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Democracy, the Market, and Human Behaviour

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Abstract: Democracy requires a certain degree of rationality among voters. On the other hand, empirical, in particular experimental economics shows that human behaviour deviates from fully rational behaviour (homo oeconomicus). Moreover, it is known that preferences of people are influenced by their social environment and their own past consumption experiences. This causes difficulties for welfare economics – the traditional approach taken by economists for answering policy questions and for justifying market outcomes. In this lecture I show that the hypothesis of adaptive preferences is consistent with observed human behaviour and allows a generalisation of welfare economics to cover endogenous formation of preferences. It is also consistent with the rationality requirements of democracy. I suggest that economic theory, economic policy advice and political theory move from the model of homo oeconomicus to the model of "homo oeconomicus adaptivus".

I Britain and Germany: Ideas for a Good Economic System

After World War II West Germany turned towards a market economy. This was, no doubt, to a large degree due to the influence of the Western Allied Occupation forces, in particular due to American influence. East Germany turned towards a centrally plannend economy, following the leadership and the dictate of the Soviet Union. Thus, in a sense, Germany became a laboratory of the two competing ideologies on how to organise an economy and, therefore, how to organise society. As Keynes remarked in the finishing paragraphs of his General Theory, it is ideas which really are the most important causes for the direction economic policy takes: "Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler a few years back."[1]

The intellectual origins of the Soviet Union and thus of East Germany's regime after World War II are of course of German origin: Karl Marx and Friedrich Engels. And their ideas received their final form, as you know, here in London, where Marx spent the second half of his life in exile and where he is buried.

The intellectual origins of the idea that a competitive market economy is the appropriate economic order are of course to be found in the eighteenth century in Britain. It was in London where Adam Smith's "Wealth of Nations" appeared in 1776. But the specific form economic policy would take in West Germany after World War II is intellectually strongly influenced by ideas which were developed in Germany itself during the thirties and forties of the twentieth century, by people who lived, as it later would be called, in the "inner emigration", in German: "innere Emigration". I mention Walter Eucken in particular, but also his close allies in the circle that was known under the name "Freiburger Schule", the "Freiburg School". But there were more economists in Germany at the time, who had similar

[1] John Maynard Keynes (1936), General Theory, last paragraph.

ideas. One of them was Ludwig Erhard. He then after the war became the man in German politics, who was the leading figure to implement large parts of the programme which then would be called "Soziale Marktwirtschaft", the "Social Market Economy". The Social Market Economy programme merged two important strands of German economic thinking into a concept that became, as you all know, exceptionally successful. One strand was Ordo-Liberalism, as developed in particular by Walter Eucken and the legal scholar Franz Böhm. The other strand was a continuation and further extension of "Sozialpolitik", "Social Policy", which is a set of ideas developed by a group of economists under the leadership of Gustav Schmoller, who also was the leader of a school of thought which we know under the name of "Historische Schule", the "Historical School".

Last year Sir Anthony Atkinson gave the First Anglo-German Foundation Lecture. The title was "Britain, Germany and Social Europe 1973-2020". The lecture was concerned with topics which correspond to the large field of "Sozialpolitik". Therefore I have decided to treat the other leg of "Soziale Marktwirtschaft", which is "Ordo-Liberalism", or the theory of the economic order or the theory of the market system. This is, of course a vast field, which I cannot cover in this one hour lecture. I select a particular topic, which is also one of the main topics of my own research: the implications of our present knowledge about human behaviour for the appropriate economic order. As you will see, the starting point is Eucken's theory of the economic order; but today we have to go beyond Eucken in a rather substantial way.

Traditional Welfare Economics as well as Eucken's Theory of economic systems is built on the assumption of the fully rational, utility maximising economic agent, i.e. on the assumption of "homo oeconomicus". This assumption also includes the hypothesis that preferences of homo oeconomicus are fixed once and for all. This homo oeconomicus assumption allowed economists to develop a particular variant of normative economics which is fully individualistic. Normative individualism thereby was possible. By this I mean the following: the measuring rod for the performance of an economic system is fully anchored in the preferences of individuals. There is no "collectivist" value judgement about the worth of particular goods involved. (Of course, distributional justice considerations always require some "collectivist" value judgement – even in traditional welfare economics. One example is the Atkinson Welfare function which then was an important building block of the Mirrlees-Diamond- Atkinson- Stiglitz theory of optimal taxation).

If you – realistically – admit that preferences are influenced by the economic environment normative individualism faces a fundamental difficulty: the measuring rod of economic system performance no longer is independent of the object that it is supposed to measure. It is like a measuring rod that changes its length as a function of the length of the table it is supposed to measure. Such measuring rod no longer allows a straightforward measurement of the length of objects.

I believe that this difficulty is the reason for the tenacity with which economists have stuck to the assumption that preferences are fixed, are exogenously given. They did not see a way to maintain normative individualism, if they would give up the assumption of fixed preferences.

II Normative individualism: how to put "freedom" into economic models?

But why maintain normative individualism? The answer is: "freedom" or "liberty". We as economists want to develop a theory which answers the question: how can a society function in which free men and women live, consume, produce, compete, cooperate, love, hate and express their opinions? And liberty implies that people themselves decide whether to eat meat every day or rather reduce their wage-earning time to have more leisure time for gardening.

Freedom, a grand idea and ideal, is not so much in the foreground of the routine work of economists. There is, of course, the great work of Friedrich August von Hayek, "The Constitution of Liberty"[2]. And there is the impressive work of Amartya Sen[3] and his concept of liberty as defined by his capabilities approach. Both, Hayek, as well as Sen are part of the great London moral-intellectual tradition which is anchored in the philosophical-political discourse of the eighteenth century: Locke, Hume, Samuel Johnson, Ferguson, Adam Smith, Bentham, Burke to name but a few. And Hayek, coming from Vienna, left London to move to Chicago, wherefrom he returned to the German speaking part of the world: to Freiburg. There he took on and expanded the freedom tradition of the Freiburg school.

The down to earth mainstream economist explains human behaviour by thinking in terms of the dichotomy of constraints and preferences. I believe this to be an implicit theory of freedom. The constraints are the limitations of choice, thus of freedom, of the agent's behaviour. Within these constraints the agent chooses according to his/her preferences. And thus the preferences are the expression of the agent's freedom.

