taken from moral discourse sometimes do have heuristic value, provided, of course, that one keeps in mind that they are but metaphors. First, interpreting, for instance, the behavior of social primates as that of individuals with vested interests in keeping fellow group members "altruistic" and loyal to the horde and in not being ostracized onseself makes

possible giving interesting explanations of the behavior. Second, the results of ethological studies of animal behavior have in turn heuristic value for better understanding human behavior.

The key to the semi-sociality of primate hordes is the "dominance" principle. The horde evolves clearcut, facultative polymorphism of dominance and submission.[17] That means the dominance hierarchy is not fixed; if it were, this would reduce the incentives to cooperate. Dominance hierarchy and submission hierarchy are what makes relatively peaceful group life possible. are more or less formalized, and when they become unclear a dominance struggle ensues, "after which the winner refuses reconciliation as long as his new status is not formally recognized."[18] In-fights may be terminated by a dominant animal making use of the protohuman "moralistic aggression" in order to stop a fight and to restore internal peace. This is of great importance because these fights would reduce the group's effectiveness as a whole in hunting, group struggles, etc. There is a division of labor associated with the dominance structure; the dominant animal functions as the "leader" and may, among other things, indicate when the horde should move to another place; the males positioned on the periphery have sentinell function, and so forth. The second important organizing principle is "sharing". Chimpanzees share information about food location and food, with enough peer equality, and, of course, they also share risks.

The ethological studies suggest -- at least in my opinion -- that there is also a protoform of the principle of "private rights" recognizable in the chimpanzee horde. Certain behavior patterns are readily interpreted as an "as-if"-recognition of private property. For instance, the dominant male will beg meat from a subordinate who happens to be in possession of it.[19] There

is even a protoform of personal exchange. F. de Waal reports that the human economic system, with its reciprocal transactions, is recognizable in the group life of chimpanzees. They exchange social favors rather than goods and gifts, "and their support flows to a central individual who uses the prestige derived from it to provide social security."[20] F. de Waal convincingly argues that what is fascinating with chimpanzees is not their technical abilities (putting boxes together or sticks as in Koehler's famous experiments) nor their "language" capabilities (w' ' are the pet subject matter of many contemporary studies), but their acumen ractical politicians. He is able to show that they are intelligent manipulators in using others as social instruments, that they can plan their dominance strategies beforehand, form coalitions as good human politicians do: interventions in conflicts serve either to help friends and relatives or to build up powerful positions. Of course, there are also dissimilarities. For instance, human politicians have, according to the rule of the game, to conceal that, most of the time, their motivation is essentially personal aspirations for power. Chimpanzees, on the other hand, are quite blatant about their "baser" motives[21] They display their interest in power unashamedly; for them it appears to be "natural". All parties strive after social significance and the temporal balance achieved determines the new hierarchical position of each individual in the group. The hierarchy is a cohesive factor, since it keeps competition and conflict within boundaries, and cooperative bahavior becomes 

possible because of the resultant stability and clear-cut expectations of the reactions of the others. (Hence, with chimpanzees as well as with the tradition-governed human societies, the rule-following model is quite successful in predicting and explaining behavior.) At the same time the horde practices enough equality, without becoming egalitarian. In sum, chimpanzee politics appears to be not only a precursor of, but even very similar to the norm system or moral system that brings cohesion to and makes possible life in the human hunter-gatherer horde and the tribal society. Humans have developed a profounded need for significant participation in face-to-face groups. This is understandable considering that man has lived for at least one and a half million years, perhaps much longer, mainly as a hunter.[22] However, this craving for the life in a small, intimate group, this craving for face-to-face interaction, appears to be grounded in a much longer prehistory: it may very well be a craving for a return to "primate politics".[23]

The monkey horders, the chimpanzee hordes, etc., have remained in this state. The continued presence of genetic competition between co-operating males appears to be the factor that precludes that the chimpanzee horde proceeds on the route to ultrasociality. Ultrasociality appears to be achievable through biological evolution only by eliminating the impeding factor, the genetic competition among co-operative males. This is the route the social insects have taken. The only other possibility is to achive it rhough human cultural evolution.

2.2. The social insect route to ultrasociality

The social insects succeeded in removing genetic competition among co-operators through the mechanism of caste sterility. They carried the division of labor

beyond the functional level to the extreme of not only behavioral but even anatomical specialisation. It has been a slow development. (Some of the species are very old, e.g., bumblebees are said to be about 80 million years old.) Phylogenetically, in the beginning reproductive maturity was only postponed; gradually it disappeared so that anatomical specialization could emerge, which provided the basis for an extreme in division of labor: individuals become nothing but functional components. The behavior of the ant worker, e.g., can be interpreted in analogy to what has been said about "altruistic" behavior in primate hordes. If, in an "as-if-rational" explanation, we postulate that the overall "aim" of the species is gene propagation and the maximum level of population given the carrying capacity of the niche, then a cost-benefit analysis can show that for the ant worker the utility in terms of individual fitness achieved through caste sterility outweighs the cost of own sterility. Hence, this adaptive development can be seen as an instance of "as-if-rational" problem solving. Now the selection occurs at the level of queens and nests, and, hence, in group competition the effectiveness of the co-operating group will be the trait that is selected. This guarantee complete peace within the nest and total aggression towards any potential rivals of the nest as a whole. Once caste sterility has been established, genetic competition among co-operators no longer impedes the development of the extreme of self-sacrificial "altruism" that is beneficial to the group as a whole.[24] The social insects's ultrasociality appears to be the strictest of all social orders that biological evolution can bring into existence. The price of perfect stability is stagnation. Hence, the situation is that of post histoire.

If castes are sterile, not only is competition among individuals removed and perfect equality between caste members realized, but individuality

as such has been eliminated. The individuals are interchangeable: they are pure species beings.[25] The sociality functions in such a way as if it had been constructed, deliberately designed with the aim of satisfying the needs of each "individual", or better of each of the components of the collective -- and in this case the needs are, indeed, objective, because they are determined by anatomical specialization --, and that each component contributes to the social "totality" according to his capacity. In one word, the social insects constitute the paragon of a Marxist collective. No wonder that the social insects and their egalitarianism has been a source of inspiration for political thinkers bent for socialism and for constructivists of all varieties.

3. CULTURAL EVOLUTION: THE HUMAN ROUTE TO ULTRASOCIALITY

3.0. The basic problem of human social systems is similar to that of the non-human primate horde: how to maintain a peaceful social order in changing situations. A sociality can come into being and be maintained only if there exist expectancies concerning the behavior of others that are workable, i.e., if a large sector of the behavior of the group members is rule-governed. A significant part of the rule system will exist in the form of a framework of unarticulated rules, of a working whole which cannot be entirely controlled by the sociality, but constitutes a tradition in the sense of a whole complex of practices embodying the rules of action and perception that govern these practices. There will always be some conflicts. The issue is to prevent them, as far as possible and to resolve them or keep them in check. This too can only be achieved if much of the behavior is rule-following behavior, and this in turn is possible only if there is an incentive structure conducive to rule-following.[26] The function of rules of conduct is to change the individual's

expectancies in such way that incentives are provided for rule-conforming behavior and disincentives for rule-breaking behavior. 'Incentives' and 'disincentives' are to be taken in the widest sense. Dissuasion from norm--breaking is achieved by fear of punishment, in general, by the expected costs of violating norms. If the norms have become internalized, these costs include also psychological costs such as remorse, bangs of conscience, etc.

3.1. SPONTANEOUS ORDER AS THE PRIME MOTOR OF CULTURAL EVOLUTION

The hunter-gatherer group and the tribal horde have much in common with non--human primate hordes. The decisive breakthrough on the road from the chimpanzee horde to the hunter-gatherer horde is the emergence of language. Language is the choice example of a spontaneous order, i.e. of an order that evolved in a gradual and decentralized process, that constitutes an unintended effect of the deliberate actions of many interacting individuals and that, therefore, is the product of human action but not of human design.[27] No individual or collective could have deliberately designed natural language. With language emerge also abstract entities, the contents of linguistically formulated statements (true statements and false statements), of theories, problems, rules, criteria, and so forth, the entities with which our intellectual life deals. They are man-made, but they have a certain autonomy, and our intellect develops in a give-and-take relationship with them.[28] Language makes possible the handing down of knowledge, of rules, of criteria, etc., of epistemic resources, from one generation to another and, hence, systematic learning and eventually systematic inquiry, i.e. science. (The discovery of writing is a comparatively small step forward; it facilitates greatly the storing and the transfer of information.) If an expectation is linguistically formulated, it can, if a falsified, be eliminated while the believer, the carrier of that expectation,

can survive. Hence, when one is confronted with knowledge problems, it is rational to let creative imagination generate bold conjectures (as Karl Popper admonishes the researcher) -- following the paragon of the entrepreneur --, and then subject these proposed problem solutions to severe testing. In this way deliberate selection attempts can complement and, eventually, in some areas such as scientific research, supersede natural selection. It is an example of a limited deliberate selection procedure that can be operated only within the framework of certain spontaneous orders, such as language and the criticist tradition. Only from the stage where language in the full sense, i.e. with descriptive and argumentative function, has evolved or emerged, it is appropriate to speak of 'cultural evolution'. The transmission of knowledge that became possible through language made in turn ⟷ possible the enormous tempo of cultural evolution as compared with biological evolution and also a differentiation within the species that has no counterpart in biological evolution. The main mechanism of cultural evolution is the selection of competing rules of perception and action. It selects those rules, rule systems, institutions, etc., that, on balance, bring the group which partakes in them more benefits than costs. It does so by directly operating on groups; cultural selection procedes through group selection. A rule system or a social pattern that has evolved spontaneously, i.e., that has come into existence as an unintended effect of the actions of individuals who were pursuing their own purposes (whatever those may be) but did not intend to produce this effect, has thereby passed the test of daily experience. It has survived the selection process of competing rules or social patterns. The problem solutions we see in the world around us tend to be well-adapted at least in a certain extent, because otherwise they would not have survived.

