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### The will to save money

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*Publication date:*  
1993

[Link to publication in Tilburg University Research Portal](#)

*Citation for published version (APA):*

Wärneryd, K. E. (1993). *The will to save money: An essay on economic psychology*. (CentER Discussion Paper; Vol. 1993-22). CentER.

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# Discussion paper



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**The Will To Save Money  
An Essay on Economic Psychology**

**by Karl-Erik Wärneryd**

May 1993

ISSN 0924-7815

**THE WILL TO SAVE MONEY**  
**AN ESSAY ON ECONOMIC PSYCHOLOGY\***

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**Abstract**

In economic texts, individual differences in saving have often been attributed to varying thriftiness. Low thriftiness was by many classical and early neoclassical economists associated with deficient anticipation, impatience, lack of self-control, and weak willpower. The uncertainty of future consumption which could be perceived differently by individuals did not always lead to provision for the future. There was a need for something between the perception and the actual behavior of saving money. This was called a desire of accumulation or a will to postpone consumption and it served as a "prompt to action". There is now again an interest in the possible role of volition in the context of saving. Recent developments in the psychological study of intentions and self-regulation, on one hand, and behavioral research on time preferences, on the other hand, provide interesting ideas that inform new research on saving behavior. They also stimulate new thinking about ways of encouraging saving.

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\* This is a revised version of a paper presented at the Wallenberg Symposium "Will and Economic Behavior" at the Stockholm School of Economics, April 2-3, 1993. I want to thank the VSB Project on Savings for providing me with the opportunity to write this paper.

## The Virtue of Saving Money

### THRIFTINESS

It is often said that households and individuals in the Western industrialized countries save too little and that people are less thrifty than they used to be (see e.g. Modigliani, 1986). As a consequence there is too little room for investments and there is waste of resources on immediate consumption. The other view—that there is too much saving—is, however, held by many who, in the present severe recession, look to Keynes (1936) for support of their view. Immediately after World War II there was, especially in the USA and to some extent in Sweden, a fear that a depression would follow and people were encouraged to spend rather than to save.

I do not propose to settle in this paper the question of who is right, but my own conception no doubt tends towards the too-little-savings view even for the short run and definitely for the long run. What I propose to do is to have a look at what saving is and how individual factors such as those having to do with will can help to explain saving behavior. Since the best discussions of the psychology of saving are to be found in the writings of classical and early neo-classical economists, I shall rely a lot on those. For empirical studies of saving behavior there is much to be learned from their verbal theorizing about saving.

Saving has through the ages mostly been considered to be a virtue and the virtuous individual has been characterized as thrifty which by far is not the same as mean or greedy. Notable exceptions to this high esteem of saving are some of Mandeville's (1732/1923) and Keynes's (1936) writings. Lea et al. (1987, p.214) ask why saving is so widely held to be virtuous behavior when in fact there can be ill consequences for a society if there is too much saving. In a somewhat jocular vein they suggest that saving is a moral activity because it is difficult to save. Another answer given is that it has been in the interest of those who inspire moral norms in society to promote saving for their own purposes. In the middle ages, common people were supposed to save money and not spend all of it on immediate consumption. The King, the clergy and the gentry, all could profit from such savings (Tuchman, 1979). To ensure that the common people did not overspend, the so-called sumptuary laws were enacted, at the expense of the merchants. Those laws regulated in detail how people of different standing in society could dress.

Adam Smith (1776/1982) criticized the sumptuary laws and declared that common people had an instinct for frugality and could be left alone. Overspending was according to him something that characterized those governing the country and only they could be accused of ruining the country's finances.

In his influential book "The sociological theory of capital" which was originally published in 1834 and then republished in 1905 (under a new title) because of high demand from economists, John Rae (1834/1905, p.53) expounded a theory of accumulation of capital. Many of his ideas were later elaborated by economists like John Stuart Mill (1848), Böhm-Bawerk (1888/1912), Marshall (1890), and Fisher (1930). Rae captured important aspects of saving in the following two sentences: "The determination to sacrifice a certain amount of present good, to obtain another greater amount of good, at some future

period, may be termed *the effective desire of accumulation*. All men may be said to have a desire of this sort, for all men prefer a greater to a less; but to be effective it must prompt to action." He had some ideas as to what could prompt to action. The circumstances that seemed to contribute most to giving strength to the desire to accumulate were the following three.