Why preferences and thus freedom only indirect rather than freedom direct? The reason is that - despite individual freedom – models of human behaviour need a certain degree of predictability. Otherwise it would be impossible to understand how a society of free people functions. Take an example: the law of demand. It says: keeping real income the same a rise in the price of a good reduces the demand for that good. This law, which is quite useful for an understanding of social interaction, can be derived by reference to the concept of preferences and by assuming that the agent chooses that commodity basket which is best according to her/his preferences, i.e. by assuming a utility maximising agent.

The idea of equilibrium is quite important to the way economics describes the world. The idea of equilibrium is imported into economics from science, to be precise, from Newtonian mechanics. In the Wealth of Nations, in particular in his theory of the natural price, Adam Smith tried to emulate Newton's mechanics. The interaction of individuals is modelled by assuming predictability of human behaviour in a similar way as in classical mechanics bodies move according to Newton's law of gravitation. This means that - for modelling purposes - agents are automata, are machines. L´homme machine, to quote De la Mettrie[4]. How does this square with the idea of freedom? Is not the very concept of freedom connected with the idea of unpredictability?

The answer is the distinction already mentioned, the distinction between constraints and preferences. It is a distinction which does not exist in the theory of automata or robots. Automata don't have preferences. The concept of preferences allows combining two seemingly contradictory concepts: freedom, which involves unpredictability of human behaviour and the concept of the human agent, whose behaviour is predictable and thus can be integrated as an element into a model of human interaction and into the description of its equilibria. The "trick" is: although behaviour of an agent is predictable once we know her/his preferences, the agent, so to speak, is free to choose her/his preferences. Preferences can be anything, once they are internally consistent. And the theory makes predictions which are then valid under any set of individual preferences, as long as these preferences are internally consistent. The basic theory then applies to any set of predictable preferences and thus accommodates the principle of unpredictability of free behaviour.

III Adaptive preferences: the fundamental theorem

[2] F.A. von Hayek (1960), The Constitution of Liberty
[3] A. M. Sen, (1999), Development as Freedom
[4] De La Mettrie (1744), L´Homme Machine

I do not pursue further the intricacies of the theory or philosophy of freedom. Rather I want to pursue the question: is it possible to maintain normative individualism, once we acknowledge that homo oeconomicus is not a realistic description of human behaviour? My answer will be: yes, if we can rely on the realism of an assumption which I call adaptive preferences. I then describe human behaviour as "homo oeconomicus adaptivus".

In this lecture with its time constraints I cannot go into the details of the theoretical and empirical side of my attempt to save normative individualism. But I do hope that my exposition so far has convinced you of the importance of the task: we talk about the possibility of freedom in society.

The economists among you know the endowment effect: Take a class of 100 students. You randomly allocate 50 coffee mugs as a gift to every second student. Now you announce that students can trade coffee mugs against money. You ask every student for her/his price of a coffee mug: the owners for the price at which they are prepared to sell their mug, the non-owners for the price at which they are prepared to buy a mug. It then turns out that on average the initial owners value the mug substantially higher than do the non-owners. Thus preferences, in this case for coffee mugs, are not exogenously given. Rather they are influenced by the initial allocation of goods.

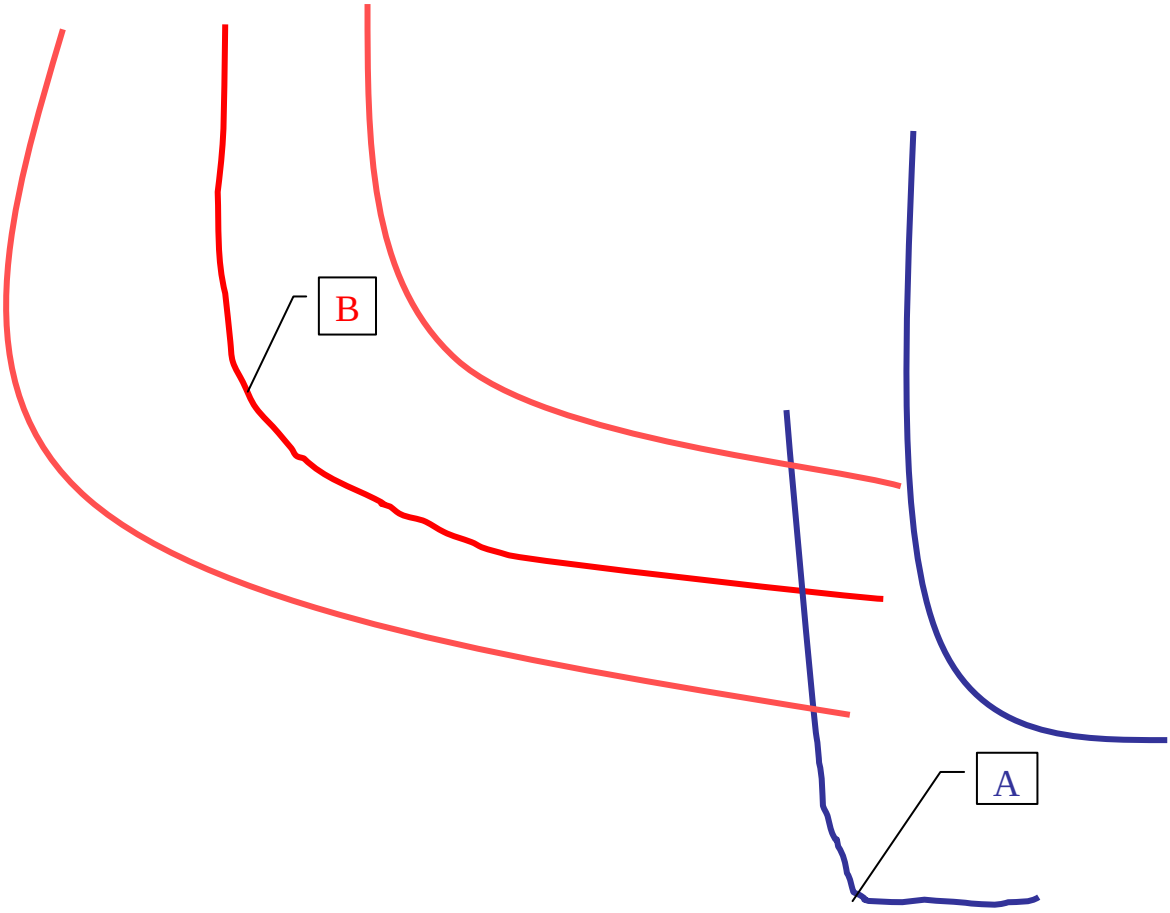
The endowment effect is rather well validated empirically. And it is a special case of a "law of motion" of preferences that I call adaptive preferences. According to this hypothesis of adaptive preferences we no longer assume preferences to be fixed exogenously. Rather, they are endogenously determined. But the way preferences change in answer to the economic environment have a very specific characteristic, which I call adaptiveness. The intuitive meaning of adaptive preferences is the following: individuals have a strong tendency to value their present position or situation higher relative to alternatives than they would, if their present position or situation were a different one. We also may call this preference conservatism: a tendency to stick to where they are. This is quite a universal characteristic of human behaviour. In terms of interpersonal influences on preferences the idea of adaptive preferences corresponds to imitation: in terms of their tastes people imitate each other.