However, with respect to the qualities of a spontaneous order as a category a word of caution may be in place.[29] 1. The fact that a particular norm or social pattern has evolved spontaneously is no guarantee that it is optimal, that it could not be improved, even if we assume that the environment remains constant. (Much the same holds for a theory which has been successful so far, i.e. which has hitherto produced only correct predictions.) 2. Although a spontaneous order represents a successful evolutionary solution in the past, from this follows no guaranty that it will continue to succeed in the future. 3. From the statements describing the structure of a spontaneous order or explaining its origins no value judgment about that order can be deduced. Deducing a genuine (i.e. non-instrumental) value judgment from premisses that have purely descriptive function in the argument at hand is logically impossible, since ampliative inferences are not valid. Although this is trivial, it cannot be said too often, because people, including many philosophers, forget this trivial truth all too often. No amount of empirical knowledge can decide a moral issue. When dealing with the question of whether or not a particular order helps us to ralize particular values better than rival orders would, we must first make explicit the value system that is to be used as criterion. If we posit classical liberalism as our value standpoint, we have also with respect to any particular spontaneous order to ask whether, indeed, it helps us to realize this value standpoint. However, the probability that a particular institution will do so is much higher for a spontaneous order than for an order that has been deliberately designed with that intention in mind or been established by command. Hayek has shown that this is so for epistemological reasons. 4. Natural selection selects for survivability pure and simple, and a trait may survive that is bad for the ecology or for the

species or for its individual bearer.[30] Nature is not always wise, nor is culture. Similarly, in cultural evolution, a trait or social pattern has been selected because, on balance, it brings the group partaking in it more benefits than costs. That it has remained in existence is no guaranty that it does not also contain dysfunctional characteristics. These considerations lead to the question of whether, and,if so, under what circumstances, it is possible to improve a spontaneous order by social engineering in such way that with its help we can realize more of our aims than we could before. However, whoever proposes a change has to produce good reasons for the conjecture that the institution in question will function better after the change. In dubio pro traditionem holds for spontaneous orders even more than for any other type of social pattern. It is a rational maxim if only because there are always risks and costs associated with a change, costs that have to be compensated by the expected marginal benefits of the change. Moreover, Hayek points out, correctly, "... that all our efforts to improve things must operate within a working whole which we cannot entirely control."[31] That means that social engineering can be applied successfully only to very limited and well-defined problems; otherwise the unintended consequences are likely to offset all efforts.

3.2. THE NORM SYSTEM THAT IS FITTED TO THE HUNTER-GATHERER GROUP AND THE TRIBAL HORDE, TO GROUPS WITH SMALL AND RELATIVELY STABLE POPULATIONS

Let us briefly examine the norm system that is adapted to life in the small hunter-gatherer group or tribal horde. I follow Hirshleifer in proposing that any norm-system can be interpreted as a mixture of three organizing principles: the principles of dominance, communal sharing, and private rights, The blend of these three organizing principles that is propitious for the well-functioning of the ←——————————————→

sociality will depend upon the type of ecological niche in question. The norm system underlying social life in the face-to-face group has much in common with chimpanzee politics; early man and chimpanzees shared the same ecological niche.

The most important organizing principle will be the principle of dominance. Dominance is the central organizing principle in the chimpanzee horde, and it is the first and deepest layer of human sociality. Primates lacking biological weaponry could initially survive only by banding in groups. Dominance had to be the governing rule holding the band together; it made possible the dominance hierarchy and the subordination hierarchy that in turn made possible the social stability of the group. Since these topics have been dealt with in the chapter on semi-sociality, I mention here only that the supportive emotions for the dominance principle are the instinctive drive for leadership and the complementary quality of willing followership.

The second important principle is "sharing". For the continued efficiency of a face-to-face group a certain amount of sharing is indispensable, and under conditions of resource variability, sharing may also serve a mutual insurance function. In face-to-face groups there is typically an investing in others, a reciprocation of "gifts", etc. The mobile hunter-gatherers represented an egalitarian stage in human social and economic life, and even the low-density farmers as tribalists are still egalitarian. The supportive emotions for the organizing principle of "sharing" are, of course, envy and fear of envy.[32] As Hirshleifer points out the emotion of anger provides the needed commitment to retaliate and, hence, fulfils a useful function in the small group. The psychological "loss of control" which leads one to punish agression even when to do so is not to one's short-run material advantage, may just be what is needed to deter future invasions into the realm of one's "private

rights".[33] On the other hand, behavior ostensibly "altruistic" or following the "sharing principle", such as, e.g., willingness to share gains even if one is not required to do so, may be materially rewarding later on when co-operation on the part of others is elicited thereby. In short, emotional responses such as anger and generosity can function as "enforcers" of implicit contracts between two parties and thus be useful in a social situation where the parties are in personal contact and expect to interact also on future occasions.

Probably the role of war in selection of rule systems cannot be over-estimated. Warfare as an economic activity is characterized by an economy of scale leading to large group size.[34] In warfare the environment also selects for loyalty and dedication, properties within the group that appear to be the result of a combination of the dominance principle and the sharing principle. For the success of the group, in particular in the situation of warfare, a common perception of reality and common concrete purpose will be favorable. This is probably the most striking characteristic of the norm system adapted to the hunter-gatherer group or tribal horde: that no alternatives are visible to the group members and that, hence, criticism of the common goal is not possible. If it were possible, it could not be tolerated. Because the common perception of reality is of central importance for group cohesion, it is in the interest of the preservation of the horde or the tribe to dogmatize it, to protect it from any criticism.[35] This is particularly urgent since the descriptive part of the central myth is bound to be largely false. The belief system is uniform; almost everyone will automatically learn what he needs to know, if not quite all that anyone knows. The injunction to trust and obey covers everything (Frank Knight). A significant sector of what people need to know will

be tacit knowledge. Likewise our hominide ancestors's main defence against big predators were not weapons but tacit knowledge about the behavior of animals. Each member of a tribal community is subordinated to the common ranking order of needs. Hence, the so-called "communist fiction", which plays a prominent role in thought of many contemporary economists, i.e. the idea of a uniform preference structure in a society, is appropriate for the tribal horde - but only for it. From the viewpoint of methodological individualism (i.e. the view that social patterns can, in the last resort, be explained by reference to the action of individuals) it is clear that in an anonymous society there cannot be any such thing as a collective evaluation of the result of the economic activities of a nation (by whatever statistical measure it may be expressed), if only because of the presence of conflicting interests among individuals and among interests groups. However, for life in the tribal horde the "communist fiction" is well-chosen. There is no room for independent action, no place for privacy.[36] Primitive man is collectivist and cannot help being collectivist. Consensus is complete. The practical recognition of the moral system - we could call it 'system of solidarity' - by all members of the horde is indispensable for the success of the group in the process of group selection through group struggle. Hence this norm system will be selected by the cultural whittling process. Since the individual is dependent upon his fellow group members and, with few exceptions, can survive only as a member of the group, there is scarcely any "free-rider" problem. The expected costs of violating the norms - the expulsion from the group - are too high. The mechanisms for maintaining social order are personal; trust, kin, and custom. The reciprocity in right and duties have their origins in and are modelled on the Family. With the help of personal mechanisms aggressiveness within the group can be handled - one of the functions of the moral sys-

tem is to suppress instinctive aggressiveness and to channel it towards rival groups. Also this trait is similar to chimpanzee politics.

What is, in the tribal horde, the role of the third organizing principle, the principle of "private rights"? Already in the champanzee horde there is an as-if recognition of private property, exemplified, for instance, by the dominant animal begging food from a subordinate who happens to be in possession of it. All known primitive communities have been found to possess relatively elaborate structures of property rights. In animal hordes there is an exchange of interpersonal cooperative services, and hence an investment in others. Exchange of material goods may be a uniquely human phenomenon. The development of tools and weapons opened up a particular dimension of a division of labor, between hunter and specialized craftsmen. With the development of language the widened field of interaction opened up many possibilities of specialization and exchange, both on the group level and on the individual level. As early as in the Neolithicum there was trade in Europe as is evidenced, e.g., by axes found in France which were made of sandstone from the British islands. The possibility of personal exchange required a mutual recognition of property rights. Thus, it seems likely that with increasing specialization an increasing respect for private property evolved, which was based on trust and personal ties. If we draw a profile of the norm system that is characteristic of the tribal horde, the principles of dominance and sharing will hold the key positions while the principle of "private rights" will play a minor role. Its importance will increase when the size of the population increases.

What about the supportive emotions of the norm system of the tribal horde? Only if the emotions and the "moral intuitions" of the members of a group support the norm system, has the system been internalized and will be

effective as the group's ethos. The norms of the "solidarity system" that fitted to life in the face-to-face group are deeply ingrained in our emotional make-up. Hayek refers to them as "our innate moral instrincts". The moral system of the horde has governed the hunter-gatherer life of the species for millions of years. Moreover, in particular, the organizing principles of domination and sharing have been operative in the non-human primate hordes, and in this way the norm system also belongs to man's primate heritage. Nonetheless, the question in what extent the moral system of the horde is genetically implanted rather than culturally imparted is still an open question. For the moral system to be effective it appears sufficient that -- as it is the case also in modern Western society -- the moral system of the horde is internalized in the formative years of childhood when the child is completely dependent on the person who takes care of it and hence has to accept authority unconditionally.[37] The moral system of the horde, the "solidarity system", evolved in the era when man lived in small groups, in face-to-face groups. It was indispensible for the survival of mankind. It is fitted to life in groups that are so small that trust and personal ties can function as mechanisms that keep the group together. That means it is fitted also to the various face-to-face groups that are interspersed in the anonymous society, to groupings where one can "touch" one's fellow both literally and metaphorically; in the anonymous society it is appropriate for the private sphere but inappropriate for the public-political sphere of action.

The tribal horde is collectivist and conformist; its population size is stable and its norm system conservative. Dissidents and innovators are bound to be banished from the tribal horde. Therefore, it appears likely that a change is possible only if one of the "banished" innovator manages to take

with him a few members of the original group, and if his innovation proves to be beneficial to the new group, so that the group not only survives but also expands, because the innovation is imitated by others, because of imitation of the "successful". Thereby it is not necessary that those who imitate the successful understand why these are successful. Cultural selection will whittle away those innovations that, on balance, do not produce more benefits than costs, and in this way it selects those new social patterns that make the group who adopted them better adapted to its ecological niche and which help the group to tackle its changing problem situation, in particular, to cope with an increase in population size. Since the tribal horde is tradition-governed and conservative, it is certainly not a seedbed for innovations. Hence, it is to be expected that innovations in institutional arrangements will occur only when the problem situation changes. In general, an institutional innovation is likely to occur only if there is some disequilibrium in the system that adds weight to the profit side in the judgement of the decision-making individuals or groups, i.e., if the perceived benefits have risen or the perceived costs fallen.

The ecological shift to pastoralism exemplifies such a situation.[38] It modified the relative importance of the three organizing principles: dominance, sharing, and private rights. Property rights became successively more important, because pastoralism requires private ownership of flocks and agriculture private ownership of crops and, in particular, the efficiency of the peasant working his own soil is unmatched by any form of group farming.[39] By the strengthening of property rights the incentives are provided for the creative individual, for the entrepreneur, to invest time and energy in the generation of new ideas, new skills, new techniques and, in the last two

centuries, also in the generation of scientific knowledge that can lead to new technologies. The strengthening of property rights will also contribute to making clearer the distinction between the concepts of the public and of the private sphere and, hence, contribute to the development of individuality. However, the moral system fitted to life in the tribal horde can be replaced by another norm system -- i.e. replaced in the public-political sphere -- only if the population size has increased so much that the group has turned into an anonymous society; only then it is to the group's advantage adopting, in the public sphere, a norm system composed of abstract rules.