"1. The prevalence throughout the society of the social and benevolent affections, or, of that principle, which, under whatever name it may be known, leads us to derive happiness from the [future] good we communicate to others.

2. The extent of the intellectual powers, and the consequent prevalence of habits of reflection, and prudence, in the minds of the members of the society.

3. The stability of the condition of the affairs of the society, and the reign of law and order throughout it."

Despite these ideas which have later been elaborated by economist thinkers, the relationship between desire of accumulation and saving behavior is, to this day, still puzzling behavioral researchers.

Rae (1834/1905, p.3) stated that it was the task of the philosophers to interpret the facts of wealth accumulation and to find the causes behind. "However complicated the social system of which any person engaged in the acquisition of wealth makes a part, he has no difficulty in tracing the manner in which that portion of it which he possesses has been acquired, nor in explaining how it forms to him a certain amount of what he calls capital.... Though, therefore, he can easily tell how he got that which constitutes his wealth, and how to him it comes to be wealth, he will yet probably confess that he is unable to say what constitutes wealth in general, from whence it is derived, or what are the exact laws regulating its increase or diminution."

#### THE CONCEPT OF WILL

Surmounting the difficulty of postponing consumption resembles what is popularly (and by some classical economists like Böhm-Bawerk (1888/1912) called will-power. "Will" entails the notion of overcoming something difficult. If it is not difficult, it does not take much will to do it. A dictionary definition of will (American Heritage Dictionary, 1979) runs as follows: "The mental faculty by which one deliberately chooses or decides upon a course of action; volition: '*Will is the sustaining, coercive, and ministerial power--the police officer [in man].*' (Emerson). Another, to me less fascinating, definition in the same dictionary puts will equal to *determination, diligent purposefulness*.

This dictionary definition lays more emphasis on deliberation than on the difficulty of undertaking the action, but the quote from the poet Emerson who was a contemporary of the psychologist William James neatly illustrates that there is more to will than just deliberation.

William James (1890/1983, p. 1098) began his chapter on will with the following definitions: "Desire, wish, will, are states of mind which everyone knows, and which no

definition can make plainer. We desire to feel, to have, to do, all sorts of things which at the moment are not felt, had or done. If with the desire there goes a sense that attainment is not possible, we simply *wish*; but if we believe that the end is in our power, we *will* that the desired feeling, having, or doing shall be real; and real it presently becomes, either immediately upon the willing or after certain preliminaries have been fulfilled." In other contexts, James stressed even more the fact that will involved difficulties which could be overcome with some effort. James's definition of will is quite similar to Aristotle's delineation of choice (Aristotle, 1976, p. 120): "Since, therefore, an object of choice is something within our power at which we aim after deliberation, choice will be a deliberate appetite of things that lie in our power. For we first make a decision as the result of deliberation, and then direct our aim in accordance with the deliberation." With this interpretation, choice is not equivalent to an observable act or some particular revealed behavior. It is a process with several steps in a certain direction.

The essential characteristic of will is thus that we believe that the desired end is in our power and that we expect to be able to overcome the difficulties. James's discussion of will implies that there is a force involving resistance which it requires some effort to master. In their economic theory of self-control, Thaler and Shefrin (1981) picture the problem as one of conflict between a short-term maximizer (the doer) and a long-term maximizer (the planner). Some effort is assumed to be necessary for the desire to save to materialize in actual saving. There are differences between a positive attitude towards saving, the will to save, and the actual saving behavior, even though, as James suggested, there is a belief that the end to save is in one's power.

In everyday language will is apparently mostly used in expressions related to will power such as having a strong will (usually not in a flattering sense) or having a weak will (which is even less flattering). Will power designates an assumed personality trait with some stability. To some extent this is equivalent to self-control, a psychological concept that appears in many personality tests.