If we want to make the concept of adaptive preferences more precise we need to introduce another concept first: preferences corresponding to some commodity basket x. Assume some arbitrary preferences at the beginning. Assume further that commodity basket x remains the same over time. Then, under the influence of actual consumption x, preferences change and eventually converge to certain preferences, which we may denote by $q(x)$. Then we call $q(x)$ preferences which correspond to x.

Now I define adaptive preferences: They prevail, if the following holds: For any two baskets y and x: if y is preferred over x, given preferences which correspond to x then – a fortiori - y is preferred over x, given preferences which correspond to y.

I do not have the time in this lecture to show you that empirically well established behavioural deviations from homo oeconomicus with fixed preferences all correspond to the hypothesis of adaptive preferences. I will give you a strong reason from the evolution of the human species, why adaptive preferences are a good description of human behaviour. But for this I first have to introduce another concept. It is the concept of an improvement sequence and of an improvement path.

If preferences depend on past consumption we may see a picture like this one



Preferences corresponding to past consumption A may be represented by the blue indifference curves. Preferences corresponding to past consumption B may be represented by the red indifference curves. As I have drawn the two sets of indifference curves they indicate the property of adaptive preferences. Given the choice between A and B the person chooses A, provided past consumption has been A; and the person chooses B, provided past consumption has been B. Is it then appropriate for policy to say: "stay put, wherever you are"? Certainly this would not correspond to the tradition of normative economics. It has always been reform-minded. Even though it generally did not advocate revolutionary changes, it did advocate changes in general arrangements in the hope to improve the welfare of people. After all, economics is a child of the age of enlightenment. Thus, improvement was considered to be possible. As we shall see, it is the very concept of improvement or progress which is closely linked to the concept of adaptive preferences.

In this particular case of the two baskets A and B we can ask the following two questions. First: Although a jump from A to B – given the blue indifference curves – is not an improvement and although a jump from B to A – given the red indifference curves - is not an improvement, is it perhaps possible to move gradually from one point, say A, to the other point, say B, by means of a number of smaller steps each of which is an improvement, thereby exploiting the fact that preferences change along-side during this longer journey? Second: And if that is a possibility, could it be that the reverse improvement journey from B to A is not possible? Could we then – in a certain sense – consider basket B to be superior to basket A?

Let me then introduce the concept of an improvement sequence and of an improvement path. Let A, B, C,… K be a finite set of consumption baskets which have the following properties. For preferences corresponding to A the basket B is preferred over A; for preferences corresponding to B the basket C is preferred over B; and so on. Each basket is preferred over the preceding one with preferences corresponding to the preceding one. Such a sequence I call an improving sequence. If, in addition, the end- basket is different from the starting basket then the improving sequence of baskets is called an improvement path or an improving path.

If an improving sequence is not an improving path, i.e. if the end point of the sequence is the same as the beginning one then our intuition would indicate that the whole walk from A via B, C etc back again to A is not really an improvement. This intuition leads to the Improvement Axiom: starting from the same basket, people prefer an improvement path over a stationary path, provided they believe that any improvement sequence is an improvement path. They do this, we assume, despite the fact that they are aware that along the improving path they may change their preferences. They generally know that their preferences change along this path, but they may not know the precise way the preferences change.

Consider now the following thought experiment. Assume that I have anti-adaptive preferences. Assume that for me the anti-endowment effect holds. I own a piano. I am prepared to sell it for 500 €. I sell it for that price. Now, my preferences change. Due to the anti-endowment effect I now value a piano at 700 €. So I buy back the piano at 700 €. If now somebody gives me 200 € I am back at the starting point. Each step – selling the piano, buying the piano, obtaining 200 € for free – was an improvement. Yet I arrive at the starting point. Thus the whole journey did not turn out to have been an improvement path. The anti-endowment effect thus allows improvement sequences which are not improvement paths.

The core of my theory now is the equivalence between the following two characteristics: 1. improvement sequences always are improvement paths (or, to put it differently: improvement sequences never are circular). 2. Preferences are adaptive. The first characteristic implies the second and the second characteristic implies the first one. This is a mathematical statement which is valid within a certain modelling framework. I don't have the time in this lecture to describe the details of this modelling framework.

This equivalence theorem is the Fundamental Theorem of my work. It has several interesting implications. I want to discuss a few of them in the remaining part of my lecture.

