



Extending Austrian Economics toward Psychology: Rules in Loan Decisions*

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Abstract. The proponents of the Austrian school of economics, like economists in general, often take a negative view of incorporating psychological assumptions in the main body of economic theory. Still they regularly make use of such assumptions while applying the theory. The paper argues for a cautious use of the findings of psychology from the very start of economic reasoning. The examples employed to illustrate the argument are from the loan decision process of a banker.

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1. Introduction

Much to the annoyance of economists, the phenomena of the social order they have set out to understand are immensely complex and only painfully apt to scientific explanation. As one response to the difficulties they face in their work, economists have sought help from the other sciences of human action, with attempts to extend the traditional modes of their explanation toward new territories. An example of the expansive or even imperialist endeavors is the adoption of ideas originally developed within psychology into the body of economic inquiry.

Economists have not always been looking with favor the breaking in of psychological influences, and many are still completely indifferent to the whole subject. The interest in the economics of psychology seems to be growing, however, and for example Earl (1990a:750) speaks in his survey paper of “a burgeoning of research integrating constructs from psychology and economics.” The Austrian school of economics is an example of a group of economists among whom the attitude toward psychology varies all the way from straight hostility to true enthusiasm. It is somewhat ironical that of the two most prominent Austrian scholars, Ludwig von Mises and F. A. Hayek, the former excludes psychology strictly from the purview of economics (1962), and the latter sets forth an elaborate psychological theory in one of his major works (1952a).

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My purpose in this paper is to reconsider the role of psychology in Austrian economics. I aim to show concretely by means of a theory of human decision making, firmly founded on the subjectivism of the Austrian school, that we are able to importantly deepen Austrian insights into social reality by taking cautious steps in the direction of psychological inquiry. The treatment draws heavily on ideas that Hayek develops in *The Sensory Order* (1952a), a book on theoretical psychology that in an interview twenty-five years later he still believes to be “one of my more important contributions to knowledge” (Kresge and Wenar 1994:138). Use is also made of the findings of other authors in the economics of psychology who, as we will see, often share Hayek’s broad conclusions about the nature of human cognition. The paper provides at the same time a perspective on the decision-making process of bank lending which is used throughout as an example for illustrating the theory.

According to Mises (1966:32, 57), economics divides into theory, or “praxeology” as he calls it, and history of which the former “aims at knowledge valid for all instances in which the conditions exactly correspond to those implied in its assumptions and inferences”, and the latter “can never produce results which must be accepted by all men.” Praxeology is capable of apodictic certainty because it is based on the axiom of human action that is “proof against any criticisms and objections” and, contrary to history, “it takes the ultimate ends chosen by acting man as data” (Mises 1966:67, 21). I argue in Section 2 that the borderline between the two fields of knowledge is far too complicated to be drawn on simple logical grounds alone without experience of what will be the best for the practice of scientific progress. Since almost any competent economist seems to agree with some economic explanations that involve inquiries into the contents rather than merely the logic of human action, belonging therefore to the realm of economic history, we have grounds for considering an inclusion of such explanations in economic theory. The grounds sustain even though, as Mises (1957:313) is careful to remind, the explanations have never “the significance of what is called in the natural sciences an experimentally established fact.” An analysis of why people act in particular ways presupposes at least some acquaintance with psychology, and my suggestion thus means an increased use of the findings from psychological research in theory building. The argument of Section 3 is that the same method of introspection by which an economist finds out the truth of the action axiom is of vital importance also when he extends the psychological inquiry into the human mind beyond the modest realm of pure praxeology.

In neoclassical economics, human action is conceived as optimization in which the actor chooses in any decision situation from a given set of alternatives the one that she knows to bring the best consequences from the point of view of her values. Section 4 aims to explain that human beings are in reality often ignorant of both the alternatives, consequences and values while making their decisions, and they are incapable of the kind of optimizing behavior described by mainstream economists. I pay special attention to our ignorance of the future which we know to be a fact from introspection and which has a fundamental effect on the way we may hope to gain an understanding of real human action.

According to the theory to be set forth in this paper, human beings strive to obtain information of the future and to make good-quality choices by following rules of behavior that have proved to produce beneficial outcomes in the past. The rules are unintended results of a complex classification process of the mind in which an individual compares his

perceptions of events around him to classes of earlier perceptions of similar kinds in his memory and seeks orientation from the past experiences by repeating the most successful lines of action. These insights into the psychology of the human mind, central to the argument of my paper, are the subject of Section 5.

I illustrate my ideas in Section 6, like throughout the whole paper, by examples taken from the loan decision process of a banker. One reason for this choice is that the process follows in most cases a very predictable pattern and lends itself to an analysis even without too detailed knowledge of particulars (Rodgers and Housel 1987:67). In order to abstract from organizational and legal issues irrelevant for the main purpose of the paper, I assume a self-employed banker, running a small financial intermediary in the free market, who has to make decisions largely on his own while talking with the customers, carrying out credit evaluations, drawing up new loan contracts, reviewing contracts in force, and doing other things. The main message of the concluding section is that Austrian economics has much to win but hardly anything to lose by incorporating into its theoretical body more elements from psychology, only touched on the surface in this paper.

2. The Use of Psychology in Economic Theory and History

A common means to enhance knowledge in natural sciences is to make controlled experiments. For example, a medical researcher may try to find out the effectiveness of a new drug by dividing his test animals into a test group and a control group, the members of the former differing from those of the latter as far as possible only in their intake of the drug under examination. The aim of economics is according to the proponents of the Austrian school to study the intended and, in particular, unintended consequences of the purposeful actions of human beings. In so far as we accept this fixing of disciplinary boundaries, we are not even in theory able to conduct truly controlled experiments in economics (Mises 1966:31, Hayek 1948:126). The testing of the simplest of all economic theorems, such as the tendency of the demand for bank loans to increase as a response to a falling interest rate, is doomed to fail because even under the most sophisticated laboratory conditions the test subjects, the human beings, can always learn new things, become alert to new interpretations of old things, or simply change their mind in the course of the experiment.