Will is not a popular concept in psychology ever since psychology became an experimental science in the 1870's and especially after functionalism and behaviorism came to dominate psychological thinking. There is now again some room for concepts similar to will and there is an increasing willingness among psychologists to explore phenomena that belong to will. The recent upsurge in research on self-regulation and related phenomena illustrates this (Karoly, 1993). In attitude research there is a special interest in an attitude component called "intention." "Intentions are assumed to capture the motivational factors that influence a behavior; they are indicators of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior. As a general rule, the stronger the intention to engage in a behavior, the more likely should be its performance." (Ajzen, 1991, p. 181) The concepts used typically do not cover all the dimensions of will that, for example, James described.

Many psychological attempts to explain behavior or actions employ the concept of attitude. Generally attitudes are defined as having three components: belief, affect, and conation (action tendency). When attitudes are used to predict behavior, the primary focus today is on the role of a volitional component called "intention." Attitudes are generally said to be poor predictors of actual behavior. If attitudes are related to

intentions and the latter are also allowed to be affected by other influences like social norms or situations, the predictive power of attitudes increases.

Ajzen and Fishbein (1980) sought to improve the predictive power by including more factors in their model "The theory of reasoned action" such as social norms and focussing on attitude towards performing an act rather than attitude towards an object. The dependent variable is behavioral intention which is set as approximately equal to behavior. Attempts have recently been made to improve the predictions by adding perceived behavioral control (similar to Bandura's self-efficacy) which contains some volitional components. The predictions of behavior with this added volitional dimension have been quite successful (Tesser and Shaffer, 1990, p.489). Now the model is called "the theory of planned behavior." (Ajzen, 1991)

It is interesting to note that in the case of purchase plans retrospective interviews always show that there have been more purchases than planned for. Those who stated in their first interview that they had purchase plans, to a large extent, but in far from a hundred percent of the cases, fulfilled their plan to purchase a consumer durable. The majority of actual purchasers came from among those who said that they did not have any plans. In the case of saving, it is the other way around. Plans to save are rarely fulfilled to the full extent (Katona, 1975). As a rule people plan to save more than what they are actually able to live up to. Plans to save are not good predictors of actual saving. Answers to the question whether it is a good time to save money give better predictions (van Raaij and Gianotten, 1990).

Psychologists tend to mention self-control and ability to delay gratification as possible explanations of individual saving. Some recent developments along these lines will be dealt with later in this paper. Most earlier studies of delay of gratification have been done with children as subjects. Psychologists have studied individual capacity to defer gratifications and have found that age, social status, and education are positively related to the ability to postpone satisfaction as Böhm-Bawerk and other economists had surmised. Serious criticisms have been directed against many of these studies (see Gurin and Gurin, 1970). Experiences of opportunities or rather lacking opportunities may explain why immediate rewards are preferred to a large extent: future rewards may be highly insecure.

Marshall (1890) conceded that low-income, low-education groups were often right in consuming now rather than accumulating money or goods for later consumption since there were powerful others who threatened their accumulated wealth. Inflation and wealth taxation may have similar impact on feelings of uncertainty. In connection with saving it is an interesting question whether ability to delay gratification and saving habits are acquired early in life, to what extent they are influenced by examples set by parents and by the opportunity structures or opportunity sets available at home.

### **A Closer Look at Saving**

#### **IS SAVING ACTIVE OR PASSIVE?**

In economics saving is seen as an outcome, not as a process. Saving is often defined as



an excess of present income over consumption and it is usually added that the excess can be used in later periods. This is a passive definition of saving. It is measured at the aggregate level as the saving ratio which is the ratio between total savings in a nation and total disposable income. At the individual level, saving is measured as the difference between net wealth at the end of a period and net wealth at the beginning of the period, or as income minus consumption.

The classical economists defined and treated saving or the accumulation of capital as an active process. Smith (1776/1982) envisioned a conflict between present enjoyment and future profit. Saving meant giving up the former in favor of the latter. Like Rae (1834/1905), Jevons (1871/1911) and many later economists, Smith saw saving as an accumulation of capital which would give more in return in the future. The accumulation of wealth was seen as an act of sacrificing something now for being better off in the future.