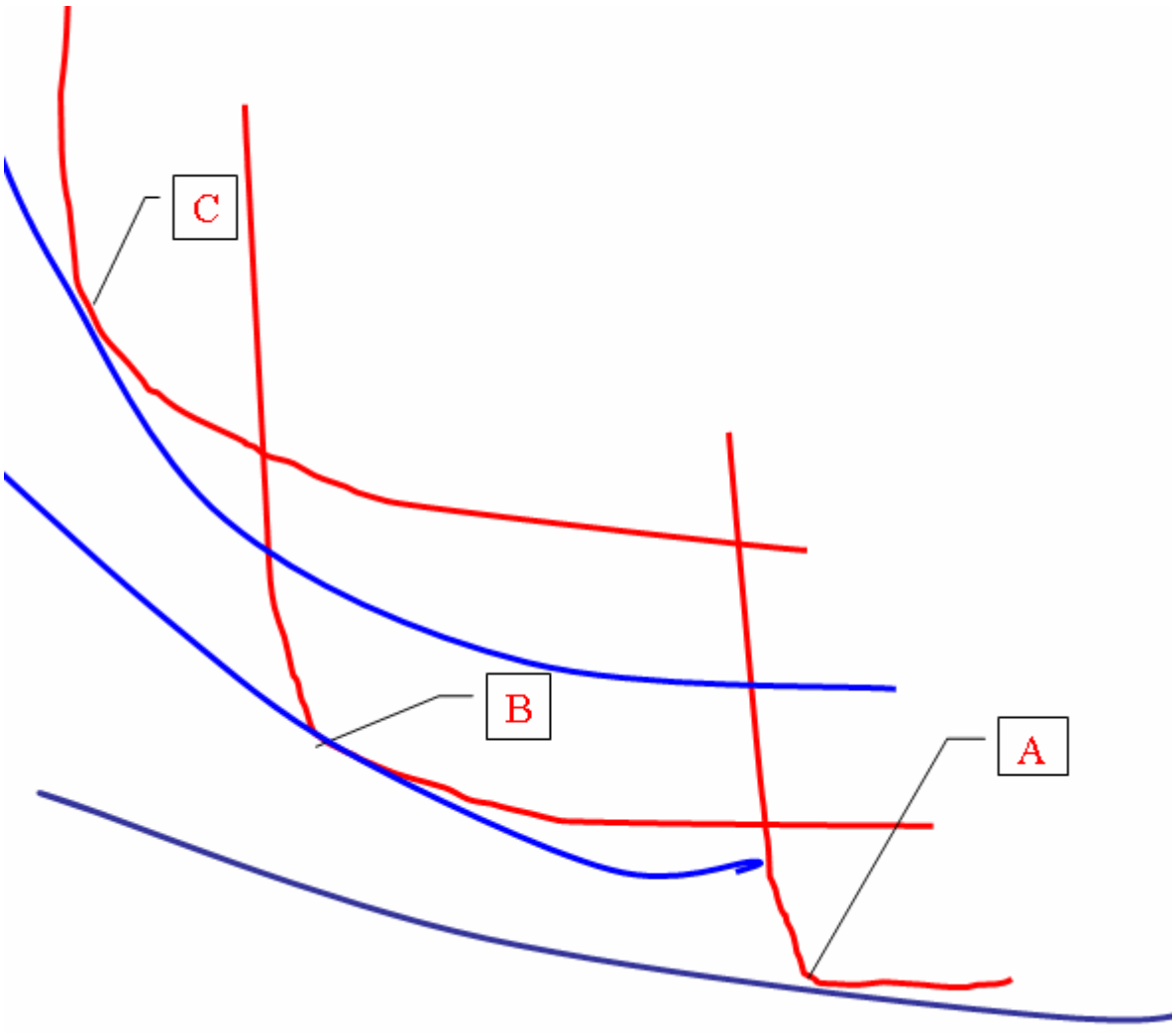
IV Characteristics of the "long run demand function"

Assume, a person is faced with a budget constraint and with prices which remain constant through time from time zero onwards. Before that time the budget constraint was different and prices were different, so that preferences at time zero are not those which correspond to the new budget constraint. Now, that prices have changed we can look at the immediate effect on demand and we can look at the long run demand effect of this change in the budget constraint. The immediate effect is governed by the preferences which prevail at time zero. The long run demand effect is different, because the demand reaction on the price change causes preferences to change which then in turn generates a secondary demand effect, and so on – until demand converges to some commodity basket, which we can call the long run demand corresponding to the given budget constraint.

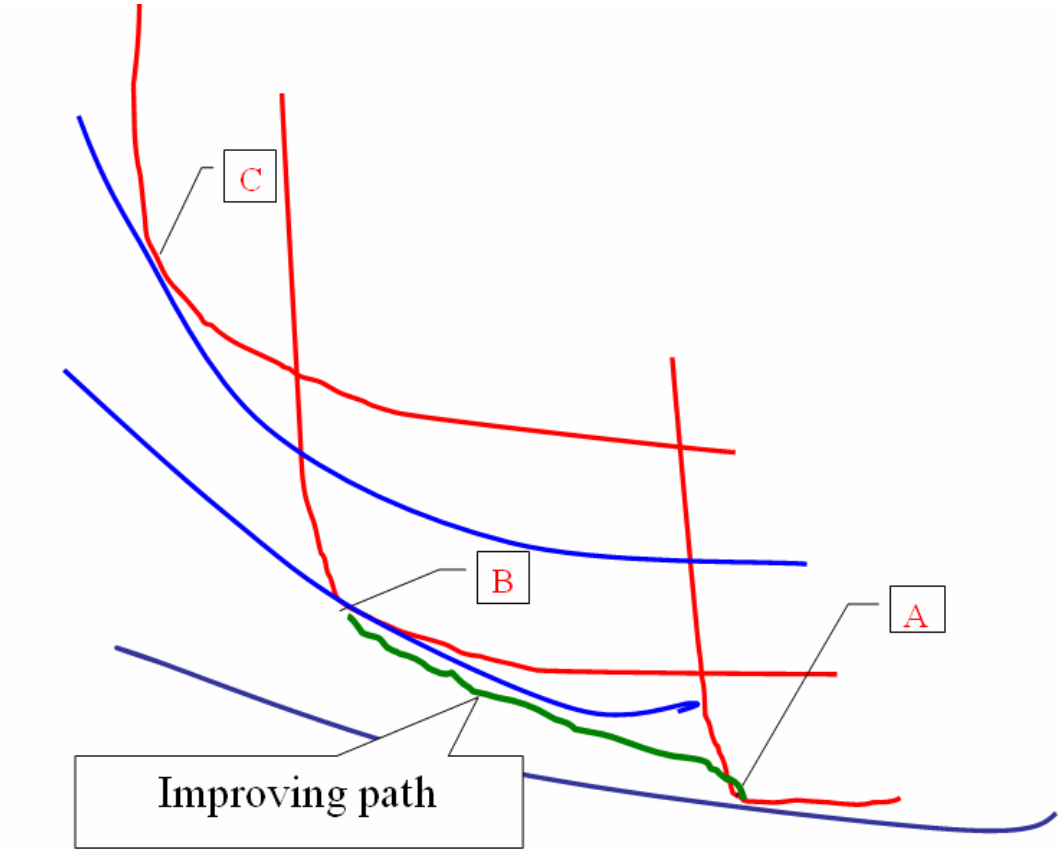
We thus have a long run demand function. What are its properties? Remember that the long run demand effect takes into account the preference changes induced by the change in the budget constraint. Thus the long run demand function does not correspond to any given set of

preferences which could be the preferences of the person whose behaviour we investigate. Therefore, in particular, it is not clear whether the long run demand function satisfies the strong axiom of revealed preference. Now, I can show that within my modelling set-up it is the case that the long run demand function satisfies the strong axiom of revealed preference and thus can be understood as the manifestation of some process of utility maximisation. Thus, in two-dimensional space, we get a picture like the one below. The three red indifference curves represent preferences which correspond to the baskets A, B, C respectively. They are the indifference curves which go through the points to which the respective preferences correspond. The system of blue indifference curves represents the quasi-preferences which correspond to the long run demand function. Because the long run demand function satisfies the strong axiom of revealed preference we do have these quasi-preferences depicted by the blue indifference curves.