Without access to the empirical methods of natural sciences, economists have been forced to make experiments in their own mind. An established procedure in both the Austrian and other schools of economics is to *assume* all the things constant which ought not to change but are either difficult or downright impossible to control in practice. Through a gradual accumulation of “a series of social theories” by means of such mental experiments, we may hope to eventually attain an overall picture of the economic order even though each theory “opens up for us, to be sure, only the understanding of a special side of the phenomena of human activity” (Menger 1883:62). The examples of Elster (1999:19) tellingly indicate how opposite predictions the theories or “mechanisms” can provide of the effects of a causal factor, leaving the net effect ambiguous and beyond the reach of scientific judgment.

Hardly anyone denies that the ultimate end of economics is to explain phenomena taking place in the real world. An economist may be asked to explain, for example, why the volume of bank lending in a specific country at a given point of time grows faster than previously,

and what are the likely social consequences of such a credit expansion. While the deduction of single theories is an enterprise resembling the work of natural scientists, the application of those theories to practical cases is more art than science and presupposes great intuitive skills.

There does not exist any prespecified recipe of how to combine in any real situation the diffuse ideas scattered in the myriad economic models or theories. The most an economist may attempt to accomplish under such awkward conditions is to suggest an interpretation of the case at hand on the strength of his best experience and to submit it to a discussion among his peers (Addleson 1995:21). The proposals for explanations of observed phenomena apply only in the given circumstances of time and place. We might call them economic history in contrast to economic theory that has universal validity within the bounds of its assumptions.

Mises is one of the members of the Austrian school known for drawing a very tight line between economic theory and history. The body of knowledge he includes in economic theory or praxeology builds upon assumptions of which one, the self-evident action axiom, is always there and the others, the subsidiary assumptions, are made according to the needs of each individual inquiry. While merely asserting that human beings act purposefully, the action axiom is alone insufficient to tell us why individuals pursue particular ends in a given situation or what are the social consequences of such conduct. For that farther-going purpose we need economic history which in the words of Mises (1962:43) deals with “what was the meaning the actors attached to the situation in which they found themselves, what was the meaning of their reaction, and finally, what was the result of these actions”.

Let us return for a moment to the example of credit expansion. The economist knows in virtue of economic theory that one possible explanation for the observed growth in the volume of bank lending is the decision of the government to remove interest rate regulation. If the loan market has indeed been liberated, the borrowers are now free to bid up interest rates in their quest of credit and, by thus affecting the incentives of depositors, they may succeed in producing as an unintended result an increased volume of financial intermediation. The economic theorist does not know this for sure because the subsidiary assumptions indispensable for the logical reasoning do not necessarily hold good outside the imaginary world of his theories. The effect of the deregulation on bank lending depends on, or can even be offset by, other simultaneous changes, such as the lenders anticipating a recession. In order to give an explanation for, or to understand, a real economic phenomenon, the economist needs detailed knowledge of the contents, and not only of the logic, of human action, just like the historian does while explaining more remote events of the past.

The rigid dichotomy of Mises and his followers between theory and history has proved to stand up poorly against the evolutionary forces of economic thought. The distinction is difficult to make in practice, and hardly any Austrians have been enthusiastic to follow it in their actual research work. The experience of Austrian economics strongly suggests that the decision to separate theory from history is not something we can make prior to scientific discovery, but it is rather one of the unintended products of such a learning process. Just as the Austrians explain by their theories the society as a device of open-ended evolution, they ought to see the theories themselves subject to the same kind of dynamic forces.

The unintended overall consequences of removing interest rate regulation are far too complex, as already suggested, to be inquired into by the experimental method. In contrast

to such social phenomena, the dispositions prevailing in individual human behavior can be, and have been, successfully studied in that way in economics. For example, Isaac and Plott (1981:457) report on an experiment where removing a binding price ceiling in a laboratory auction market made the subjects choose at first too high prices in relation to the equilibrium. They do not provide a theoretical explanation for the observed regularity but certainly raise doubts about the standard theory of interest rates and other prices.

Mises expresses in plain terms his aversion toward experimental psychology as an auxiliary of economic theory. According to him, the experimental method “can establish nothing more than the occurrence of an historical incident”, and “there is no hope of achieving knowledge of a regularity in the phenomena by this method” (Mises 1933:11). An explanation for this firm position is obviously the desire to insulate economic theory from attacks motivated by ideology, ignorance or other similar causes, and to arrange for a kind of a haven for knowledge we can absolutely rely upon.

The widening of the content of theory I suggest in this paper does not imply as radical a methodological move as one might think to begin with. Also praxeology is basically dependent on the knowledge we have of psychology. The fact that the ends of human beings are taken in praxeological reasoning as ultimate givens, lying outside further analysis by pure economics, may be to blame for the false idea that it has nothing at all to do with psychology. However, since praxeology explains all social phenomena in terms of human ends, it must assume that there are such ends in the first place, individuals are able to pursue them, and praxeologists have a mind capable of understanding the human efforts. All economics in this line of reasoning “applied” to a greater or lesser extent.

The issue has never been whether economic theory ought to be based on psychology or not, but rather how far it is advisable to go toward an analysis of the mind. The advocates of praxeology insist that economics should take a stand in psychology “on one point, and on one point alone”, that mentioned above, and “on all other questions” economics and psychology are “distinct and separate disciplines” (Rothbard 1976:31–32). The view is evident, for example, in the claim of Mises (1966:123), succeeding his treatment of the corollaries of the law of marginal utility, that economics need not “resort to psychological reasoning and arguments for proving them.” Hayek (1952b:39) follows, despite of his interest in psychology elsewhere, by maintaining that to explain conscious action is not an aim of economics and, “if it can be done at all, is a different task, the task of psychology.” A social science like economics aims to explain the results of action, and thence, “*not the psychological causes of human decisions, but their logical consequences form the subject-matter of the analytical social sciences*” (Lachmann 1950:173). Also Israel M. Kirzner is known for a preference for keeping a distance to psychology in pure economics (Runde 1988:112–114). While discussing the research on the psychological aspects of entrepreneurship, he argues that “applied entrepreneurial theorists should look to this research with considerable interest” and, whereas for some purposes drawing attention to it is of value, “for other purposes such emphasis is not required” (Kirzner 1985:26, 64).