The economists thus focused on the use of money, now or in the future. Fisher (1930, p.5) said: "Money is of no use to us until it is spent." He made a distinction between spending and investing. "To spend is to pay money for enjoyments which come very soon. To invest is to pay money for enjoyments which are deferred to a later time." Fisher's main purpose was to explain how interest rates developed. Some possible reasons for saving, e.g. for the goal of buying something at a later date or for having a buffer were of minor interest to him.

The gist of the definitions which picture saving as an action is that saving involves refraining from consumption of some resource in one period in favor of consumption in a later, usually not exactly defined period. This is illustrated by Keynes's somewhat jocular statement: "An act of individual saving means--so to speak --a decision not to have dinner today. But it does not necessitate a decision to have dinner or to buy a pair of shoes a week hence or a year hence or to consume any specified thing at any specified date. Thus it depresses the business of preparing to-day's dinner without stimulating the business of making ready for some future act of consumption." (Keynes, 1936, p.210). This definition contains the act of providing for the future, but it excludes reasons for saving as well as goals involving possible uses in the future. There is a slightly negative tone to the second sentence in the quote.

To some extent the views of the interest rate reflect what the economists think of saving. John Stuart Mill saw interest as the price paid for abstinence (Blaug, 1985). Marshall (1890/1947) defined interest on money as "a reward for waiting." He noted that relating interest to abstinence gave the wrong impression and had been ridiculed by some economists. Karl Marx had, for example, made fun of the abstinence of Baron Rothschild as compared to the non-abstinence of a poor worker. It was therefore better to use the locution "waiting for the enjoyment of material resources."

Böhm-Bawerk (1888/1913) said that "Present goods are as a rule more valued than future goods of the same kind and number." ("Gegenwärtige Güter sind in aller Regel mehr wert als künftige Güter gleicher Art und Zahl") (p. 426). From this fact, the phenomenon of interest rate in all its shapes was explained. To compensate for the difference in value, the individual asked for interest, by Böhm-Bawerk neutrally called

"agio." The explanation of the interest on capital was simply the influence of time on human evaluation of goods.

According to the life-cycle hypothesis, which is the dominant theory of saving, wealth is not in itself a source of utility; the utility derives from the income or consumption that wealth permits. It is recognized by economists that there can be considerable utility of wealth itself, only this insight is kept to side remarks and footnotes so as not to complicate the reasoning. A case in point is Fisher's footnote, referring to the income and wealth of Henry Ford: "Except,.....he derives in addition to this obvious income other less tangible and more subtle income from the sense of possession, prestige, power, etc., which go with great wealth." (Fisher, 1930, p.27). Here Fisher contradicted his earlier statement that money was of no use until it was spent.

#### TYPES OF SAVING

Different types of savings are often distinguished, depending on where they are invested or how they are invested. Economists talk about portfolios consisting of bank accounts, shares, bonds, real estate, antiques, art, jewelry etc. Portfolio choices can be assumed to mirror motives for saving since different motives involve different claims on the liquidity and return of the investment. Some classifications of saving deal directly with the degree of activeness or passiveness. Katona (1975) distinguished between three types of saving, based on reasons or motives for saving: (1) contractual saving; (2) discretionary saving; (3) residual saving.

The category *contractual saving* comprises a decision to save and a commitment to save over some periods. Buying on installment necessitates later regular saving since the debt must be paid off, life insurance involves a contract to save regularly and usually for long time periods. Agreement with one's employer or with a bank to deduct a certain amount each month from the salary and put it in a savings account is another example. *Discretionary saving* is a new concept. It relates to the room for genuine decisions that many people in affluent societies have. They can choose between attractive alternatives to spend money since there is money left after the basic needs have been satisfied. People may decide to save for many reasons such as wanting to purchase an expensive durable, go on a long vacation or just to have money available if opportunities for attractive spending arise. Katona (1975) declared that most of saving was "for a rainy day." Saving surveys show that "to save to have a buffer if something happens" is the most frequently mentioned saving motive. *Residual saving* refers to money that has not yet been spent. It is saved by default rather than planning. This type of saving leads to a need for cash management.