3.3. FROM THE TRIBAL HORDE TO THE ANONYMOUS SOCIETY GOVERNED BY ABSTRACT RULES

3.3.1. Viewed from the evolutionary perspective the rule system that characterizes a particular type of sociality is an adaptive response to a particular problem situation. The "solidarity system", the norm system fitted to the primordial face-to-face group and to communities of no more than perhaps 100 to 3000 within loosely organized tribes, is an evolutionary response to a problem situation characterized by a population that is small and fairly stable. The replacement in the public sphere, of this norm system by a system of abstract rules is an adaptive response to a drastic change in the problem situation. In the abstract norm system fitted to the anonymous society the weight of the organizing principles differs from that which is characteristic of the norm system of the primordial horde. Now the principle of private rights plays a much larger role. Western civilization could arise only because in the course of its history a norm system became effective that, in the public sphere, gave priority to private rights. The question which of two competing social systems offers an anonymous indi-

vidual a better chance of achieving his unknown purposes (as outlined in section 1.3.), can be answered by examining the relative weight accorded to the principles of dominance, of sharing, and of private rights. Western civilization could not have developed if it had not, in the public sphere, replaced the moral system of the horde by an abstract rule system that gave priority to private rights. This change was the unintended effect of a gradual and decentralized process; it was not designed, and the process was not even understood. Socialists are still incapable of understanding it. As Hayek correctly points out: mankind has been civilized much against its will, and only in retrospect can we recognize what we must do in order to preserve what we have got. The modern totalitarian state is an immodest attempt, by design and planning, to return to a stage in the development of mankind in which the dominance principle was the main organizing principle; the socialist states among the totalitarians complement a command economy by a rhetoric that pretends that it is the principle of sharing which is given priority. The twentieth century has been characterized by the weakening of private rights and by cancerous growth of government, bureaucracy, and state interventions. Government has become the major source of attenuation in private rights. The intellectual climate has been dominated by the "philosophy" of the Big State with emphasis on the "sharing out" function of government. In nuce, this development may be seen as an attempt to return to the rule system that characterized primitive man. The norm system of the horde fitted the way of life in the tribal horde. If this norm-system were to replace, in the public sphere of the anonymous society, the abstract norm system that gives priority to private rights, then not only individual freedom would be abolished, but the carrying capacity of our ecological niche would be drastically reduced. With the abolition of market order and capitalism

the material basis of the livelihood of a large part of the world's present population would be eliminated too. That this return to the rule system of primordial man is nonetheless recommended by socialists with a good conscience shows how little these people understand of the cultural development of mankind, of the functioning of an economy, and of the role of the abstract norm system.

3.3.2. FROM PERSONAL EXCHANGE TO IMPERSONAL MARKETS

The best way of arguing for the above-mentioned theses is perhaps to look at the evolution of the market order, to review how personal exchange was replaced by impersonal markets through a gradual and decentralized process, since the market order is the choice example of a spontaneous order in Hayek's sense. This evolutionary development illustrates at the same time Hayek's thesis of the primacy of spontaneous order over deliberate design, that no single mind or collective could have been intelligent enough to design and plan this development. It also shows that the primacy of spontaneous order over deliberate design is based on epistemic reasons, on the lawful relationships that govern the possible collocation of relevant knowledge and decision rights. Let us have a look at the evolution of the market order.

As far as we know, in every human sociality private property is recognized at least in some extent,[40] and there is some exchange. What sort of institutional arrangements with respect to exchange evolve will depend in large extent on the size of the population. In any economy ⟷ exchange refers not to physical articles or services per se, but to bundles of rights attached to those articles or services. Hence, every sociality is faced with the problem of the enforcement of individuals' rights to property. The relevant decision rights comprise essentially the right to sell whatever

rights the person has in the resource and the right to capture the proceeds of the sale; i.e., it is a system of alienable rights.[41]

In order to make voluntary exchange possible the rule system has to be adapted to the problem situation. It is instructive to consider two ideal types of situations: the situation of the small horde and that of the large anonymous society. In the way of life in small tribal hordes the problem of maintaining a sociality was solved by the evolution of a norm system based on personal ties. In the face-to-face group, by definition, everybody knows everybody else, more or less. In the tribal society even death is a public affair. Property rights are identified through personal acquaintance with its owner. Exchange in small economies is based on trust and personal ties. Being honest is not only moral but also rational, because one expects repeated dealings with the same people in the future. In such a community all the relations of persons, the reciprocity in rights and duties, have their origin in and are modelled on the Family. Protection of property, fulfillment of contracts are based on trust and personal ties, and disputes are settled by personal mechanism, by trust, kin, and custom.

What happens when, due to an increase in the carrying capacity of the ecological niche, population grows? A large increase in number will lower the average income, produce changes in wealth distribution, and so forth. When the number of potential participants increases, the expectations of frequent exchanges between any two individuals must decrease. This will make new institutional arrangements necessary. Personal exchange based on personal contact and on personal dealings with the same person and, hence, on trust, minimizes the need for formal rules, because of the continuous reciprocity of dealings. Trust is an investment in other human being, and in the face-to-

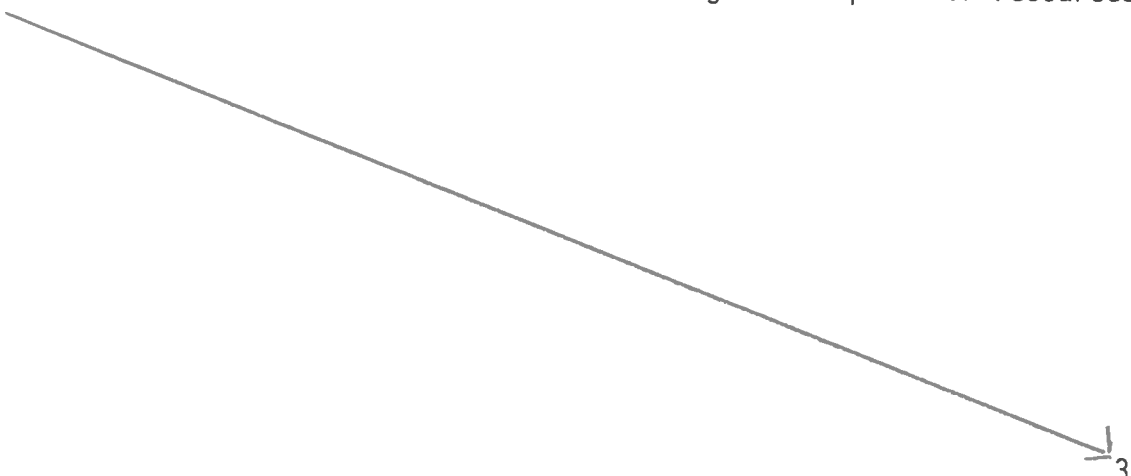
-face group each individual has a certain debt towards the group that has invested in him. Expectations of less frequent exchanges between any two individuals leads to a lowering of rule-following behavior and successively undermine the norm system fitted to the face-to-face group. Increase in size of population must sooner or later lead to an anonymous society. The most important adaptive response to population increase is the gradual transition from personal exchange to exchange that becomes more anonymous. In impersonal markets formal rules replace trust, and competition plays the main role in constraining the behavior of the parties. The concept of a private sphere and with it the distinction between public and private and the concept of private rights in the full sense can emerge only with the emergence of anonymous exchange, where, moreover, it is to be expected that at least in some exchanges the individual's behavior has no significant effect on others. Hence, population increase up to a certain level has paved the way towards a society of free men. However, from a certain population density onwards a further increase must lower not only the chance of an anonymous individual to freedom, but reduce that freedom significantly. (This thesis is elaborated in the Appendix.) In an anonymous society, in which, by definition, people can no longer rely on personal ties, problems of the enforcement of the individuals' rights have to be solved by other means than those effective and efficient in the tribal horde. The changed problem situation can be successfully coped with only with the help of creative innovations and, hence, the group will "gamble on new ideas".[42] This epistemic element is one of the factors that make human history unpredictable, dependent on coincidences. Cultural selection will then whittle away those proposals of problem solutions that do not meet the test of experience. Hence, an answer to the question about the origins of Western

civilization will be a story, a description of a singular, complex process. Most of the important social patterns we see around us have to be explained by an invisible-hand explanations, since they are spontaneous orders, and only very few can be explained by deliberate-design explanations. To sum up, in the rise of Western civilization, the moral system of the horde, which is carried by customs and personal ties, was replaced, in the public sphere, by formal contracts and by institutions that regulate contract making in accordance with abstract rules, in combination with institutions with the help of which contracts can be enforced. In this way the Prisoner's Dilemma has been eliminated from large sectors of the public domain.

However, the Prisoner's Dilemma is eliminated only in a sociality governed by the Rule of Law. In a system characterized by totalitarian state power uncontrolled by the Rule of Law, both privileges and necessities of life are instantly revocable by the political process. Hence, everybody is constrained as a matter of survival to collaborate with the authorities and also to sustain practices that harm him as well as everyone else, such as, e.g., preemptive informing on neighbors. Hence, in a totalitarian state social life is "a vast, generalized Prisoner's Dilemma whose outcome is a stable political state of nature".[43]

Most of the institutions in an exchange economy are concerned with property rights. The classical function of the state is to protect and secure the possession of individuals, i.e. private rights to person, time, material possession, etc., against intrudors from outside (national defence) and intrudors from inside (internal security, equality before the law, etc.). The modern state grows out of a monopolization of violence,[44] placed in the service of these functions. Nozick's invisible-hand explanation of the rise of the

"ultraminimal state" is suggestive.[45] Nozick sketches the evolution of more and more efficient problem solutions to the problem of the enforcement of individuals' rights: from inefficient mutual-protection associations to more professional private protective agencies and eventually to the single protective agency that emerges as dominating a geographical area: the "ultraminimal state". In the anonymous or abstract society an individual possesses property rights or, in general, decision rights with respect to specific objects or actions to the extent that he can use the police powers of a state to help him ensure the ability to take the action. In this situation it will be cost--benefit analysis that governs rational decision making. On the level of the individual, cost-benefit considerations are required in order to ascertain whether it is less costly to engage in trade than to fight for a physical object that is in possession of another party. This is the way how rights come to be recognized. The behavior of states will be guided by considerations of whether or not it is less costly to engage in production and trade in order to come into possession of a certain resource than to engage in violence against another state in order to get decision powers over that resource. The growth in the size of states is a consequence of developments in military technology. Conflict is way in which economic agents compete for resources.[46]