This paper amounts to a shaking of the typical Austrian view of psychology and a proposing of a mediating position more up to the requirements of practical economic research. Witt (1989:409) advances a similar idea on the ground of getting rid of the “sterile logic” of praxeology, “incapable of explaining any empirically observed economic behaviour.”

The proposal should not be unthinkable to the Austrians whose misgivings are according to Butos (1997b:234) about “the positivistic and behaviouristic psychological theories” distinct from the Hayekian theory examined in the following. My attempt to slightly redefine the confines of Austrian economic theory brings with it the need of a rigorous study of human action by means developed in scientific psychology. An advantage of such an augmentation of economic theory is that the inquiries into the human mind, in any case part of any serious economic analysis, become then objects of systematic professional treatment instead of casual exercises by dilettantes. The psychological approach has a place to speak for itself in a later section where we look into the theory of business cycles, advancing in the spirit of Hayek (1948:45) empirical and refutable propositions about “what happens in the real world”.

3. The Vital Role of Introspection

When economists make a move to absorb psychological insights into their discipline, the obvious thing to do first is to make use of the knowledge they have of their own mind. If an economist has sometimes himself made the kind of decisions he is now studying as a theorist, he would begin according to the guideline by interpreting his own past behavior. To give an example consonant to the theme of this paper, nothing could be more natural for a former loan officer, currently intent upon developing a theory of loan decision making, than to start off with an analysis of his earlier experiences.

Firsthand knowledge of this kind is not always available. The economist must then imagine himself in the place of a banker in a given decision-making situation and go through in the abstract the stages of the decision process. Also such thought experiments require for their success an inspection of one’s own decisions, possibly made in a milieu quite different from that under scrutiny. Even though the access of the economist to the content of the banker’s actions is now not as easy as above and it may be still more difficult in some other cases, the access can hardly ever be totally blocked (Shearmur 1992:109). In so far as ethical considerations enter into the mental exercise, such as when the economist ponders, besides how he would act in the shoes of the banker, how he *ought* to act, he must additionally decide whose values to adopt (Sen 1979:267).

When an economic theorist strives to understand the decisions of bankers and other people by putting himself in their position, he uses the method of introspection. The aim is to explain or predict what the objects of the inquiry do in the envisioned situation, why they choose to behave in that manner, and how they reach their decisions. Introspection has always been an important source of knowledge in economic theory. Simon (1976:xxx), a pioneer in the integration of psychology into economics, is one of the few to openly recognize the role of introspective knowledge in judging the correctness of economic theories and to regard the test of common sense as “the first test, and perhaps not the least important”. After labeling the “analytical school” the one that “accepts commonsense observation and introspection as admissible procedures for the checking of economic theory”, Stewart (1979:122, 125) goes even so far as to argue that “virtually all the generally accepted ‘economic theory’ now existing has been developed in the way suggested by the analytical school.” The charming narration by Earl (2001:342–344) of his own experiences in a live rock concert and the

accompanying interpretation illustrate the power of introspection to be of use, besides while testing hypotheses, alone at the early stages of forming them.

In view of this state of things, it seems fairly curious how reluctant the economics profession has been to acknowledge the paramount importance of introspection to the development of their doctrines. McCloskey (1983:512) suggests as an explanation for the prevalent attitudes that there is no objective or “scientific” way to test knowledge obtained through introspection, and economists may therefore fail to agree on the results of using the method. From the Austrian standpoint, the unfeasibility of empirical refutation is not a very forcible argument against introspection. As the analysis of the previous section implies, an economist is neither able to measure nor even to know all the causal factors behind the phenomena he aims to explain, and he is compelled to fall back on about the same kind of qualitative procedures as his fellow researchers in the historical science. The method of introspection certainly warrants caution but definitely not the exaggerated fear of Hutchison (1938:141) that “the progress of economic science will constantly be obstructed by all sorts of controversies, interminable in their very nature, and there will be no effective barrier against pseudo-science.”

The action axiom that constitutes the foundation of praxeology is an outcome of introspection (Mises 1962:71). We have learnt to understand our own actions by interpreting them as means toward chosen ends, and the same procedure enables us to reach an understanding of, instead of a mere recording of superficial regularities in, the actions of other human beings. While stating that we do not understand an action, such as the impulsive talk of a lunatic, we mean that we fail to discern a purpose in the action and, accordingly, we decline to consider it human at all (Hayek 1948:64). In fact, even the attempts of critics to deny the truth of the action axiom are to us intelligible only as exactly the kind of intentional aiming at ends that the axiom is all about.

Introspection is part of the toolkit of the Austrian economist also in her efforts to deduce meaningful propositions from the action axiom. According to Gunning (1991:20), “she endows subjects with characteristics that she knows from intuition and experience to exist in the minds of human actors.” Given the origin of their economic thinking, the Austrians should consider the use of introspection natural when choosing to step outside the narrow confines of pure praxeology. We enter in the following into a discovery of ideas that such an extension of Austrian reasoning might give us in our attempts to increase theoretical knowledge of human action.

4. The Inevitability of Human Ignorance

We know from the action axiom, and directly from our own experience, that the future is uncertain. If there were no ignorance and human beings knew everything of their future, it would be rational for them to choose at any particular moment only one course of action, and there would be no genuine acting at all (Hutchison 1938:88).