The concepts of discretionary saving and discretionary consumption were used by Katona in his critique of Keynes's psychological law (Keynes, 1936). "Keynes's view that habitual practices influence all consumer expenditures may have been correct a hundred years ago when incomes were spent mostly on nondurables and services, but today in the United States expenditures on durables are important and are usually not habitual. Possibly, then, these expenditures should behave in the same manner as savings are assumed to behave: An increment in income, not used for habitual expenditures, would then be used either for durable goods or for saving; when income declines, habitual expenditures are

not immediately adjusted downward and therefore less money remains either for durables or for saving." (Katona, 1975, p.70-71)

#### THE COMPLEX BEHAVIOR OF SAVING

Saving is a complex behavior. Economic theories of saving are nowadays abstract and based on assumptions that apparently have little connection with psychological thinking. The dominating theory, the life-cycle hypothesis, has proved its value in explaining and predicting savings, but it has also shown itself incapable of explaining many recent developments in saving ratios (King, 1985; Maital and Maital, 1991).

The lifecycle income is the sum of all an individual's incomes, including gifts and inheritances and the revenues from wealth, over the whole lifetime. The fundamental assumption is that individuals essentially need to have the same consumption level in each period of the lifecycle. In time periods when their income is lower than the average lifecycle income, they are assumed to dissave or borrow money which presupposes the existence of a functioning capital market. When the income is higher than the lifecycle expectancy they save money. This means that there is little, if any saving in youth when incomes are usually low and in old age when retirement incomes are lower than earlier income. The individual is then expected to dissave to keep up the standard of living. Most saving occurs between fifty and the retirement age according to the hypothesis. Over the life cycle saving tends to be humpshaped. Recent surveys indicate that there are many deviations from what is expected according to the theory. Both old-age pensioners and young people tend to save more (dissave less) than what is expected. (Ando et al., 1992).

The role of will to leave bequests is much debated since it is not quite compatible with the model. Modigliani (1986, 1988) who is the main originator of the life-cycle hypothesis tries to play down the role of leaving bequests. This can be contrasted to what Rae in the above quote asserted about the strong desire to communicate good to the next generation. In the same vein as Rae, Marshall (1890/1947) emphasized the role of family affection for saving.

From a psychological point of view saving encompasses *anticipation* which is characterized by uncertainty about the future and the act of making *a provision for the future*. There is as Rae (1834/1905) observed something between the uncertainty and the act of saving. He called it a desire and a prompt to action. There is certainly saving that is more passive than what is implied by the phrase "making a provision." This passive type of saving is saving by default, what Katona called residual saving. Such saving is less complex than the conscious provision for the future. Most discussions of saving deal with saving as a provision for the future. This means that the important consequences of residual saving (cash management) are easily forgotten both in theory and practice.

While economic theory has an elegant, generally adopted theory of saving which is all the time the object of testing and attempts at improvement, psychology lacks a comprehensive theory of saving. There are some attempts at theorizing at a less abstract, empirical level (for a review see Wärneryd, 1989). For the present context, Katona's (1975) model of saving and consumption is of interest. He proposed that economic

behavior which includes both saving and consumption, is a function of *ability* (to spend or save) and *willingness* (to spend or save).

This definition comprises a volitional component which Katona and his followers have measured as attitudes at the macro level. There are many findings from survey studies of consumption and saving indicating that the willingness component is important for explaining and predicting consumption and saving at the macro level (see e.g. van Raaij and Gianotten, 1990). While willingness to save as used by Katona was a macropsychological concept, will is a concept that refers to the individual. The main interest in saving research is focused on savings at the macro level. There is in the background the notion that it is desirable to have a micro theory on which macro theory is built up. The classical and many early neoclassical economists used the concept of will in their micro models. The concept of will can be likened to the missing link between uncertainty perception and action. Further exploring and attempts to measure the concept of will seem significant for better understanding saving behavior.