But what is the economic meaning of these quasi-preferences? They so far have been formally derived and thus do not have an immediate economic meaning. As a side result of our Fundamental Theorem we can provide an economic meaning: of any pair of two baskets A and B, if B is on a higher "blue" quasi-indifference curve than A, then there exists an improving path which starts at A and which ends at B. By the Improvement Axiom the person prefers an improvement path starting at A over a stationary path A. Thus, in this sense, B can be considered "superior" to A, even if it is the case that an immediate "jump" from A to B would be rejected by the person with preferences corresponding to A.



We thus can modify our picture by depicting an improvement path that starts at A and ends at B.



We thus come back to an economic ordering of all baskets which is independent of the respective starting point. It looks like an exogenously given preferences ordering. And thus it looks like the picture of a preference ordering à la homo oeconomicus. Using the Improvement Axiom we can "widen" the concept of preference: Basket B, which can be reached from basket A by means of an improvement path is "preferred" in a wider sense over basket A, provided that improvement sequences never are circular.

V The "survival value" of adaptive preferences.

The Fundamental Theorem (equivalence of adaptive preferences and the non-circularity of improvement sequences) provides an evolutionary reason for the prevalence of adaptive rather than anti-adaptive preferences. Remember my piano example with anti-adaptive preferences. Not only does this sequence of events shed some light on my limited degree of rationality. It also implies that others have made a profit at my expense. Someone has pocketed the € 200.—which I lost in selling and then buying again my piano. If preferences generally were anti-adaptive we would expect that a class of arbitrageurs arises who make a living out of exploiting anti- adaptiveness of preferences of the general public.

We would not expect this to be a stable state of affairs. Anti-adaptive preferences are unlikely to survive. We would expect at least two mechanisms by which anti-adaptive preferences will be extinguished. One is individual and social learning. A person experiencing downward spiralling "improvement sequences" again and again eventually understands that, in some sense, her behaviour is not rational. She would expect to be a happier person if she changed

her behaviour. From the outside, from the point of view of normative economics this change in behaviour due to learning is considered a change in preferences. In our language, there is a tendency for a change in the "law of motion" of preferences in the direction of adaptive preferences.

The other, much slower mechanism that extinguishes anti-adaptive preferences is evolution in the biological sense of that word. Through the history of mankind up until, but excluding very modern times, there was a competition for survival similar to the Darwinian principle of the "survival of the fittest". High birth rates and high infant and adult mortality due to under-nourishment, due to infectious diseases, due to violence and civil war were the rule rather than the exception. The "laws of motion" of preferences must have been formed very much by this competition for survival. In this competition among different laws of motion of preferences, anti-adaptive preferences must have been rather unfit for promoting the survival of its human bearers. Humans equipped with anti-adaptive preferences were potential prey of clever exploiters. Their lot –other things equal – must have been much worse than that of people with adaptive preferences. Their and their offspring's chances of survival must have been much inferior to those people with adaptive preferences.

VI "Quasi-Rationality" of adaptive preferences.

What about "rationality" in the modern world? The homo oeconomicus model assumes full rationality of human action. The criticism raised against this model insists on taking account of empirical research and generally psychological insights which contradict this full rationality assumption. It is obvious that it would be a mistake to switch to an assumption of full irrationality. It would be impossible even to define what is meant by this. Moreover, whatever the cognitive and emotional constraints of human decision making are, we must acknowledge the fact that people want to be rational. Nobody likes to be seen by others as a fool. Most people do not like to be seen by others as someone who is lacking willpower. Thus, rationality and the ability to act according to one's insights are goals of human beings. In a sense, there is a "meta-preference" for rationality and for the ability to act reasonably.

Moreover implicit in modern social theory is an axiom which I like to call the "democratic axiom". Modern social philosophy by and large assumes that some kind of social "self-government", some kind of democracy is possible. And the historical experience of the last two hundred years tells us that democracy can be a success. But this "democratic axiom" only makes sense, if one assumes that people, that citizens have a certain minimum of rationality. If there are sometimes doubts that certain forms of democracy lead to a good end the answer of "democrats" i.e. the answer of most of us, is not that democracy should be abandoned and should be replaced by an authoritarian system. Rather we tend to answer: reform of that particular State is required which enables those people to act more rationally in their common interest. One recipe then proposed is more and better education. What one then asks for is an enhancement or development of rationality.

We would not entrust our affairs to our newly born or very young children. We would not consider them to be sufficiently rational to conduct our affairs. People are only allowed to act fully on their own account after their 18^{th} birthday. It is consensus that children ought to be educated towards greater rationality of action which in the modern world requires a certain amount of basic intellectual training. Education then can be seen as an unfolding of the ability to act rationally. People on average have the potential for a degree of rationality which

enables them to lead a satisfactory life and which enables them to become socially productive citizens and economic agents.

I thus view "rationality" not so much as a state, which human beings lack or enjoy, but as a process of being unfolded. The degree of success of such unfolding depends on the individual himself, but also to a large extent on his social environment. Human beings are not so much rational or irrational; rather they tend to grow into greater rationality – or otherwise forego such growth, for whatever reasons. Most individuals aspire to increase rationality. To put it differently: people are virtually rational. The model of homo oeconomicus then is the idealised model of behaviour to which people want to move.