Perhaps the best way to illustrate the pervasiveness of uncertainty is to conceive of a case, such as the sunrise tomorrow morning, in which the future seems to be fully certain but in which, when more carefully considered, our foreknowledge is yet far from complete. We know from long-term experience that the sun rises (or the earth rotates) according to a very

regular pattern. However, as any competent astronomer is able to witness, we do not know all the causes that might change the pattern any time in the future. To use the terminology of this paper, people may be highly skillful at making correct predictions of future events by relying on rules that have proved to work in the past, but they do not necessarily *know* the future nor when the rules cease to be serviceable.

We examine human ignorance in more general terms in this section and divide it into three separate categories. Human beings may be ignorant of the alternatives in a particular choice situation, the consequences of choosing any one of the alternatives, and the values behind the choices (Hansson 1996:370). Each of these are analyzed in its turn in the following from the point of view of a banker making a loan decision.

First, the banker is ignorant of many of the different alternatives that he could choose under the resources currently at his disposal. He certainly knows, for example, that a way to moderate the risks of accepting special-purpose equipment in security for a loan is to require an equity stake by the debtor (Williamson 1988:580). However, he may be unaware of several other means, such as the use of some less specific although a bit more expensive equipment, which he could require as a condition for the loan. It is possible that some of the alternatives do not simply come to the banker's mind, or even that, despite his knowing them all too well, he somehow fails to realize their relevance for his current pursuits.

For the Austrians it is misleading even to think of the alternatives of a choice as if they were a closed and fully known set. We live in a dynamic world where alert individuals are all the time trying to expand the set and, in fact, to create options that cannot be said to exist at all without such entrepreneurial effort. In the terminology of Kirzner (1973:33), acting is not as simple as mere mechanical choosing in a framework of given ends and given means, but it also presupposes "*the very perception of the ends-means framework within which allocation and economizing is to take place.*" A task of economic theory is to explain how the actors discover the alternatives and succeed in reducing their ignorance.

Second, the banker of our example is ignorant of many of the consequences that the choice of any of the alternatives will produce. The unanticipated consequences can be either favorable or disadvantageous for his interests. In an example of fairly remote adverse effects, the decision of the banker to finance a R&D project of a new corporate customer helps the engineers of the firm to develop a new product which alerts an entrepreneur somewhere else to innovate another new product which, in turn, destroys the competitive edge of one of the banker's old customers, causing him an enormous credit loss. It is fortunate for rational action that most of such interdependencies are weak enough to be safely ignored, and in the totality of events we are able "for practical purposes to isolate quasi-self-contained substructures" (Hayek 1952a:131). With the definite aim of making the isolation work, social systems are often designed so as to decouple their subsystems or modules (Earl and Kay 1985:40) and render them "nearly decomposable" (Simon 1996:200). Callon (1998:260–264) drives perspicuously home the difficulties in forming such subsystems in practice and containing "overflows" between them.

Also the beneficial consequences of one's actions are often hard to foresee, and in the extreme they fall beyond anyone's wildest imagination before the event. The emergence of true surprises in the course of time suggests that our ignorance of the future is much more fundamental than not knowing the market rate of interest in a month's time, the financial

ratios of a firm in a year's time, or other similar particulars of the social reality. Human beings may fail to know *what* they are ignorant of and realize, perhaps only after discovering the unexpected, that "one was not even aware of one's ignorance" (Kirzner 2000:23). A purposeful search of what is not known to exist is clearly outside human faculties, and a challenge for economic theory is to explain how individuals still succeed in reducing the uncertainty ahead of them.

Third, the banker is ignorant of the values on the basis of which he makes his decisions. For example, while granting a 10 year loan to a chemical firm he cannot know whether he is toward the end of the period as interested as today in the financial wealth of his enterprise or whether he obtains more personal satisfaction by lending to industries with smaller emissions of environmental poisons. Rational human beings do their best to reduce such uncertainty, and as Bacharach (1989:272) notes in his inquiry into the role of *Verstehen* in economics, "one major cognitive technique we use for doing this is by imagining how our future self will feel." Introspection is not perfect, however, and to foresee one's own future mind may in fact be as difficult as to read the present thoughts of other people.

Even though we do not know, at least with absolute certainty, what the future will bring with it, we must have some means to make future events predictable. If we lived in a world where anything at all can happen, it would make no difference which course of action to choose, and rational action would be paralyzed. As Hutchison (1981:221) argues in his critical analysis of Austrian economics, "no ordered or civilized human society or social activity would have been possible if human preferences, expectations and knowledge were completely unpredictable." We examine in the following section how human beings, ignorant of much of what will happen, are able to find orientation for their actions on the basis of the bits of knowledge they do have.

5. Action as a Process of Classification

Even though the future is unknown, it need not be unpredictable and undermine the grounds of rational action. Human beings learn through experience that many events repeat themselves according to more or less regular patterns, and a fairly reliable means to predict the events is to simply assume a constancy of the patterns. There is no way of knowing the regularity of future events other than waiting for the lapse of time. For the practical man, this is a minor anxiety because in order to act successfully he need not be able to explain why he manages to hit upon the right predictions. A mere belief in the ability to predict the future may well be enough for the purposes of practical action.

In a large society with its current and past members differing from each other in multiple ways, one need not have own experience of all the regularities that might be of advantage. In fact, everything we learn during our lifetime is based on patterns of knowledge which have gradually accumulated in the course of the processes of biological and social evolution and which we mostly acquire at birth and through conditioning (Butos and Koppl 1993:315). Building upon such an infrastructure of the mind, a person intent upon a career as a banker may spend years to study at a business school and read piles of books before making one single loan decision. Even after eventually entering the banking business, he draws

constantly on the knowledge of others by asking their advice, exchanging opinions with them or simply copying their actions.

The easiest decision situation to explain in terms of the theory set forth in this paper is one which a decision maker encounters for a very large number of times in exactly the same shape. He is then in an excellent position to try alternative responses and accumulate experience of what is the best of them for his own purposes. In so far as he remembers the alternative that has proved to be superior to all the others, he attains his ends simply by repeating it time and time again. This theoretical finding falls in fair line with the empirical observation of subroutines, used by commercial banks to appraise the purpose of a loan, that "examine historical records to try to locate roughly similar lending situations which have occurred in the past" (Cohen, Gilmore, and Singer 1966:235).