3.3.3. THE "CATALLAXY" AS THE PRESUPPOSITION OF THE EXTENDED ORDER

A sociality can exist only if there are viable expectancies about the behavior of others, which presupposes that a large part of this behavior is rule-following behavior. In his Treatise written in 1740, Hume argued that a society that offers individual freedom can exist only if the principle of property rights plays a key role in the rule system that governs the society.[47] Hayek showed that the market order, based on property rights, is the presupposition of the extended order, an order that makes possible to extend peaceful cooperation beyond the boundaries of the small group or the tribal horde. Hayek proposed for the market order the term 'catallaxy', derived from the Greek verb 'katallattein' which "meant, significantly, not only 'to exchange' but also 'to admit into the community' and 'to change from enemy into friend'".[48] Hayek's classic account can be summarized as follows. Barter or exchange is a first step toward a peaceful cooperation in the absence of a concrete common purpose of the parties engaging in the cooperation. When the personal exchange has been replaced by impersonal markets, a special order has been brought about by many individuals, who need not know each other and, normally, do not know each other, and who, nonetheless, are adjusting to each other through the barter or market process, within the rules of the law of property, tort and contract. It not only reconciles different purposes, but also makes it possible for members of the large, anonymous society to benefit from each other's effort inspite of the differences in their several aims and often even because of these differences.[49] People can now cooperate peacefully without having any common purpose, apart from the purely instrumental aim to secure the formation of an abstract order that will enhance for all the prospects of achieving their own purposes. In a large, anonymous, society the

mechanisms of social control must be impersonal and the rules governing the public sphere must be abstract rules. The legal framework required for the market order made it possible to restrict coercion to observance of negative rules of just conduct and thus enabled individuals in groups who pursued different ends to be integrated into an extended order. The market order, which is the paradigm of spontaneous order, brought with it the gradual discovery that in order to live together in peace it is not necessary to agree on a common purpose, to achieve consensus or to manufacture consensus, e.g., by emptying resolutions of content, by persuasion, etc. It brought with it the insight that men can benefit each other in the absense of such consensus, the insight that it is possible to EXTEND the order of peace BEYOND the small groups that are held together by a common purpose. The market order or capitalism, which accords to the individual an autonomy in the economic sphere, presupposes the recognition of private rights. The supportive emotions for private rights are such that the desire for private property is most intense insofar as it concerns control of one's own person and one's own time. Possessions, or better, property rights with respect to material things are valued also because they are guarantors of our autonomy from others.

It is Hayek's precious discovery that the market order is basically a discovery system, which tells man to serve the needs of people whom he does not know in order to serve his own interest. It is, in principle, impossible for centralized planning to simulate the efficiency of the market order because of epistemic reasons. The relevant knowledge for market operations is "local" knowledge: knowledge about fleeting circumstances, about occasions, etc., i.e., knowledge that is dispersed over millions of market participants, further knowledge about one's own resources and capabilities in terms of know-how and

aims, and, moreover, knowledge that is "tacit" knowledge in the sense that the individual himself could not articulate it even if he wished to do so, for instance, a sensitivity for what the ancient Greeks called 'kairós', for the propitious, not recurring moment for action. In other words, the relevant sort of knowledge is in this case "local" in the sense that it is in principle impossible to articulate all of it, in principle impossible for a central planning board to recover and handle the dispersed knowledge that is utilized by markets. This reflection unmasks the constructivist hubris of central planning. Since it is impossible to transfer the local knowledge from those people who happen to be in possession of it to a central planning board, the only rational way of collocating the relevant knowledge and decision rights is transferring decision rights to the individuals who possess the relevant local knowledge.[50] Thus, the market order functions as a discovery system and at the same time it controls human behavior by collocating decision rights with the rights to the proceeds of the exchange in such a way that the consequences of decisions are imposed on the decision-makers themselves. It makes them accountable for their actions. The market prices not only tell the individual what to do in the future in order to be better off than before the deal; they also function as a measure of the performance of the parties and determine reward and punishment on the basis of performance. The prices indicate what is scarce in the sense of being "wanted" by many willing to pay for it and they basically represent the present value of rights to future flows of revenue or to future consumption service. The market order presupposes an institutional framework, since assignment of decision-making rights is a matter of law, and only if the state power can enforce contracts, the Prisoner's Dilemma can be eliminated. The state has to do the policing of the market against force and fraud, prevent interference by any with the freedom of others, and maintain that free

association which is called 'competition'. However, today state interventions often impair the functioning of the market process through protectionism and arbitrary price fixing, and in many areas the market process has been replaced by a political process, by "rent-seeking" and similar activities.

The market system delivers the goods people want, but those who make it work cannot readily explain why it does so; the socialist system does not deliver the goods, but those who operate it can readily explain away its failure (Peter Bauer). Confronted with the phenomenon of the market, the social sciences have to answer two emirical questions: they have to explain its prevalence across societies and to explain its origins. These empirical endeavors, of course, have nothing to do with ethical or aesthetical evaluations of the market order. To answer the question of the prevalence of an institution its raisons d'être have to be stated. To answer the question of the origins a story has to be told, a story that constitutes an invisible-hand explanation.[51] The story describes a complex, decentralized and gradual process with three main components: input, process, and output. The input into the process are the dispersed actions of the participating individuals who are supposed to act from regard to their own interest and who do not intend bringing about the output, the well-structured social pattern, tradition or institution. The process specifies in detail the working of the mechanism that aggregates the input into the output. Thus it is assumed that self-interested behavior is invariant under changes of institution and that such variations only affect the specific expressions of self-interested behavior. This underlying model of man assumes further that all evaluations are located in the individuals' conscientiousness and that every individual

has a preference for making one's own decision according to one's own assessment.[52] Self-interested behavior thus includes altruistic and egotistical behavior. Acting from regard to one's own interest can, for instance, very well include investing in others. The work of A.A. Alchian, Gary Becker, and Jack Hirshleifer have shown the basic irrelevance of the traditional distinction between altruistic and egotistical behavior. Economic analysis and social science studies have shown that the public interest view of government, the hypothesis that persons in the role of bureaucrats can be expected to act in the "public interest", is as false as the "benevolent dictator hypothesis of government" and the "political man" assumption (Karl Brunner). The classic author is, of course, Adam Smith when he writes that a (private) capitalist seeking always the safest and highest return on his capital "neither intends to promote the public interest, nor knows how much he is promoting it ... he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. ... Nor is it always the worst for society that it was no part of it ... I have never known much good done by those who affected to trade for the public good."[53] Public choice economics has convincingly argued that the rational politician will conduct policies that yield payoffs prior to the next election while generating costs that are observable only after the election, and that he will support positions favored by identifiable special interest groups while generating costs that are spread widely and not readily observable.[54]

To answer the question of why the market order is prevalent its raisons d'être have to be stated. This has been done in the above. Hayek emphasizes that it is not necessary that the people who benefit from partaking in a particular order fully understand why they are successful. However, a

behavior or a social pattern will not become institutionalized unless the actors have some theory about a causal connection between the behavior and the effects that they evaluate as beneficial. This theory may be a rationalization; for instance, the intervention of a supernatural power may be invoked in order to explain the effects indirectly, i.e. as the outcome of the effect of the behavior upon the activity of supernatural power, which then in turn produces the desired effects.[55] In the competition of religions those have prevailed which have sponsored the institutions of private property (for the laymen of course) and of the Family (in various forms, provided only it ensures responsibility), i.e. those religions which have endorsed the ethic of individual responsibility and prudent housekeeping: the classical moral and political virtues. Hayek holds that Christianity has played a dicisive role in providing the rationalization for practices which have not been understood by those who partook in them and were made successful by doing so.

3.3.4. THE ROLE OF DELIBERATE DESIGN AND OF "SOCIAL TECHNOLOGIES" IN HAYEK'S THEORY OF THE RISE OF CIVILIZATION

3.3.4.0. Hayek's answer to this question can, perhaps, be epitomized by the following three interrelated theses: 1. The thesis of the primacy (logical and genetical) of spontaneous order over design, a primacy based on epistemic reasons. 2. The thesis that deliberate design is possible only within a framework of rules and assumptions that are regarded as unproblematic at the moment, and most of which may be unarticulated. This too points to a limitation of design that is due to epistemic reasons. At the same time it helps one to recognize that the tabula rasa fiction betrays a complete lack of understanding of the human condition and of cultural evolution. 3. The thesis

that there is a chance of improving, by deliberate design, an institution that has evolved spontaneously only if the problem at hand is very limited and clearly defined. This is so because of the unintended consequences of practically all social action. Hence, there is only a very limited use for limited or "piecemeal" social technologies, and no rational use for wholesale, large-scale technologies.

The best way of arguing for the first thesis is to illustrate it by using the market order as the choice example, in particular, by demonstrating that it is in principle impossible for a central planning agency to match the efficiency of the market order -- for epistemic reasons.

In particular the second and third theses show what role is assigned to Reason in Hayek's theory. It should dampen the hubris of planners and constructivist rationalists. Hayek writes: "... that all our efforts to improve things must operate within a working whole which we cannot entirely control ..."[56] Both theses imply that cultural evolution can be complemented and, in certain areas, even superseded by design, provided that the measures taken are addressed to very limited and clearly defined problems. Hayek corrects an intellectual pathology that has beset philosophy since Descartes: constructivist rationalism. If we wish to explain the origins or the prevalence of a particular social pattern, we have to choose between two competing types of explanation: intentional-design explanation and invisible-hand explanation in combination with functional-evolutionary account. In particular, if the pattern to be explained is complex and well-structured, it is tempting to believe that the first-mentioned type of explanation offers the most promising gambit. After all, intentional design is a typically human phenomen; executing a premeditated plan is an elementary experience and so are the artifacts produced by intentional design. In intellectual history the physico-theological tradition with the Argument from Design

plays an important role. Its counterpart in social philosophy are the metaphor of "science as a machine", the commander center model of society, and the various contract theories of society (some of them highly popular, e.g., that of John Rawls). All these images of society are very misleading; they are based on false empirical assumptions. The root of the pathology go back to Descartes's fusion of criticism and justification and his maxim that every position that has not been proven to be true or correct should be rejected unless so proven. This maxim is the antipode of Popper's maxim to let creative imagination generate proposals of problem solutions and then to work with them in sense of testing them, i.e., to take them seriously until they have been falsified. In intellectual history an antidote against Cartesian constructivism appeared with the breakthrough of the evolutionary perspective, which the 18th-century Scottish school of Adam Ferguson, Adam Smith and others applied to social phenomena. It was a source of inspiration for Darwin and his contemporary biologists. At the end of the 19th century the evolutionary perspective was re-imported into the social sciences (and sometimes misused there).[57] The recognition of the third, and most important, mechanism of the origin of traditions and institutions - cultural evolution generating spontaneous orders - corrected also another mistake that has infected Western philosophy: Aristotle's mistaken dichotomy of physei and thesei or nomo, the thesis that an institution must be either due to nature (e.g. genetically fixed instincts) or due to convention (deliberate design).[58]