The model of economic man then is a projection from actually observed behaviour onto a screen which is of substantially lower dimension, but which nevertheless informs the economist of tendencies or directions prevailing in the economy, which is a reference point for the process of unfolding rationality. One important characteristic for this unfolding process is what we have captured in the Fundamental Theorem. The long run demand function after the full process of preference development has come to its convergence point and after having exhausted all learning potential is characterised by homo oeconomicus properties. For a given budget constraint the long run demand basket is the "best" basket in the sense that it is the only basket among the feasible baskets which has the property that there is no other feasible basket which can be reached from the long run demand basket by means of an improvement path.

In this context it is worth pointing out the following property of improvement paths. Consider the textbook choice situation of a given budget constraint. At the beginning we observe the person with preferences corresponding to the initial basket x^0. If the budget and market prices do not change the consumer will stick to the initial basket, and we have a stationary path. Assume now that the budget "improves", for example, because certain prices decline once and for all, so that we now are in a new but again stationary budget situation. The new basket x^1 is an improvement, because, obviously, the consumer could have bought the old basket x^0, as some prices have declined. Thus, the move from x^0 to x^1 is the first step of an improvement path. But change continues, despite the fact that the budget remains the same. Once preferences correspond to x^1 the consumer now selects x^2. Given that she could have chosen x^1 we know that the move to x^2 from x^1 is the second step of an improvement path. And so on: we thus obtain two different sections of the improvement path: in the first section a new and better position of the consumer occurs. Her choice set has increased. In the second section the choice set remains the same but the consumer is in a process of learning how best to choose in the new choice set environment. And due to this learning process the person continues to improve her situation, despite the fact that the choice set remains the same. The rationality of choice within the new choice set unfolds itself.

In real life the two sections of improvement do of course overlap: while the person still "learns" rationality for a recent change in her choice set the choice set changes again, so that the person never comes close to the fully rational limit point of a given choice set. The unfolding of rationality for a given situation always must be modified, before it is completely unfolded. Intensive "learning" of one's preferences remains a need throughout one's life. Nevertheless, with adaptive preferences, the direction of change always aims at higher rationality, and thus the point of full rationality, i.e the homo oeconomicus point, remains an important benchmark.

It is interesting to remark that in a dynamic, growing, ever changing economy there is a large distance from the actual choice to the hypothetical end-point of choice for the presently prevailing constraints of choice. Thus, in a sense, the choice has a large irrationality component. Contrast this with an economy which has no growth potential, an economy, where constraints remain the same for a long time. Here the "rationality learning" process has enough time to come close to the long run demand point, which among the feasible points is the "best" one in the sense that there is no other feasible point which can be reached from that long run demand point by means of an improvement path. Thus, we may interpret the "irrationality component" as a by-product of a dynamic, growing economy. Most of us, I am sure will opt for a dynamic, growing economy with a larger "irrationality component" as against a stagnant economy with a small "irrationality component".

VII The chores of education

Parents educating their children, teachers educating other people's children know the chores, joys and disappointments of this activity. An important part of such education is to enable children to learn by imitation. Educators have to provide a behavioural model in their own behaviour, which children can imitate consciously and subconsciously. Also important in the process of education is "habit formation". If you want your child to like reading books when grown up then you try to induce him or her to read books when still a child. If you want your child to be honest as an adult you try to educate her or him to value honesty while still being a child.

In the modern world we generally believe that educational efforts are productive, are necessary for a future productive and happy life of the child when he or she is grown up. We adhere to a philosophy of education.

Imagine now that the child's preferences are anti-adaptive. This would mean that inducing the child to read books will be counterproductive for a habit of book reading when grown up. It would mean that the child does the opposite of imitation. Thus good behaviour of the educator will be counterproductive for the goal of good behaviour of the child. Can you imagine how education works in a world of anti-adaptive preferences? I do not think that it could work at all.

Thus, our philosophy of education presupposes that preferences of those to be educated are adaptive.

VIII Cost benefit analysis and decentralised decision Making

Welfare economics has a side in "high theory" with the First and Second Fundamental Theorem of Welfare Economics (Equivalence of Parteo- Optimality and Walras-Arrow-Debreu- General Equilibrium). But it also has a very practical side with cost-benefit analysis. This practical side is very much linked to the concept of what I like to call "incremental efficiency" – or Kaldor- Hicks- Scitovsky efficiency. The basic usefulness of this cost- benefit approach relies on partial equilibrium analysis – as opposed to general equilibrium analysis.

Cost-benefit analysis is used all the time in policy making, but also in private decisions by individuals or firms or associations. It is a method, which intellectually isolates certain parts of the world from the rest of the world and then concentrates on these parts, which appear to be relevant for the issue at hand. Parliament has to decide whether to change a certain law. A firm has to decide whether to make a certain investment in order to enlarge its production capacity. A Schumpeterian entrepreneur has to decide whether to introduce an innovation in the market. An individual has to decide whether to accept a certain job offer or not. The "rest

of the world" generally is represented by the money involved in the particular decision. It is "money" and market prices which make sure that the wider context of the particular decision is taken account of[5]. To the extent that this kind of representation of the interdependence of everything with everything is appropriate, the "money form" of this representation makes decision taking vastly simpler than it would otherwise be. This vast simplification is the prerequisite for a world in which a very large number of decisions can take place simultaneously. Without such simplification the number of feasible simultaneous decisions would have to be very much lower. Society could not have obtained its present degree of complexity and could not draw on its present high degree of the division of labour[6]. Without the money form of representation of the wider world the status quo bias in the form of "non-decision" would be absolutely dominant.

Economists have investigated the conditions under which it is appropriate to do this partial equilibrium exercise which is involved in any cost-benefit analysis. The general presumption here is the all-round existence of reasonably competitive markets. Without going into the details of these analyses it is so far clear that they all rely on the assumption that members of the economy are people who maximise an ordinal utility function which is exogenously given.

In my work I have investigated conditions under which the foundations of cost-benefit analysis can be carried over to the case of adaptive preferences. I do not have the time to go into this in detail. The criterion that I use for a successful carry over is the following. Assume that a project will be considered worth doing with the "ex-ante-preferences", will it then also be considered worth of having been done with the "ex-post-preferences". I have derived sufficient conditions concerning project characteristics under which this "ex-ante-ex-post" test provides a positive answer. These sufficient conditions are reasonably general so as to cover a large proportion of cost benefit projects. Further research, I am sure, will widen the class of projects that pass the "ex-ante-ex-post" test.