The course of action that the decision maker has found to be the best through trial and error need not be the best of all possibilities, or the optimal choice. Ignorance prevents him from ever knowing a complete list of alternatives, let alone all of their consequences. Rational action in the real world always makes satisfactory choices. Since there is always a chance of improving on such choices, it may be wise to deliberately depart from them from time to time and assume what in the imaginary world of optimization would look "perverse behavior" (Boland 1986:164).

Human action is in practice never routine repetition of exactly the same choices. Even two loan applications as similar to each other as anyone can imagine differ at least in some details from each other, such as the moral conceptions of the applicants. A lapse of time between the two loan decisions tends to produce further differences in the expected consequences. A change in the values of the banker, or merely his conjectures of such a possibility, is alone enough to give him reasons to reconsider his previous practices.

When trying to find earlier cases which resemble the one currently at his hand and which are therefore of use in his efforts to find a good course of action, the banker must of necessity content himself with a set of cases that have only some, but hardly ever exactly the same, qualities in common. The banker may compare any particular instance to a large number of different sets of cases that he has experience of, each having some qualities of relevance to the current case. None of the various sets of cases is alone able to suggest in detail what the banker ought to do, and each can at most produce a tendency to a kind of action. As Hayek (1969:40) puts it, "a disposition will thus, strictly speaking, not be directed towards a particular action, but towards an action possessing certain properties, and it will be the concurrent effect of many such dispositions which will determine the various attributes of a particular action." After the banker has dug out of his memory the categories or classes he believes to match the present case, or already during the process, he can rearrange them and build up in his mind new classes of a higher order. According to Hayek (1952a:70), this means at the level of neurons in the brain that the classification of primary sensory impulses, and further impulses they evoke, "can take place on many successive levels or stages, and any one of the various classes in which an impulse may be included may in turn become the object of further classification."

In the course of the process of multiple classification, the banker may come to make use of a very vast store of knowledge accumulated in various fields and times of his life (Hayek 1952a:130). He is never conscious of all he knows and much of his knowing is tacit

(Nelson and Winter 1982:76). The more there are novel qualities in an individual case, the less the knowledge embedded in past cases is, of course, capable of guiding action, and the more there is unavoidable ignorance. Still it is true, as Earl (1990a:726) mentions in his survey of the economics of psychology, that “when faced with uncharted territory, decision-makers will try to find similarities with other environments that they have previously been experienced”. On the other hand, even in the simplest of all situations involving actions by other human beings, the banker is not able, any more than a government officer assigned to supervise her doings or anyone else, to know exactly the future course of events, and he is at most capable of what Hayek (1967:27) aptly calls a “pattern prediction”.

As a result of the process of classification, the human mind produces a highly complex mental order in which there is a countless number of different classes of events, each having qualities common with many others but no two having exactly the same combination of qualities (Agonito 1975:167). The art of human action is to connect every choice situation to a class with similar qualities, to recall the consequences of acting in alternative ways in the cases belonging to this class, and to choose the best alternative. Since by rule following we usually mean “a general *disposition*, on the part of the acting person, to exhibit a particular kind of behaviour in certain types of situations” (Vanberg 1993:176), to act purposefully is in my analysis to follow rules of behavior. An actor need not be able to state in words a rule he follows (Hayek 1963:44), and, rather than a pre-existing norm, it is a regularity in behavior that emerges as a result of the actor repeating a kind of action in situations that belong in his subjective view into the same class (Hayek 1973:43). Meaning by and large the same thing, Nelson and Winter (1982:97) speak in this context of routines as “repetitive patterns of activity” and Choi (1993:37) of paradigms as “examples of viable practice”.

The acts of classification may involve very different degrees of consciousness (Streit 1993:228). In one extreme there are habits that govern automated actions, such as most of pressing the keyboard of a computer, and in the other there are judgmental decisions that require extreme concentration. The human mind consists of different levels, each with a particular extent of consciousness, and it constitutes as it were a hierarchy simply because “full conscious deliberation at all levels of mental activity is not possible” (Hodgson 1988:114). To Mises (1966:19), “human action is necessarily always rational”, irrespective of the level it originates from, and like a great majority of economists he leaves a closer analysis of the content of rationality outside the purview of economic theory. Even Hayek’s theory of the mind, as Weimer (1982:282) and Smith (1997:22) note, fails to clearly specify the degree of human consciousness in any particular action.

It is conceivable that someone specializing in making repeatedly a given type of rather simple decisions gradually learns to group a great part of particular cases into a fairly small number of different classes. For example, if a banker runs a credit card company and treats daily as his main job hundreds of credit card applications, he may have ready in his mind a few dozens of typical classes or types of customers, each with its own qualities of solvency and habits of consumption, of which he finds a moderately good match in the majority of cases. Common examples of indications of probable future conduct are the employment of the applicant, his monthly income and past delinquencies (Earl 1989:178). Typifications about groups, often stemming from face-to-face relationships with particular

people, are in Austrian hermeneutics one explanation for the emergence of order in a society of people mostly anonymous to each other (Ebeling 1987:85). Even when a particular profile originates in several experiences of a more or less similar kind, it is possible that the banker decides a case belonging to the profile on the basis of one single instance of the past that he happens to recall at the moment. Another common trait of human psychology is to fit all oncoming cases to a few favorite profiles, to ignore cues dissonant to them, and even to deliberately seek information confirming the initial hypothesis (March 1994:38).

While grouping people into a limited number of types or profiles on grounds of a few personal qualities, the banker is using a rule called the “representative heuristic”. This rule like many others that the banker has learnt to follow in order to reduce the uncertainty of the future is, as Tversky and Kahneman (1974:20) point out, “highly economical and usually effective”. At the same time, however, the rules “lead to systematic and predictable errors” that offer opportunities for entrepreneurial bankers to improve upon their decisions and, by outperforming the rivals, to increase the profits of their enterprise. On discussing the decision process of a venture capitalist, Zacharakis and Meyer (1998:73) suggest he should be wary of face-to-face meetings that might lure his attention to height, appearance and other trivial traits of an applicant.