In economic theory and more recently in economic psychology (see e.g. Ritzema, 1992), the concept of time preference is used to designate the comparison of current and future utilities. This comparison may be seen to imply an act of will, an actual choice or decision. Time preference seems a useful concept for describing behavior, but it still does not solve the problem of "the prompt to action" in a more general way. I shall later return to the latest, behaviorally oriented thinking on time preferences.

### Self Command and Self-Control

#### DECLINING SAVING RATIOS AND DECLINING SELF-CONTROL?

Saving ratios (total saving in relation to total disposable income) have been declining in most Western industrial countries over the last decade. Economic rationality interpreted as an attempt to maximize lifecycle income does not necessarily lead to saving. Equalizing the income available for consumption in each budget period over the life cycle leads to saving at certain lifecycle stages and to dissaving at other stages according to the life-cycle hypothesis. If there is no growth, what one age group saves is spent by another age group according to the life-cycle hypothesis.

In a welfare society it is conceivable that an individual may reach a higher lifecycle income by not saving money, but by depending on the social benefits to the utmost. Certain benefits become available on the sole proviso that the receiver has no wealth or savings of his or her own. Rather than dissaving from saved buffers, the individual can rely on temporary aid from social security systems if there is a need. It is hardly likely that such behavior is very common, but there is sometimes the suspicion that one effect of social security systems is the removal of incentives to save.

Another way of expressing this is in terms of decreasing self-control. Maital and Maital (1991) suggest that in welfare societies there has been decreased self-control which may be responsible for the decline in savings. The reason is that there is less need for self-control in the old sense since the public sector (and employers) provide maximal security whatever ill events occur. Why should people then save? The decrease in saving can

hardly be explained by what Rae (1834/1905) asserted about the role of intellectual powers and prudence unless it is assumed that there is now less reflection in the society than earlier ("the extent of the intellectual powers"). Or does the society have less stability, law and order than before? Crime rates have undoubtedly climbed in many Western countries over the last decade. At any rate, in many discussions of individual saving the concept of self-control appears, mostly without attempts at defining it.

#### SELF COMMAND

In his "Theory of Moral Sentiments", Smith wrote about *self command* as enhancing prudence, a main component of virtue: "The man who lives within his income is naturally contented with his situation, which, by continual, though small accumulations, is growing better and better every day. He is enabled gradually to relax, both in the rigour of his parsimony and in the severity of his application; and he feels with double satisfaction this gradual increase of ease and enjoyment, from having felt before the hardship which attended the want of them. He has no anxiety to change so comfortable a situation, and does not go in quest of new enterprises and adventures, which might endanger, but could not well increase, the secure tranquillity which he actually enjoys." (Smith, 1759, p. 215). Smith saw prudence as the union of the two qualities of reason and understanding, on one hand, and self command on the other. He said that, although the principles of common prudence did not always govern the conduct of every individual, they always influenced that of the majority of every class or order. As an entrepreneur a person with self command in this sense would be risk averse! Entrepreneurs do not, however, see risks where others might and they are usually found to be moderate risk-takers.

Smith saw self command as the ability to take the view of the impartial, objective spectator who could see both the present and the future situation. The more a person was able to adopt the way of thinking of an objective spectator, the more he/she had self command. Smith more or less recommended that a person had dual selves, one self more impartial and objective than the other. The relationship between self command and the other components of virtue--prudence and benevolence/justice--was that self command was a prerequisite for their pursuit.

Schelling (1984) spoke of self-command in a somewhat different sense. It signifies a deliberate choice to accept pain in order to gain something. He assumes that men are characterized by alternating preferences and that there may be a wish to do away with some of the alternatives in a binding way and well in advance. The problem is called "anticipatory self-command" since it consists in finding ways of excluding future behaviors that are not wanted (with the preferences extant now). His examples are from a variety of fields and often refer to everyday experiences. He gives a number of recommendations for strengthening the self-command like enlisting the help of others, refraining from exposure to attractive stimuli, and blocking possibilities of yielding. In many ways these measures are similar to those that Elster (1977) proposed.