3.3.4.1. "ALL OUR EFFORTS TO IMPROVE THINGS MUST OPERATE WITHIN A WORKING WHOLE WHICH WE CANNOT ENTIRELY CONTROL"

In his critique of legal positivism Hayek points out that the authority of the legislator and of the state derives from pre-existing conceptions of justice (negatively defined), and that a system of articulated law can be applied only within a framework of generally recognized but often unarticulated rules of justice.[59] Hayek's thesis of the dependence of design on an existing frame-

work that has evolved spontaneously can readily be tested by applying it to economy. For instance, the order of a management hierarchy in a business corporation always depends upon a larger spontaneous order.[60] The same holds for an army unit, an army, a school, a business corporation, an art performing team, etc. etc. It is logically impossible to criticize all premisses of an argument simultaneously; logic is criticizable, but only in the sense that parts of a logical system can be criticized by using other parts of logic; analogously, an attempt to criticize and remake the domain of human exchange taken as a whole would be absurd. Within a firm a certain degree of centralization will be desirable; how much will depend upon the size of the firm, its organizational structure, and so forth. If the optimal degree of centralization is exceeded, efficiency will successively be reduced. The reasons for this dependence of a command structure upon an existing framework that is the result of cultural evolution are, again, epistemic reasons: 1) the complexity of the relevant information, 2) the difficulty of handling the information centrally (e.g., because of its deformation in the process of the transfer of information), 3) the difficulty of getting honest information; in certain circumstances it is impossible to provide incentives for the person who possesses the "local" information to provide honest information, e.g., about one's own skills and aims, about how much one makes use of a certain public good, etc. That means that the costs of the acquisition of knowledge may be very high and, if parts of the knowledge are "tacit" knowledge, the costs of acquisition would be infinite.

However, in my opinion, the best way of illustrating the thesis under discussion is by examining the example par excellence of a spontaneous order: language, sometimes called 'the meta-institution of language'. Language with its 1001 functions, (primarily communication of descriptive contents, ex-

pression, appeal, and emotive elements) is a tradition whose prevalence is due to its usefulness as an efficient medium of communication. It has met the test of efficiency in daily life. It has not been designed by any individual or collective, and it could not have been designed; it developed in a gradual and decentralized process and it changes slowly (not necessarily for the better if evaluated from certain evaluative standpoints). Innovations occur in the same way as they do in any tradition or institution. New word meanings are not the outcome of a definition, but rather a new meaning spreads to other language users, and this is what constitutes the "success" of an innovation. Language is the choice example of a framework consisting in large extent of rules that are not articulated and cannot be articulated. Hence, it offers also an ideal example of what is meant by "tacit" knowledge. For instance, a child may notice a grammatical mistake in the speech of others without being able to articulate the rule of grammer that has been violated, without being able to state the rule that it has used in perceiving the mistake.[61] Language has a "contextualist semantics", i.e., the meaning of an expression is dependent on the context, a word is disambiguated by the context of the utterance, by the verbal context and even by the pragmatic situation of the interlocutors. A "contextualist semantics" is an economic device. It increases the ratio of expression potential; innumerably many new tasks can be fulfilled without coining new words, i.e. on the basis of a finite vocabulary. Metaphor is just an extreme form of non-metaphorical usage on the continuum of the creative potential of language. In this way an indefinite variety can be created, for instance, by tacit generalizations (such as, e.g., waves that are not in water, particles that are not visible). There is no prospect of ever articulating the semantic rules for generating this variety; they are unarticulat-able rules.

Artificial languages can be constructed only in the existing framework of ordinary language. For our present purpose such artificial languages as Esperanto are uninteresting; they are nothing but a simplified version of language, parasitic on ordinary language. In analytic philosophy the distinction between ordinary language ('OL' for short) and so-called "ideal or idealized language systems" ('IL' for short) has played an important role. Because one felt, rightly, that OL was not an effective tool in connection with certain problems solving, one constructed formal systems and provided them with articulated semantic rules. These formal systems are designed for very limited and well-defined tasks. They are not designed for communication and they could not be used for communication, if only because they contain pure labels, which cannot be reapplied, i.e. their continued use cannot be controlled. These formal systems are constructed primarily for use in connection with mathematical problems: checking whether or not an argument is valid, and deducing, i.e. making explicit the information implicit in a set of (consistent) premisses. A formal system, an IL, can serve for this purpose only if its semantic is non-contextual, i.e., if the meaning of the items of its vocabulary is independent of the context, even the verbal context. What matters are only type expressions (sign-designs), and their meaning has to be fixed once and for all by the explicit semantical rules of the language. The semantics is truth-theoretical, extensional. Likewise the rules of formation and the rules of transformation are explicitly formulated -- in a language that stands in a meta-relation to the formal system in question.[62] The last meta-language of any constructed "idealized language-system" must be an ordinary language. To sum up, the relationship between OL and IL demonstrates the truth of Hayek's thesis that "all our efforts to improve things (in this case to get a better

instrument for making validity checks, and so forth) must operate within a working whole which we cannot entirely control": the last language must be an ordinary language, i.e. a tradition that already exists and functions well and which has evolved spontaneously in a long process of cultural evolution. It clearly shows that successful design, improvement in the capability of a linguistic tool to serve for certain purposes, presupposes that these purposes be limited and clearly defined.

Incidentally, a characteristica universalis as it was envisaged, e.g., by Leibniz and later as the "unified language of science" (based on the IL, i.e. formal logic with an empirical interpretation) as conceived by the Vienna Circle would have stopped innovation. Conceptual innovation with linguistic means is possible only with a language in the full sense, i.e. with a language enjoying a contextualist semantics, allowing meanings to vary with the context and to be disambiguated by the context. IL can only serve for the above mentioned tasks. If it is used to present a particular theory, that theory is so to speak "deep-frozen": what can be formalized at a time is only one particular version of it. The language of advanced natural science and of mathematics is of an intermediate type, a combination of OL and mathematical IL, partly formalized and partly couched in OL. For instance, there may be a multiple usage of the same word (e.g., 'addition' may be applied to natural numbers, imaginary numbers, structures, etc. (theory of polymorphic types)).[63]

The primacy of OL over the constructed IL does, however, by no means imply that there may not be circumstances in which it is rational to criticize a particular OL, i.e. particular features of it. Nor does it imply that there is necessarily progress in the development of an OL; it may also deteriorate (as is probably the case with most European languages at the moment). As any

tradition an OL may be evaluated from many value viewpoints other than efficiency (efficiency as a medium of communication), such as clarity, richness in metaphors, musicality, and so forth. There are many possible dimensions of evaluating an OL and of comparing the potentials of various OLs.

The examples illustrating Hayek's thesis of the dependence of design on existing orders that have evolved could be multiplied. Let me just mention that the methodology of scientific research can be articulated only within the framework of the criticist tradition, and that the problem of truth precedes even the development of the criticist tradition. The method of empirical testing, of falsification attempts, systematizes and articulates a selection mechanism that we use in daily life. It is the task of methodology to articulate rules for rational theory preference and, hence, also rules for the method of empirical testing, of falsification attempts. These rules can be articulated only in the context of a "working whole" such as a theory of rational action.[64] Here too, the framework can and must be criticized, i.e., if there are concrete reasons to question certain aspects of it; and sometimes the result of methodological studies may help us to eliminate errors in the general framework of epistemology and the underlying image of man.

3.4. EVALUATING TRADITIONS AND INSTITUTIONS FROM THE VIEWPOINT OF A PARTICULAR VALUE SYSTEM

The fact that the origins of a particular tradition can be invisible-handedly explained is irrelevant for the evaluation of that tradition from a particular value system. It is a peculiarity of the social sciences that they have political implications easily since value standpoints often are tacitly assumed. It was argued above that Hayek posits the priority of freedom, and that his reformulation of classical liberalism is its most powerful formulation

in intellectual history so far. If one posits individual freedom as the central value of the public-political sphere, then types of social systems can be evaluated according to how close they approximate a liberal order in the sense of classical liberalism. The ideal type of a liberal society, in the classical sense, is a sociality in which the principle of private rights is the most important of the three organizing principles mentioned above. Hence, the key problem of the political philosophy of classical liberalism is the problem of "how to defend autonomous private rights against the organized professional guardians of those rights".[65] From these considerations follows, not a categorial, but a hypothetical imperative: IF you want to live in a free society, you ought to insist on your own claims to inviolability of persons and property WHILE BEING PREPARED TO CONCEDE CORRESPONDING RIGHTS TO OTHERS AND EVEN BE WILLING TO PARTICIPATE AS A DISINTERESTED THIRD-PARTY ENFORCER AGAINST VIOLATORS.[66] Since the relationship between individual households and government is game-theoretical, and since not only market procedures but the whole public sphere is governed by abstract, impersonal, rules, the person who proceeds to govern his conduct by a Kantian principle of universalizability, in spite of the fact that he has no security that others will do likewise, is likely to be injured and even his moral goals thwarted.[67] So long as the actions of the many dispersed individuals are not so coordinated as to produce reliable expectations among them, each individual will have reason to act in a way illustrated by the Prisoner's Dilemma.