When a banker makes an entrepreneurial discovery, his action is different, not in kind but rather merely in degree, from repetitive routine. The discoveries may presuppose more of conscious deliberation, and they are certainly enhanced by a disposition to classify facts and to find connections between them in novel ways. Still it seems true that entrepreneurial action ensues from the same sort of rule following as human action in general and only constitutes one end in a continuum (Gaglio and Katz 2001:105). Butos and Koppl (1999:263) take a similar stand while arguing that the Hayekian theory is “fully rich enough to account for individuals learning at different speeds, about different things, and for different purposes.”

Baron (1998:286) hypothesizes that entrepreneurs have a stronger inclination than other people to appraise the prospects of a project more on the basis of its details and imagined future than by drawing on experience of broad classes of similar projects in the past. As a result of the “planning fallacy”, entrepreneurs tend to cherish excessive optimism of the future and overconfidence in their chances of success. There is in such spirited action, however, nothing to make it in general principle different from human behavior even though some elements of the classification process are of a particular kind and occasion peculiar patterns of action.

A concrete means to avoid fallacies, errors or “anomalies” in behavior is to make the intuitive process of classification as explicit as possible, maybe with the assistance of a knowledge engineer, and to give the decision of the most obvious cases to a computer. The methods of artificial intelligence that have been successfully applied to improve the quality of bank lending decisions include expert systems (Shaw and Gentry 1988), case-based reasoning systems (Sinha and Richardson 1996) and neural network systems (Jensen 1992). The use of appropriate software seems justified in particular when emotions such as anger and sorrow “will affect or ‘colour’ the perception of, and the responses to, any external event” (Hayek 1952a:98), or when other small details of a social situation “that have nothing to do with the underlying economic structure of the situation” influence the classification process (Messick 1999:15). Simple econometric techniques may suffice to keep order in

the classification of narrow data sets, like factors foretelling corporate bankruptcy (Altman 1993:179) or defaulted sovereign debt (Bird 1986:8).

The power of computers to replace human judgment in economic decisions was strongly exaggerated by some of the participants in the notorious socialist calculation debate of the 1920s and 1930s. Even the rules of routine decisions in the market are usually much more complicated than the naive optimizing rules propagated by the socialist debaters, and no one should expect the central planning board to be alert enough to discover them all. As a testimony to the superiority of spontaneous orders, computer programs are today designed on the model of them, rather than the other way round (Caldwell 1997:1865). The Austrian debaters made it exceedingly clear from the very beginning that “rational economic activity is impossible in a socialist commonwealth” (Mises 1920:130). However, as Kirzner (1994:xxii) suggests, “they were not able to spell out the nature of that inadequacy convincingly.” In an explanation emerging fairly straight from the argument of this paper, the success of the Austrians in making their case was modest because they lacked a theory of human behavior and, accordingly, a solid understanding of how human beings process dispersed information.

6. An Example: Expectations of a Recession

A simple example might serve to illustrate the main content of the psychological theory outlined in the previous section. Suppose a banker has found out through long-term experience that the entrepreneurs who have not themselves undergone the adverse effects of a serious economy-wide recession on their own business tend to neglect more often than the others precautionary measures, like the maintenance of wide-range professional skills and the use of redeployable capital equipment. In his attempt to make up for the credit losses expected from the conduct of such debtors, the banker has learnt to follow the rule of charging a risk premium in the annual interest. Even though he bases his decision on past experience, he has an eye to the future and his expectations are forward-looking (Butos 1997a:85).

The banker cannot apply the rule mechanically because there are many other qualities, besides the inexperience of the loan applicants of recessions, that affect the profitability of his business. In the terminology of this paper, every application is in the banker’s mind a member of a large number of different classes, each suggesting its own rule, and a combined class of a higher order suggesting the final decision. The banker may know from the past, for example, that high interest rates tend to induce debtors, expecting to escape at least part of the costs of bankruptcy, to take still greater risks and cause an unintended change of some lending into a losing business (Neal 1996:409). We are not surprised to read from a guide to lending excellence that rules “do not relieve anyone of the obligation to exercise good judgment” and “if there really is reason to make an exception, an exception should be pursued” (Dorfman 1996:22). Gee (1991:23) accompanies by prescribing, after an explication of his ten rules for loan officers, that “*Don’t depend too much on any set of rules like this.*”

The banker is presumably best able to prepare himself for the risks when he has encountered in his own business a large number of different cases with such qualities. The cases

should, furthermore, not be in too remote a past lest the banker forget the consequences of choosing one instead of some other course of action. It is conceivable that in the extreme the banker succeeds in developing with the years so excellent a proficiency in making good loan decisions that some aspects of the process become simple routine to him, almost as automatic as to be handed over to a machine. Loan decision making can in reality never fully dispense with human judgment, because structural changes perpetually occur both in the decision-maker's mind and the environment, and only a human being is capable of their sensible interpretation. A huge advantage of at least part of human behavior becoming habitual is that, "by withdrawing from the area of conscious thought those aspects of the situation that are repetitive", it "permits attention to be devoted to the novel aspects of a situation requiring decision" (Simon 1976:88).

An appraisal of the ability of others to survive a recession is one of those tasks of the banker that is especially ill-suited to be performed as a routine. Serious recessions may be so infrequent in a developed market order that even the banker himself has never experienced one, not to speak of the consequences on his customers. When normal economic conditions have prevailed from time immemorial, it is difficult for the banker even to imagine in his mind a depressed economy, and there is little else for him to do but to assume everything going on as before. This is the first of the three techniques that Keynes (1937:114) mentions as means we have devised to manage in the circumstances of uncertain knowledge. He takes the argument in fact one substantial step further by suggesting that we deliberately ignore the possibility of changes and "we assume that the present is a much more serviceable guide to the future than a candid examination of past experience would show it to have been hitherto." As poorly as behavioral rules like the Keynesian convention fit in with the optimization assumption of neoclassical economics, theorists of this approach still occasionally assign decision-makers a disposition to rule following, such as when a Cournot duopolist is assumed to expect no reaction from his rival in response to a decision to expand output (Cyert 1988:235).