Note that the proposed "ex-ante-ex-post" test is asymmetric. We consider projects which are accepted by the ex-ante test and then ask the question whether they also would pass the ex-post test. We could have asked: which projects that would pass the ex-post test also pass the ex-ante test? Here it is quite likely that a hypothetical project that ex- post would be considered to have been worthwhile will not be implemented, because it is not considered worthwhile with ex-ante preferences. Adaptive preferences introduce a status quo bias into social decision making.

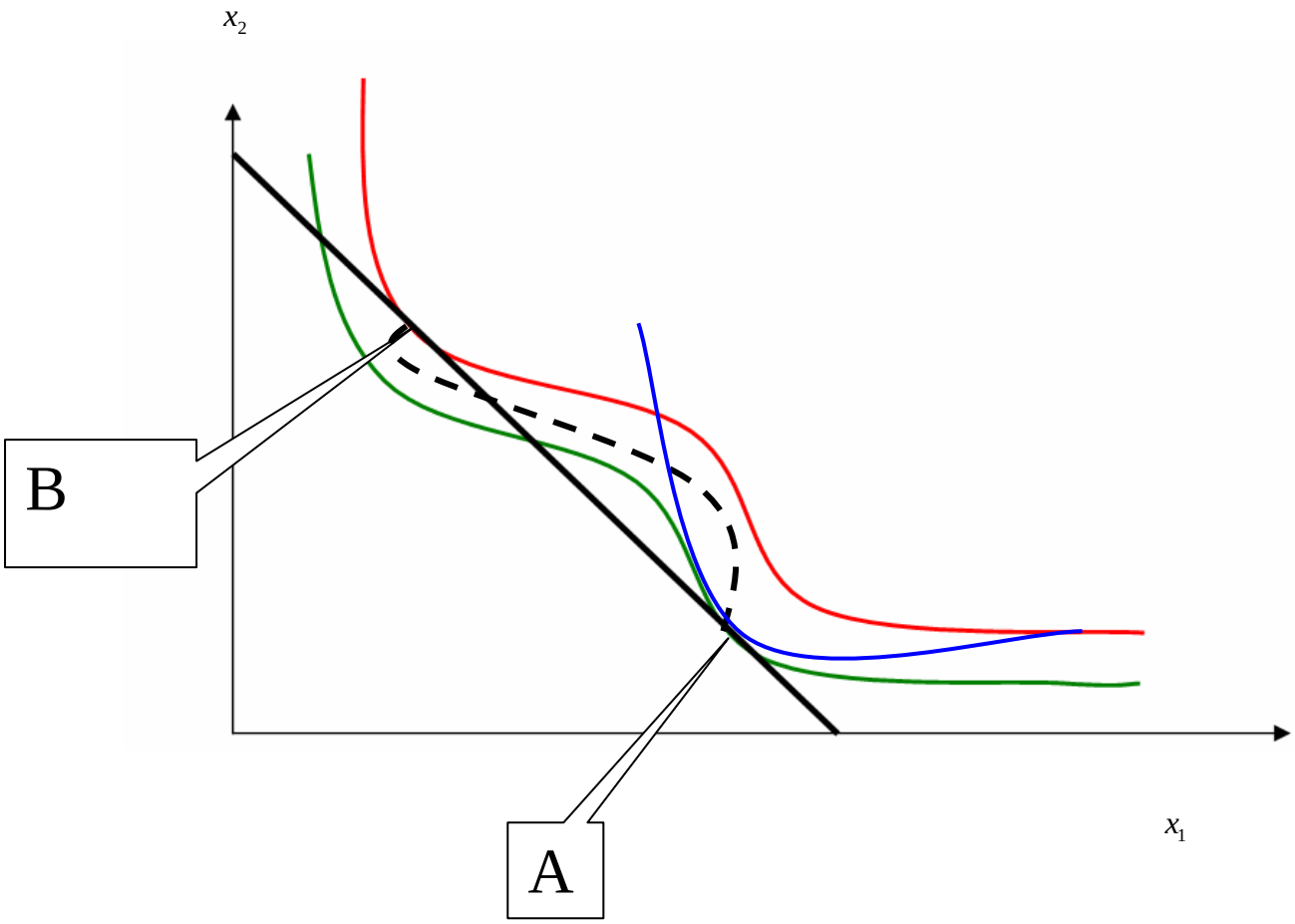
IX Psychic provincialism: The impossibility of global optimisation.

What may happen is that the quasi-indifference curves look like in the following picture. This is the case, if the long run demand for given constraints depends on the initial preferences.

The red and the green curve are two distinct quasi-indifference curves. The blue curve is the indifference curve going through A with preferences corresponding to A. We thus may have

[5] Hayek, F.A. von, The Use of Knowledge in Society, AER 1945

[6] "The greatest improvement in the productive powers of labour, and the greater part of the skill, dexterity, and judgement with which it is anywhere directed, or applied, seem to have been the effects of the division of labour." Adam Smith, Wealth of Nations, Book 1, Chapter 1, first sentence.



two equilibrium points A and B. By our Fundamental Theorem there exists then an improvement path from A to B because B is on a higher quasi-indifference curve. But the improvement path – the dotted black line - will initially go into an area which cannot be reached by the budget, i.e. initially it goes above the black straight line in the graph.

A is a stable point, yet within the budget constraint there are other points, like B, which are "better" than A in the sense that they could be reached from A by an improving path. Note that this, in a sense, suboptimal stable solution is not a matter of lacking credit for borrowing to go beyond the budget temporarily. It is a problem of a lacking will to leave point A with preferences corresponding to A. The person we look at does not really think very much about baskets like B, which are far away from A. She has no reason to do problem solving for problems of which she is not aware.

What about paternalism? We imagine that an authority with superior knowledge concerning the structure of the quasi- indifference curves might induce the person to borrow money in order to move in small improving steps from A to a point sufficiently below B so that in the long run the loan can be repaid. We might think of a doctor advising the patient to change her life to become healthier. There are many other examples of this kind. But there obviously is no guarantee that such advice will be sought, and, if sought, will be observed. Moreover, if the true world is more than two-dimensional and if there are many sub-optimal equilibrium

baskets it may also be quite difficult to know about appropriate movements away from the equilibrium to another one.

The basic message of this section is this: in a world of adaptive preferences there is no guarantee for global optimisation. Adaptive preferences can also be seen as a kind of psychic provincialism. People don't optimise globally. They look around in the neighbourhood of their present state whether they can find improvements. If not, they stay where they are; they stay in their local optimum.