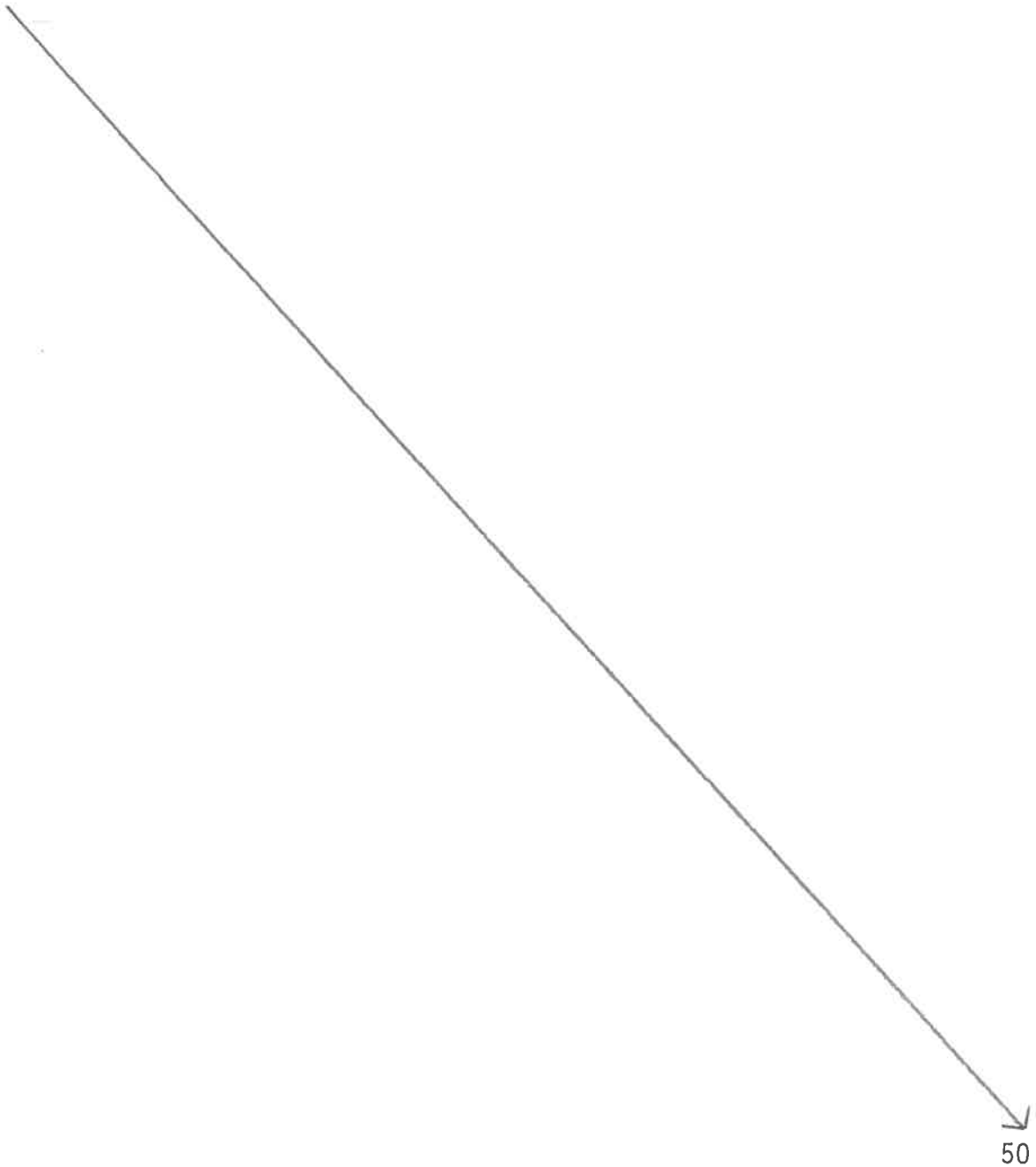
The "privacy ethic", i.e. the rule-system underlying the public sphere of a liberal order, of a sociality under the rule of law, has proved to be a powerful device for creating wealth. Only those nations are rich in which property rights are protected. A command economy does not create wealth and it

precludes freedom, eventually even in the market of ideas. Hayek sees the "success" of a rule system in the increase of the size of the group that partakes in it. How is increase in size related to increase in the wealth of a nation? The statistical measures that have been developed help little to solve the problem of what exactly to include in estimating wealth. However, there is little doubt that the most important resource of a nation is its human capital. It was mentioned above that in the face-to-face group and in the tribal horde trust is an investment in other human beings. The moral system embodied in the traditions of the tribal society protects the parents's investment in children. Hence, they invest in a large number of children. When family ties are weakened, the family-supported system is replaced by legal institutions. In a society of free men, based on market order, people will tend to invest more in their own education and health, and also in a small number of high quality children and in their education. Also the government will invest in educational systems in order that the persons who benefitted from such education will produce the epistemic resources necessary for the functioning and the development of industry and market, and for the generation of high technologies. However, to the human capital does not only belong creative talent, diligence and professional ethics, but also honesty. For the tribal society trust constituted a resource without which it could not survive. To the extent in which the general rules of the abstract society become internalized, contract uncertainty diminishes and thereby the costs of exchange in the economy are lowered. The relation between individual household and government is game-theoretical, and so are many, or most, of the relationships between firms or between participants in market exchanges. Contract uncertainty cannot be completely eliminated by any legal institutions. The societies we live in are

to a certain extent based on calculational rationality. It is to be hoped that the legal institutions will eliminate the Prisoner's Dilemma in most of the areas of economic and public life. But it can never eliminate it completely in all areas, and, more importantly, it can eliminate it only at a certain cost. Hence, apart from talent, professional ethics, knowledge, and so forth, honesty in the sense of the internalization of the abstract rules applicable in the public-political sphere under the rule of law constitutes a valuable resource of a society. To sum up, I propose that the concept of "success" that is relevant in the context of the competition of social systems and the rule systems underlying them be explicated in terms of human capital, and that "human capital" is taken to include not only talent and epistemic resources but also honesty in the sense of an internalization of the rules that make possible an abstract society.

The organizing principles that govern the public sphere in the abstract society are not only an adaptive response to a changed problem situation, but they offer considerable advantages, a better chance of expanded way of life. The market order (in its legal framework) has definite advantages over trade based on personal ties: it economizes on contract enforcement, eliminates the Prisoner's Dilemma, reduces transaction costs, information costs, and decision costs (the law of contract is binding on all traders). Media of exchange that emerge in the process of cultural evolution have obvious advantages over the direct barter system.[68] For instance, money as a social institution reduces the role of trust, because its value is independent of buyers' and sellers' knowing each other or trusting each other, and so forth. In the context of ultrasociality everyone is, by definition, dependent upon the functioning of the division of labor. However, the individual is no longer dependent upon the

good-will of particular persons, as he was in the tribal horde. He can secure his survival and welfare by exercizing a function or by buying services, and this has increased his freedom. Moreover, a society based on market order can easily afford to support those of its citizens who are unable to support themselves, e.g., through a negative income tax.



However, the development from the tribal horde to the anonymous society does not guarantee an increase in freedom. As the socialist states demonstrate, a very large anonymous society can practice an internal command economy together with dictatorship. It cannot be said too often that in no socialist country are even the most fundamental civil liberties guaranteed and respected. It is also well-known that external conflict promotes the adaption of internal command economies and dictatorship; sociologists have drawn attention to the phenomenon of "war-sprung socialism" (N. Nisbet). The market order under the rule of law opens the way for the possibility of a society of free men; it is one of its preconditions. The transition from a social order in which all the relations of persons have their origin in the Family to a social order in which all these relations arise from free agreement of individuals constitutes a singular development in the history of mankind. The abstract society with market order has made possible the open society, and the open society has for the ordinary citizen brought a measure of personal freedom unimaginable in all other known forms of society. This means that this type of sociality is a rare and endangered species. "Law and property, and thus the possibilty for peaceful exchange, can only persist where individuals are ultimately willing to use violence in their defence.[69] From the value position of classical liberalism the privacy ethic is preferable to any of the alternative social ethics competing with it. The privacy ethic is an ethic of individual responsibility and prudent housekeeping, i.e., it endorses the classical moral and political virtues. Today state intervention leads to increasing dysfunctions, which undermine the value which the interventions are designed to secure; many of the state interventions offer choice examples of unintended consequences. Whether the privacy ethic will win the competition is an open question. Much

may depend upon how widespread a better understanding of the rise of civilization and the functioning of a modern society will become. As Hayek has often pointed out the attacks on capitalism are due to the fact that its critics do not understand that it is not the result of intentional design but a spontaneous order that has been selected in cultural evolution by means of group selection. Lacking this knowledge, leftist intellectuals attack the moral tradition, the privacy ethic, to which we owe the extended order.

What about the costs of the open society? Everything in life has costs or, more accurately speaking, by acting in a certain way or investing in a particular project we incur opportunity costs, foregone benefits, benefits that would have accrued to us if we had opted for another one of the available alternatives. Neither the open society nor the privacy ethic can satisfy the "instincts" fitted to the tribal horde and the emotions and moral intuitions associated with the moral system of the tribal horde, the face-to-face community. Those who cannot fill the emotional vacuum left by the abstract and even by the open society will long for group membership and for the elation which one may sometimes feel by identifying with a group or with a "cause". Of course, in the abstract society face-to-face groups are interspersed: the family, the circle of friends, and so forth. Apparently, for many this is not enough, and this is, perhaps, understandable considering that the moral system of the tribal horde is not only embodied in the emotions internalized in early childhood, but may, perhaps, in some extent be genetically implanted through man's hunter-gatherer life and even have its roots in man's primate heritage. The strength of this longing for the emotional atmosphere of the tribal horde is beautifully expressed by Hayek: "It shows itself conspicuously when sometimes even the outbreak of war is felt as satisfying a

craving for such a common purpose; and it manifests itself most clearly in modern times in the two greatest threats to a free civilization: nationalism and socialism."[70] Both represent atavistic impulses and embody the desire to reverse the cultural evolution that extended the order of peace beyond the small groups pursuing the same ends, the desire to return to a state where a common purpose is required for establishing and maintaining a peaceful order, and consensus is founded upon a common perception of reality. Hence, both nationalists and socialists are susceptible to the 'tentation totalitaire' (J.-F. Revel's watch-word). Socialism can thus be seen as a paradoxical combination of constructivist rationalism, the belief that design is the best way to solve all societal problems, and romanticism. The first view is an expression of constructivist hubris, a fatal overestimation of the powers of Reason. The second is a romantic plea for a return, even in the public-political sphere, to the warmth of the face-to-face group, to reintroduce into the public-political sphere the norm-system that fitted the tribal horde and still fits our "natural instincts which are the instincts of the savage".[71] Socialists can make these reactionary proposals with a good conscience because: firstly, they do not understand the rise of civilization and, hence, do not recognize that man was civilized much against his will; secondly, they do not understand the functioning of modern society and economy and, hence, do not recognize that reintroducing into the public sphere the moral system that fitted the tribal horde would destroy the extended order; thirdly, they do not understand that it is impossible - for epistemic reasons - to simulate the efficiency of the market order by a centralized planning board; and forthly, they do not understand that capitalism is one of the preconditions of a free market of ideas.

FOOTNOTES

1 An attempt to apply the economic approach to methodological problems is made, e.g., in (Radnitzky 1985b).

2 (Campbell 1974). Perception is an elementary knowing process (in both senses of 'elementary'). Perceptions are colored by "background knowledge"; on the human level, the very general assumptions about reality that we regard as unproblematic at the moment can be seen as indispensible economizing devices for dealing with a complex reality. Vision replaces exploration by locomotion (Campbell 1974). Thereby it economizes energy and time, reduces risks for the animal, eliminates most of the collisions, etc. It is based on the coincidence that the flux of light is obstructed by most solid bodies, which would block animal locomotion. (Very likely, the range of visible light can be explained by tracing its origin to photosynthesis. Vision is then seen, biochemically, as a derivation of photosynthesis and, functionally, as an ancillary to it [Wächtershäuser 1984]). Vision may thus be viewed as a protoform of making scenarios by means of language. Both have basically a selection function, winnowing away dangerous routes or undesirable options from a set of opportunities. With life, in particular with animal life, there appears a protoform of choice and also a protoform of freedom (Jonas 1984). In order to perceive a distant object as a goal, so that locomotion can be sustained in spite of the effort and the time required to reach the object, an animal must be guided by some drive, by a protoform of intention. Inanimate nature, e.g., a stone, doesn't have to do anything in order to maintain itself at the same level of system, while an organism must carry out certain activities in order to stay alive. The organism in its present state is itself the result of its metabolic activity and is in this respect very different from a machine. In an important

sense an organism retains its "form" or "structure", while changing its matter.