Even when the banker has seen with his own eyes the consequences of a recession on business life, he is at risk of losing the knowledge as time goes on and the experiences are no longer easily "available" from the memory (Wärneryd 2001:128). I have argued earlier that the banker seeks the best choice for his purposes in a type of decision situations by trying different alternatives and by making inferences from the feedback information. For example, the banker may learn through the trial and error process that after the economy has been stabilized he makes larger short-term profits by making his decisions as if another recession would never come again. The less he has cause for thinking of bad times, the more likely he simply forgets how he should proceed once the signs of a recession are within sight again, and the closer he is with his short memory to those green colleagues just taking their first steps in the profession. The process of experience falling into oblivion is still further intensified by the choice of the banker to follow a rule, called the "threshold heuristic", according to which the subjective probability of a disaster ought to be considered in practice zero once it goes below some critical limit (Guttentag and Herring 1984:1363). Discarding extremely unlikely events is one of the dispositions Kahneman and Tversky (1979:275) ascribe in their model to decision makers at the editing phase of the choice process.

Bankers ignorant of expedient rules of loan decision making are one plausible explanation for the emergence of the kind of recurrent fluctuations that Austrian economists have studied in their theory of business cycles. According to the traditional story, the interventionist schemes of the government, such as serving as a lender of last resort or a deposit insurer, induce the banks to diminish their reserve ratios and extend credit to too time-consuming or otherwise ill-advised projects in relation to the overall funds of saving currently available in the economy. The reason for the policy of the government is in the view of Mises (1928:138) “the predominance of an ideology” which regards as the social responsibility of the banks to lend as much as the firms need for carrying out their investment projects and, maybe as an unintended effect, for creating jobs for the labor complementary to the new capital. The untenable foundations of the credit expansion become sooner or later visible in proportion as the debtors get into insoluble liquidity problems, fail to make repayments as agreed and drive the banks with them into financial distress. In the end, credit losses together with flying depositors force the banks to credit contracting and, unintendedly, turn the business cycle from an euphoria into a depression.

There are several reasons why many bankers tend to adopt more cautious lending strategies at about the same time and, in consequence, to cause the problems in different sectors of the economy to cluster in time. First, the availability heuristic of the bankers make them at once more alert to the hazards of lending while perceiving the first signs of an ending credit boom (Neal 1996:413). Second, the social influence of the waken bankers on others spreads the changing mood throughout and causes a “herding” of the new lines of action (Wärneryd 2001:216). Third, depositors are often at a loss to distinguish insolvent banks from the others, and they rush to make withdrawals from all of them alike (Mishkin 1992:121). Fourth, most major investment projects have probably been already carried out in the course of the preceding boom period, and the demand for credit may dry up simultaneously with the supply of it (Shackle 1968:101).

Mises (1966:573) refuses to concede that changes in the unhampered market could provoke a cycle even though, as Rothbard (1963:37) reprovingly remarks, he treats the recurrence of credit expansion in the part of his book dealing with the economics of the market society. In the view of Mises (1966:575), the adaptability of business “is powerful enough to offset the effects which such slight disturbances of the loan market can possibly bring about.” Since this statement embraces far-reaching predictions of how the market participants will behave in the future or what are the contents of their ends, Mises cannot be advancing it as a praxeologist but, in his own terminology, as a historian who uses some non-economic theory of action as a basis of his assertion. The point of my paper is that the economists ought to pay more attention to such theories of action, at all events teeming in their treatises, and to call them “economic” to the extent they prove to explain economic behavior universally and reliably. In the present instance, even a slight move of the psychological assumptions from the background toward the spotlight of a systematic economic analysis seems sufficient to show a defect in the economist’s argument.

The theory of this paper suggests that a more or less regular pattern of business cycles can also emerge in a perfectly free market order. When enough time has elapsed from the preceding recession, the unpleasant recollections of the bankers begin to gradually fade away and their predictions of the future, based upon the knowledge of the recent past, tend

to be modified as well (Earl 1990b:293). Cognitive limitations account for the recurrence of errors and justify the Austrian belief, criticized by Tullock (1988:73), “that business people never learn.” Both the lack of caution typical of the boom period and the move to the other extreme, once the cumulative processes of a recession are triggered off, have their effects on the lending behavior of the bankers and the observed macroeconomic variables.

I argued in an earlier section that human beings are not capable of successful action without resort to the knowledge of the others through imitation and other means. The development of first spoken and later written language has enormously improved the human faculties. Hayek (1952a:135) thinks that our ability to communicate, not matched by any other species of animal, improves the quality of decision making also by developing the skills to think in terms of abstract symbols and, in consequence, to perform multiple classifications. The choice to imitate the actions of others instead of relying on our own knowledge or experiments is decisive in determining our capacity for good decisions, and a trait of the most adept is thus a readiness “to abandon one mode for another as the perceived need arises” (Pingle and Day 1996:207).

Imitation as a device to cope with uncertainty works poorly when there is nobody else in the society knowing any better (Choi 1993:58). Business fluctuations of an unusual severity are to be expected against this background when no single banker any longer clearly remembers the risks associated with recessions, and the exchange of ideas ceases to bring usable new knowledge. Individuals do everything in their power to improve upon the rules they use in their attempt to avoid errors, but “if everyone in one’s environment falls prey to an anomaly, it is difficult or impossible to overcome it” (Frey and Eichenberger 1994:223).