This structure of decision making potentially opens up the potential for improvement by the help of others. It may be another framework for a kind of "libertarian paternalism" advocated by Sunstein and Thaler and by others. In a sense a local (but not global) optimum which the person refuses to leave indicates some limit of rationality. Theoretically it should be possible for the individual to improve herself along an improvement path by "investing" into a change by means of resources beyond the normal budget. But among many, perhaps most people such willingness to change by investment may not be there. Moreover, except for extreme cases, there are limits for the government or generally the social environment to assist in such a change operation. One of the reasons for these limits is the topic of the next section.

X Collective conservatism or collective provincialism.

It is more by historical accident than by superior wisdom how health care financing has developed in different countries. I have studied a bit the systems in Germany, in the United Kingdom and in Switzerland. They have substantial differences which I do not describe here in detail. The UK health care system is financed out of the government budget. The German system (GKV) is financed by a special tax on labour income earmarked for the health care system. The Swiss system is financed by insurance premiums paid by the insured persons with government subsidies provided to low income people for their payment of the insurance premium.

If you ask the electorate of each of the three countries you find the following. Most people have a lot to complain about their system. Nobody seems to be happy about it. But asked whether to change from their own system to one of those of the two other countries they will vote with a very large majority to stick to their system. It is out of the question that the different preferences in the three countries can be explained by the assumption of fixed preferences. The divergent opinions in the three countries are a clear demonstration of adaptive preferences. British people prefer the National Health System over the German and the Swiss system, because it is the system they have. The Germans prefer their GKV system over the British or the Swiss system, because it is the system they have. The Swiss prefer their partly government subsidised insurance premium system, because it is the system they have.

I propose the conjecture that these three local equilibria are on different quasi-indifference curves. Theoretically it should be possible to find an improvement path that goes from one of the systems to another one and that – in the long run – the improvement path and the new equilibrium do not cost more than does staying at the old system. But, a major reason these established systems are so stable and cannot easily be transformed into one of the other systems is the fact that the improvement path initially requires a greater budget. Health system reform quite generally is under the rule that the reform should reduce rather than raise costs. The health system is always under a particular cost pressure, because the patients, who do not pay up themselves for its services have little incentive to take the initiative for cost reductions. The politics of health care financing thus operates under the constraint that changes of its

rules must be cost reducing. Given the strongly adaptive preferences this rules out gradual improving changes which add up to some fundamental transition; say, from the British to the German or to the Swiss system.

This insight can be generalised. If in a system of rules, if in an institutional set-up a rule change requires a majority of votes adaptive preferences lead to a high degree of rule conservatism. Provided an institution has reached a local equilibrium it will be very difficult to obtain fundamental change by majority vote. Here it is important to keep in mind that collective decisions universally have the property that the default option is the continuance of the rules as they prevail at any given time. A law remains the same as long as it is not explicitly changed by majority vote.

Apart from rules and laws the stability of other phenomena can also be explained by adaptive preferences. One example is language. Given a choice, people tend to have a strong preference to use their mother tongue. This in conjunction with the greater opportunity to talk and listen if you use the same language as your social environment stabilises a language that is spoken in some region or country.

Many mores and habits are stable due to the fact that once they are established people have a preference to keep them rather than to change them. The high stability of religions in those countries where they are established is a leading example.

Generally cultural diversity which is maintained over all of human history is in all likelihood a product of adaptive preferences. Once certain cultural traits are established in a society they will be maintained even if their "survival value" for the population is lower than certain alternatives. This then can be explained by adaptive preferences.

XI The market system and progress.

In my introductory remarks I referred to Walter Eucken's theory of the economic order. In analysing an economic system he distinguished between data and variables. In describing the market economy (he called it: "Verkehrswirtschaft") the "Datenkranz" (the wreath of data) included the preferences and the available technology. This is of course similar to the General Equilibrium analysis in the tradition of Walras (As a student Eucken went to Lausanne to attend the lectures given by Walras. He reported that there were not even a handful of people listening to what, according to Schumpeter, the most important economist of all times had to say[7]). Now, using the theory of adaptive preferences as developed in this lecture, preferences are no longer given, but they are endogenous. And, of course, in modern economic theory technology is no longer given, but also endogenous. So what is then exogenous? What are the Archimedian points to start our analysis? Of course, the hypothesis of adaptive preferences itself may be called exogenous. Similarly there may be certain regularities how technology develops. Once we consider preferences as being endogenous, another important "given" comes to the forefront: the preferences which prevail at the beginning of our analysis, the available technology at time zero. And these initial conditions may be quite important for the further history of the economy. "Path dependence", as we call this nowadays.

Here I only have time to stress a single point concerning the productive function of a market system. It is, if you wish, quite "Schumpeterian". As we have seen, adaptive preferences are important, and indeed are a realistic description of human behaviour, because they prevent circular improvement sequences. Thus, a stable world of progress and improvement has the

[7] Double oral communication: from Eucken to Wilhelm Krelle, his student, and from Wilhelm Krelle to me.

prerequisite that preferences are adaptive. But adaptive preferences are a kind of preference conservatism. Decisions taken in the public domain, taken by majority vote, will reflect this preference conservatism. If most of social and economic life is politicised, then we must expect stagnation due to the preference conservatism. On the other hand, in a market system, change can occur without majority vote. Innovations can be brought to the market, even innovations, which in a vote *ex ante* would not get a majority. The Schumpeterian innovator, or should we simply say, the expert in a particular field, is allowed to introduce the innovation into the market without the approval of the potential customers and without a majority vote of the citizens. Once the innovation is on the market, due to adaptive preferences, people change their mind and accept the new product, thereby making the innovation profitable and sustainable. Thus, the market system, which allows the decentralisation of decisions for change and progress, is essential for a society which wants improvement and which is characterised by adaptive preferences.

XII Summing Up

My thinking on these matters has led me to conclude the following: Normative individualism remains possible with endogenously changing preferences, as long as preferences are adaptive. Adaptive preferences correspond to observed human behaviour and have a high survival value. Adaptive preferences imply preference conservatism. This implies collective conservatism. The market economy and Schumpeterian entrepreneurship provide change and progress overcoming collective conservatism, again due to adaptive preferences. The theory of decentralised decision making has to be rewritten to accommodate the fact that preferences are adaptive, rather than fixed.