3 The locus classicus is Hayek's The Use of Knowledge in Society (originally published in 1944); (Meckling and Jensen 1984) develop the theme of the collocation of relevant knowledge and decision rights, in particular for the firm.

4 Cf., e.g., (Bartley 1982) and (Bartley 1962/1984). As early as 1962 Bartley pleaded for the separation of criticism and justification, and with his "pancritical rationalism" he removed a major difficulty in the original version of Popper's critical rationalism.

5 (Olson 1982) - The Rise and Decline of Nations - analyses the manner in which various interest groups blackmail the state with a view to reducing the impact of the selection mechanisms which operate in an efficient economy and which are indispensible for its efficiency.

6 In analogy, in scientific research a plurality of proposed solutions to a problem is the seedbed of scientific progress, if it is placed in a non-justificational context.

7 (Hayek 1967 /Studies/) pp. 116 f. "... Kant developed his theory of the categorial imperative by applying to morals the concept of the rule of law which he found ready made (in the writings of Hume)". Cf. also (Gray 1984) p. 62.

8 (Hayek 1967 /Studies/) p. 173; (Hayek 1979 /LLL/) III:168; (Gray 1984) pp. 60, 66, 67.

9 (Hayek 1967 /Studies/) p. 166; (Gray 1984) p.66.

[10] The idea of absolute truth or of comparative truthlikeness is the methodological counterpart to the regulative principle of individual freedom. It is the task of the methodology of research to explicate this idea and to analyze its relationship to other guiding principles of scientific research.

[11] When making a comparative analysis of institutional arrangements that are realizable and voicing a preference for those that are guided by the idea of individual freedom as regulative principle, one should remember that, firstly, in the world today, most governments are dictatorships and that most people live under dictatorships, and, secondly, that, if we look over the sweep of history, this condition has been normal, i.e., that liberal states have been the rare exceptions in human history (Gordon Tullock).

[12] (Campbell 1983)

[13] A good example is Bernd Heinrich's Bumblebee Economics (Heinrich 1979) or the work of the biologist M.T. Ghiselin, e.g., (Ghiselin 1974).

[14] Cf., e.g., (Radnitzky 1984) pp. 28 f.

[15] (Waal 1982) pp. 211 f.

[16] Cf., e.g., (Campbell 1983) p. 13.

[17] (Campbell 1983) p. 27.

[18] (Waal 1982) p. 210.

[19] (Gruter 1982), (Goodall 1976), (Campbell 1983) p. 28.

[20] (Waal 1982) p. 210, cf. also (Willhoite 1976) p. 1115.

[21] (Waal 1982) p. 212.

[22] (Tiger and Fox 1971)

[23] (Willhoite 1976) p. 1123.

[24] The social insects also provide a concretization of the slogans of the National-Socialists: "Du bist nichts, dein Volk ist alles" (You are nothing, your nation/community is everything) and "Privatleute haben wir nicht mehr" (roughly: Privacy has been abolished - private rights have been abolished).

[25] Marx's idea and ideal of man as a species being (ein Nur-Gattungswesen) finds a beautiful concretization at the level of the social insects.

[26] With the help of the "rational choice" model (the REMM-model: resourceful-evaluating-maximizing-man (e.g., [Brunner and Meckling 1977]) it can be explained why the rule-following model of man can be used to explain conduct in certain situations, in particular, in tribal society, which is governed by tradition.

[27] (Hayek 1967 /Studies/) ch. 6 is the locus classicus.

[28] (Popper 1972) ch. 3 and 4.

[29] I am following here (Hirshleifer 1980) pp. 653 f.

[30] (Hirshleifer 1980) p. 653. An example of a trait that has survived although it appears to be on the way of becoming detrimental to a large part of mankind is the Darwinian breeding strategy. See, e.g., (Colinvaux 1978), (Hardin 1968).

[31] (Hayek 1960 /Constitution/) pp. 69 f.

[32] Cf., e.g., (Schoeck 1970), German original 1966. Cf. also (Hirshleifer 1980) p. 656.

[33] (Hirshleifer 1985) MS p. 21.

[34] (Hirshleifer 1980) p. 662.

[35] Today, for instance, the Soviet Union dogmatizes the Marxist-Leninist myth, but it is satisfied if the citizens pay lip service to it, if they practice "dissident assent" (A. Shtromas).

[36] The National Socialists made an explicit effort to return to this stage (Cf. fn. 24 above), and so do all socialist states today, at least in their rhetorics. Even the neo-Marxist so called Frankfurt school (Habermas, e.g.) use 'privacy' and 'privatization' as disparaging terms.

[37] Cf., e.g., (Radnitzky 1983b) p. 393.

[38] In the beginning the primitive agricultural techniques reduced protein consumption, health, life-span, leisure, etc. Apparently, it was adopted because, when hunting grounds had been depleted, agriculture provided the means of surviving at least at a lower material level. Its only advantage over hunting and gathering was that of providing more calories per unit of land and, hence, of supporting denser populations.

[39] Although in the Soviet Union the private plots constitute only about one percent of the land under cultivation, the Soviet press reports that approximately one-quarter of the total value of agricultural ouput is generated on these plots (Gwartney 1985, p. 45). The "impossibility of socialism" is demonstrated by the fact that, in order to avoid calculational chaos, a command economy such as that of the Soviet Union has to take its bearings from world market prices, and moreover that socialist economies can only survive because there exists a (legal and/or an illegal) sector of the economy which is private. This illegal sector has a counterpart in the West in the inofficial, the so-called "hidden" or "black" eco-

nomy, which is an unintended consequence of state interventions in the market order.

40 (Hirshleifer 1980) p. 659. To my knowledge, the most extensive and informative treatment of what is known about the institution of private property is (Lepage 1985).

41 (Meckling and Jensen 1984)

42 Cf. (Brenner 1983) Chapter 2. The central thesis of Brenner's book is that it is population size and changes in population size that are the decisive factors in the development of economics and institutions.

43 Cf. (Gray 1985) MS p. 8. The main problem of the dictator, i.e. the problem of how to stay in power, is similar to the average citizen's problem of how to retain one's privileges or necessities of life. The difference is that the dictator has to concentrate on the dangers that come from his entourage, his closest collaborators, and he can stay in power only so long as he succeeds in playing them off against each other. Hitler, Stalin, and Mao were masters of this game.

44 Cf., e.g., (Albert 1978) p. 86.

45 Cf. (Nozick 1974) Part I and (Ullmann-Margalit 1978) p. 264.

46 (Hirshleifer, 1985). Hirshleifer convincingly argues that, while each government of a nation-state has a near-monopoly of power within a limited region, the struggles that continue to take place along the frontiers or spheres of influence reveal that there is typically a periphery along which forces are about equally balanced. Hirshleifer's analysis makes it plausible that the size of a nation depends on its ability to organize power at the base and to project power over distance.

[47] According to Hume there are three organizing principles, "three fundamental laws of nature", that make society possible: "stability of possession, of its transference by consent, and of the performance of promises". Hume gives absolute priority to property rights: "No one can doubt, that the convention of the distinction of property, and for the stability of possessions is of all circumstances the most necessary to the establishment of human society". (Treatise of Human Nature, book III, part II, para. II; [Hayek 1967] p. 43.)

[48] Cf., e.g., (Hayek 1976) LLL:II pp. 108 ff.

[49] (Hayek 1976) p. 110.

[50] Hayek has introduced these ideas in a seminal 1954 American Economic Review article entitled "The use of knowledge in society", and previously in a paper in "Economics and knowledge", which was published in 1937 in Economica. The topic of the collocation of knowledge and decision rights has been deepened in (Meckling and Jensen 1984).

[51] (Ullmann-Margalit 1978) provides an illuminating analysis of both problems.

[52] (Brunner 1984) p. 198.

[53] The Wealth of Nations, IV.II.9. Cf. also (Ullmann-Margalit 1978) p. 287 who mentions an early occurrance of the idea of invisible-hand explanation in Adam Smith's The Theory of Moral Sentiments, IV.1.10., which appeared in 1759. In our times nobody has more forcefully elaborated the idea of invisible-hand explanations than F.A. v. Hayek. In this connection another classic quotation from Adam Smith comes to mind: "It is not through the benevolence of the butcher, the brewer or the baker that we expect our dinner, but from their regard to their own interests".

[54] For a concise outline see, e.g., (Gwartney 1985).

[55] The statement that a behavior will not be institutionalized unless the actors have some theory about a causal connection between behavior and the effect they evaluate as beneficial needs clarification. Robert Merton calls a functional explanation a 'latent functional explanation' if the actors do not recognize the real causal connection, but believe some false theory about the connection. That theory would then qualify as rationalization. However, if some (not too many!) of the participants recognize the real connection while the majority does not, the explanation of the prevalence of the tradition could still qualify as latent functional explanation. The stock in trade example of a latent-functional explanation is rain-making ceremonies. The participants in this tradition have a theory about the causal connection between their behavior and certain beneficial effects: their behavior is supposed to influence some supernatural power in such a way that it intervenes. But in this case, the latent function of the behavior is the benefit that the tribe gets from these ceremonies in increased group cohesion. So long as the actors cannot even in retrospect recognize the real causal connection, i.e., recognize also that there is no causal connection between their behavior and rainfall, the false theory they adopt -- a rationalization -- may itself have a latent function, viz. for the durability of the institution, the ceremonial meeting, which brings them benefits in group cohesion although not in rainfall. The rationalization may be indispensable both for the evolution and for the prevalence of the tradition or institution.

[56] (Hayek 1960 /Constitution/) pp. 69 f.

[57] Cf., e.g., (Hayek 1972) pp. 59 ff.

[58] (Hayek 1967 /Studies/) pp. 96, 99.

[59] (Hayek 1967 /Studies/) p. 102.

[60] (Gray 1984) p. 35.

[61] (Hayek 1967) p. 45, (Gray 1984) p. 215 fn. 15.

[62] (Radnitzky 1981) provides an outline of this problematic.

[63] Perhaps also Gödel's incompleteness theorem is relevant here. It states that the proof of consistency of any non-trivial set of mathematical axioms (constructed formal system) can be found only outside that set. Metaphorically expressed: that mathematical truth, i.e. what we recognize as mathematical truth, is wider than what we can formalize, what we can formally reconstruct.

[64] For an attempt to defend these assertions see, e.g., (Radnitzky 1985b).

[65] (Hirshleifer 1980) p. 651.

[66] (Hirshleifer 1980) pp. 653, 663.

[67] (Gray 1985) MS p. 7.

[68] As was pointed out by Ludwig von Mises in his Staat und Wirtschaft in 1919, p. 133, cf. also Mises's The Theory of Money, Yale University Press 1953, pp. 30-34.