We glance lastly at some of the implications that the prevalence of cognitive limitations and biases has for the design of the legal institutions of society and the government policies under the law. Austrian economists have generally relied upon the rules of the free market in attempts to prevent the recurrence of business cycles or mitigate the adverse effects of them. This policy recommendation is basically sound but may need slight qualifications on account of the insights into psychology. Institutional responses departing from the market system are worth a consideration in particular when the anomalies in the behavior of people are systematically exploited by others and no spontaneous learning seems to arise to resist such a tendency. A case in point is the incautious behavior of borrowers whom the banks may persuade in the boom period to take up loans to an excessive amount or for a foolish purpose, and who can be driven into an unbearable personal calamity as a result.

Advertising is one of the methods that banks use to attract customers. Eisenberg (1995:244) explains how a bank may succeed in inducing consumers to open a checking account with it by publicizing the high interest rate prominently and hiding unfavorable terms into the less salient part of the contract. Similar tactics can be applied to exploiting the cognitive limitations of borrowers. Drawing on vast evidence of the occurrence of market manipulation in the form of advertising and other means, Hanson and Kysar (1999:1554) come to recommend enterprise liability as a remedy against the failures of contracting.

Before Austrian economists rush to put forth proposals to extend lender liability beyond the standard rules of contract law, regulate advertising or interfere in other ways, at least the following considerations have to be borne in mind. First, the needs of borrowers do not

exist somehow given, independent of the publicization process of the market, but they are molded and discovered in the course of that very process (Littlechild 1982:306). Second, borrowers often learn from their errors in repetitive conditions (Frey and Eichenberger 1994:224). Third, the competitive context of the market tends to intensify the learning (Butos and Koppl 1997:355). Fourth, government agents do not have a superior brain, and they act under the same limitations on knowledge and cognition as everyone else (Horwitz 2000:31). Fifth, centralized decision making prevents alternative points of view and ways of action from gaining a foothold, and it cuts down the variation necessary for successful imitation and learning (Vihanto 1998:317).

The psychological inquiry of this paper indicates that the normative issues of improving the law and economic policy are in fact highly complex and difficult to settle. Whichever conclusion the Austrian economists reach about a proper regulation of banking, they should base it, in the oft-cited words of Hayek (1948:44-45), on propositions “which ought, at least in principle, to be capable of verification”, rather than on mere exercises in pure logic. An example of a policy tool worthy of experimentation, suggested by Jolls, Sunstein and Thaler (2000:42) in their paper on behavioral law and economics, is shocking counteradvertising by the government with the aim of making the public alert to the risks of running into debt.

7. Conclusion

The uncertainty of the future is one of the principal corollaries of the action axiom of praxeology. Instead of merely stating this as a fact for human action, I have aimed to find out above how human beings try to attain their ends under the conditions of ignorance or what is going on in their mind in decision situations of the real world. According to the psychological theory outlined in this paper, human beings pursue goals through following rules that have helped them to foresee future events in the past and, in this way, to achieve their goals as perfectly as possible. In an extensive society with a large number of people knowing different things, a vital means to discover useful rules is to imitate the actions of those who have proved to succeed in their endeavors.

There are other weighty reasons to follow rules, or to repeat a kind of action in cases belonging to the same class, besides the uncertainty of the future. Human beings are incapable of the case-by-case decisions described in the optimization models of neoclassical economics also on account of the imperfections in their competence to process given information (Heiner 1983:562). My decision to leave limits on cognition outside a systematic analysis is in harmony with the well-known emphasis by Hayek (1976:28) that the necessity of observing rules “follows from our ignorance of what the consequences of a kind of action are in particular instances.”

It is undoubtedly a fairly primitive means, to say the least of it, to predict future events by having mere belief in the recurrence of stable patterns observed in the past. Human beings seem to have, however, few alternatives in the kind of a world they have to live and act in. “Knowledge of the present, or of the past, may be quite a poor guide to the future, but if such is the only available knowledge then an enterprise must use it” (Dow and Dow 1985:52).

We have examined throughout this paper the behavior of bankers and loan officers as a theoretical example. Empirical observations on loan decision making suggest that it is also

in reality like the process of rule following studied in the Austrian-based theory of the mind. According to a seminal paper, “it is clear that the bank loan decision-making process is not a straightforward optimizing procedure”, but it “seems to be handled by particular sets of heuristics” (Cohen, Gilmore, and Singer 1966:222). A more recent study, also dealing with the development of computer applications in business, agrees by stating that “empirical research on bank loan decision making indicates that it is a heuristic, satisficing process. Bankers do not optimize” (Klein and Methlie 1990:43).

Whereas a fairly far-going unanimity may emerge in the general conclusion about the ubiquity of rules among those who study the psychology of human action seriously, no such agreement exists on the details of the mental processes leading to rule-following behavior. I explained above that human beings come to follow rules, without any deliberate intentions and often unconsciously, by comparing their perceptions to classes of similar perceptions in the past and by acting in the same way, known by experience to produce the best outcomes, in cases belonging to the same of such classes. I have not aimed here to relate this view on the process of acting, advanced by Hayek in *The Sensory Order*, to the many theories of professional psychologists, neither to attempt any contribution to theoretical psychology. My purpose has been to show by means of a simple exercise that economists are capable of, and it is in their interests to be engaged in, psychological inquiry.

All phenomena of the social order are explained in Austrian economics as results of human action, and some conception or theory of the mind is, therefore, of necessity always built in Austrian explanations. This is true even in pure praxeological inquiry, if not earlier, at the stage of applying the theoretical findings to particular historical instances. The main point I have wanted to make is that by making explicit the psychological theory they use and by subjecting it to a rigorous analysis, Austrian economists are in a position to deepen their insights into social reality and even to avoid inaccuracies in their reasoning. We have seen in this paper, in particular, that a consideration of the contents of human action, besides a mere analysis of the logic of it, helps us to understand better some of the strong and weak points of the market system and, in this way, to resist the simplism occasionally discerned in the praxeologist treatises on free markets.

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