[69] (Hirshleifer 1985) MS p. ..

[70] (Hayek 1979) LLL:III p. 111.

[71] (Hayek 1979) p. 174, see also p. 165.

REFERENCES

Agassi, J. and Cohen, R. (eds.). Scientific philosophy today. Dordrecht: Reidel 1981.

Albert, H. Traktat über rationale Praxis. Tübingen: Mohr 1978.

Andersson, G. (ed.). Rationality in science and politics. (Boston Studies in the Philosophy of Science. Vol. 79) Dordrecht: Reidel 1984.

Bartley, W.W.III."The philosophy of Karl Popper. Part I: Biology and evolutionary epistemology", Philosophia. Philosophical Quarterly of Israel 11:121-221 (1976).

Bartley, W.W.III."The philosophy of Karl Popper. Part III. Rationality, criticism, and logic", Philosphia. Philosophical Quarterly of Israel 11:121-221 (1982).

Bartley, W.W.III. The retreat to commitment. New York: Alfred A. Knopf 1962, 2nd ed., rev. and enlarged, with 100 pages Appendices 1984, La Salle, Ill.: Open Court 1984.

Bartz, S. "Evolution of eusociality in termites", Proceedings of the National Academy of Sciences, U.S.A. 76:5764-5768 (1979) (Corrections, 1980, 77:3070).

Bonner, J. The evolution of culture in animals. Princeton, N.Y.: Princeton University Press, 1980.

Brenner, R. History - the human gamble. Chicago: Chicago University Press 1983.

Bridgeman, D. (ed.). The nature of prosocial development: Interdisciplinary theories and stretegies. New York, N.Y.: Academic Press 1983.

Brunner, K. "Monetary policy and monetary order", Außenwirtschaft 39: 187-206 (1984).

Brunner, K. and Meckling, W. "The perception of man and the conception of government", Journal of Money, Credit and Banking 9:70-85 (1977).

Campbell, D. "Evolutionary epistemology" in (Schilpp, 1974) pp. 413-463.

Campbell, D. "On the conflicts between biological and social evolution", American Psychologist, 30th December 1975, p. 1120 (Presidential adress).

Campbell, D. "Legal and primary-group social controls", Journal of Social and Biological Structures 5:431-438 (1982).

Campbell, D. "The two distinct routes beyond kin selection to ultra-sociality: Implications for the humanities and social sciences", in (Bridgeman, 1983) pp. 11-42.

Cappelletti, V., Luiselli, B., Radnitzky, G. e Urbani, E. (eds.). Saggi di storia del pensiero scientifico dedicati a Valerio Tonini. Roma: Società Editoriale Jouvence 1983.

Cohen, M.N. Food crisis in pre-history. New Haven: Yale University Press 1977.

Colinvaux, P. Why big fierce animals are rare. An ecologist's perspective. Princeton: Princeton University Press 1978.

Ehrlich, I. "Demand for life", in (Radnitzky and Bernholz, 1985), forthcoming.

Erben, H. Leben heißt Sterben. Der Tod des Einzelnen und das Aussterben der Arten. Hamburg: Hoffmann und Campe 1981.

Erben, H. Intelligenzen im Kosmos? Die Antwort der Evolutionsbiologie. München: Piper 1984.

Ghiselin, M. The economy of nature and the evolution of sex. Berkeley: University of California Press 1974.

Ghiselin, M. "General economy: problems and prospects" in (Radnitzky and Bernholz, 1985), forthcoming.

Goodall, J. "Continuities between chimpanzee and human behavior" in (Isaac and McCown, 1976) pp. 81-95.

Gray, J. Hayek on liberty. Oxford: Blackwell 1984.

Gray, J. "The economic approach to human behavior: its prospects and limitations", in (Radnitzky and Bernholz, 1985), forthcoming.

Gruter, M. "Biologically based behavioral research and the facts of law", Journal of Social and Biological Structures 5:315-323 (1982).

Gwartney, J. "Private property, freedom and the West", The Intercollegiate Review 20:39-51 (Spring/Summer 1985).

Hardin, G. "The tragedy of the commons", Science 162:1243-48 (1968).

Harris, R. No, Minister! London: Institute of Economic Affairs (Occasional Paper 71) 1985.

Hayek, F.v. The road to serfdom. Chicago: University of Chicago Press 1944, ff.

Hayek, F.v. The constitution of liberty. Chicago: University of Chicago Press 1960.

Hayek, F.v. Economic freedom and representative government. London: Institute of Economic Affairs 1973.

Hayek, F.v. Law, legislation and liberty. 3 vols., London: Routledge and Kegan Paul 1973, 1976, 1979.

Hayek, F.v. Drei Vorlesungen über Demokratie, Gerechtigkeit und Sozialismus. Tübingen: Mohr 1977.

Hayek, F.v. New studies in philosophy, politics and economics. London: Routledge and Kegan Paul 1978.

Hayek, F.v. Die drei Quellen der menschlichen Werte. Tübingen: Mohr 1979.

Hayek, F.v. "The results of human action but not of human design", in his own Studies in philosophy, politics and economics, London: Routledge and Kegan Paul 1967, pp. 96-105.

Hayek, F.v. "Die überschätzte Vernunft" in (Riedl and Kreuzer, 1983) pp. 164-192. (1983a)

Hayek, F.v. "Sitte, Ordnung und Nahrung" (Vortrag anläßlich der Verleihung eines Ehrendoktors am 1.6.1982) Gießener Universitätsblatt Heft 1, 1983, pp. 23-30. (1983b)

Hayek, F.v. "The rules of morality are not the conclusions of our reason", in Commemorative Volume of the Twelfth International Conference on the Unity of the Sciences (Chicago 1983), New York: International Cultural Foundation Press 1984, pp. 35-42.

Heinrich, B. Bumblebee economics. Cambridge, Mass.: Harward University Press 1979.

Hirshleifer, J. "Economics from a biological viewpoint", The Journal of Law and Economics 20:1-42 (1977).

Hirshleifer, J. "Natural economy versus political economy", Journal of Social Biological Structures 1:319-337 (1978).

Hirshleifer, J. "Privacy: Its origin, function, and future", The Journal of Legal Studies 9:649-664 (1980).

Hirshleifer, J. "Evolutionary models in economics and law", Research in Law and Economics 4:1-60 (1982), followed by commentary by various authors.

Hirshleifer, J. "The economic approach to conflict", in (Radnitzky and Bernholz, 1985), forthcoming.

Isaac, G. and McCown, E. (eds.). Human origins: Louis Leakey and the East African evidence. Menlo Park, Cal.; Benjamin Cummings 1976.

Jonas, H. "Evolution und Freiheit", Scheidewege 13:85-102 (1983/84).

Lacy, R.C. "The evolution of eusociality in termites: a haplodiploid analogy", American Naturalist 116:449-451 (1980).

Lepage, H. Pourquoi la propriété? Paris: Hachette 1985.

Lindbeck, A. Interpreting income distribution in a welfare state: The case of Sweden. Stockholm: Institute for International Economic Studies 1982.

Meckling, W. and Jensen, M. "Knowledge, control and organizational structure", MS.for the 11th Interlaken Seminar on Analysis and Ideology, 1984.

Mises, L.v. The theory of money and credit. New Haven: Yale University Press 1953; first published as Theorie des Geldes und der Umlaufmittel in 1912.

North, D. Structure and change in economic history. New York, N.Y.: Norton 1981.

Nozick, R. Anarchy, state, and utopia. New York: Basic Books 1974.

Olson, M. The rise and decline of nations. New Haven, Conn.: Yale University Press 1982.

Petroni, A. Karl R. Popper: il pensiero politico. Critiche e proposte del grande teorico liberale in una ricostruzione antologica. Firenze: Le Monnier 1981.

Popper, K. The open society and its enemies. 2 vols., London: Routledge and Kegan Paul 1945, 11th ed. 1977.

Popper, K. The poverty of historicism. London: Routledge and Kegan Paul 1957, 9th ed. 1976 (first published in Economia 1944 and 1945).

Popper, K. Objective knowledge. Oxford: The Clarendon Press 1972, 5th rev. ed. 1979.

Radnitzky, G. "Analytic philosophy as the confrontation between Wittgensteinians and Popper", in (Agassi and Cohen 1981) pp. 239-286.

Radnitzky, G. "Science, technology, and political responsibility", Minerva 21:234-264 (1983). (1983a)

Radnitzky, G. "The science of man: biological, mental, and cultural evolution" in (Cappelletti et al., 1983) pp. 369-401. (1983b)

Radnitzky, G. "Die ungeplante Gesellschaft. Friedrich von Hayeks Theorie der spontanen Ordnungen und selbstorganisierenden Systeme", Hamburger Jahrbuch für Wirtschafts- und Sozialpolitik 29:9-33 (1984).

Radnitzky, G. "Réflexions sur Popper. Le savoir, conjectural mais objectif, et indépendant de toute question: Qui y croit? Qui est à son origine?", Archives de Philosophie (Paris) 48:79-108 (1985). (1985a)

Radnitzky, G. "Cost-benefit thinking in the methodology of research", (Radnitzky and Bernholz, 1985) forthcoming. (1985b)

Radnitzky, G. and Andersson, G. (eds.). Voraussetzungen und Grenzen der Wissenschaft. Tübingen: Mohr 1981.

Radnitzky, G. and Bartley, W.W.III (eds.). Evolutionary epistemology and theories of rationality. New York: Paragon Hause Publishers 1986 forthcoming.

Radnitzky, G. and Bernholz, P. (eds.). Economic Imperialism: the economic approach applied outside the traditional areas of economics. New York, N.Y.: Paragon House Publishers 1985, forthcoming.

Riedl, R. and Kreuzer, F. (ed.). Evolution und Menschenbild. Hamburg: Hoffman und Campe 1983.

Schilpp, P.A. (ed.). The philosophy of Karl R. Popper. LaSalle, Ill.: Open Court 1974.

Schoeck, H. Envy: A theory of social behavior. New York: Harcourt Brace Jovanovitch 1970.

Tiger, L. and Fox, R. The imperial animal. New York: Dell 1971.

Trivers, R. and Hare, H. "Haplodoploidy and the evolution of social insects", Science 191;249-263 (1976).

Ullmann-Margalit, E. "Invisible-hand explanations", Synthese 39: 263-291 (1978).

Waal, F. de. Chimpanzee politics. London: J. Cape 1982.

Wächtershäuser, G. "Light and life: on the nutritional origins of perception and reason", MS presented at the AAAS Annual Meeting in New York, N.Y., May 1984.

Willhoite, F. "Primates and political authority", The American Political Science Review 70:1110-1126 (1976).

Wilson, E. "The evolution of caste systems in social insects", Proceedings of the American Philosophical Society 129 (4) (1979).

Winter, S. "Economic 'natural selection' and the theory of the firm", Yale Economic Essays 4:225-272 (1964).