#### SELF-CONTROL, WILLPOWER, AND PROVISION FOR THE FUTURE

In the writings of the classical economists, discussions of cognitive factors such as perception of uncertainty as well as conative factors such as desire or even will can be

found. Some of them rather focussed on the cognitive aspects than on desire or will or goals. One example of this is Jevons (1871/1911). He did not pay much attention to the psychological problems of saving when he developed the theory of pain and pleasure which was the foundation of his utility theory. He talked about the uncertainty about the future and about what pain or pleasure the future would bring. While he stressed the importance of anticipation, he recognized that depending on age, income, and social class people had different power of anticipation (Jevons, 1871/1911, p.35):

"This power of anticipation must have a large influence in Economics; for upon it is based all accumulation of stocks of commodity to be consumed at a future time. That class or race of men who have the most foresight will work most for the future. The untutored savage, like the child, is wholly occupied with the pleasures and the troubles of the moment; the morrow is dimly felt; the limit of his horizon is but a few days off. The wants of a future year, or of a lifetime, are wholly unforeseen. But, in a state of civilization, a vague though powerful feeling of the future is the main incentive to industry and saving." Jevons finished his chapter on pleasure and pain with a brief, but emphatic discussion of the importance of considering uncertainty, stressing that when dealing with anticipations it is always necessary to think in terms of probabilities.

It is interesting to note that Jevons picked out the cognitive part of the complex behavior of saving. The ability to anticipate was the important prerequisite for saving. The underlying assumption behind this must be that to a rational person anticipation and uncertainty necessarily lead to the appropriate actions. It may be that the anticipation must exceed a certain level to tip over behavior.

Böhm-Bawerk (1888), on the other hand, was more explicit about factors that could mediate between cognition and action, leading to saving acts. His interest concerned time preferences: why people put lower value on a future good than on an immediately available one. He was more specifically intent on the questions of why there was interest on capital and what determined a certain interest rate. He formulated a kind of psychological theory which came to be known as *the impatience theory of saving*. The basic assumption was that people preferred a good here and now to goods in the future and that they demanded a compensation for abstaining from the good now.

Among the reasons given by Böhm-Bawerk for people's tendency to overvalue the present good as against the future good, his suggestion of a constantly undervaluing perspective of the future is of particular interest here. He propounded that three circumstances lay behind the undervaluation: (1) Erroneous beliefs on account of lack of imagination and ability to understand, (2) Flaws in will, making people prefer a smaller utility now to a larger utility later; (3) Uncertainty about the future.

Böhm-Bawerk thus distinguished between cognitive factors and volitional factors; the latter were factors impeding or expediting the saving act. He carefully pointed out that a person might "decide on the smaller present good although he knows well enough and at the moment of choice even specifically thinks that the future payment ["Einbusse"] is larger and that therefore his choice for his welfare on the whole is unfavorable." (p. 447). The reason for such behavior was thus not cognitive (having to do with "Wissen", knowledge) but rather a lack of will ("Willensfehler"). Then Böhm-Bawerk (p. 447)

makes a somewhat surprising statement: "I should not be surprised if the psychologists viewed also this case as a variant ["Abart"] of the first case: roughly in the way that the momentary weaker feeling vanquished the future stronger feeling only because the latter, although present, is not vivid and potent enough so as to be able to occupy our mind for itself." Böhm-Bawerk, in other words, demonstrated some hesitation about the necessity of the concept of will and intimated that a cognitive explanation in terms of the vividness and potency of the cognition was desired by the psychologists.

While Marshall (1890/1947) mostly referred to personal motivational factors, he stressed the cognitive aspects of the motivational forces. Talking about the definition of interest (as a reward for waiting), he said that in other words, the accumulation of wealth was dependent on man's *prospectiveness*: that is, his faculty of realizing the future. (p. 233). The growth of wealth "...involves in general a deliberate waiting for a pleasure which a person has (rightly or wrongly) the power of commanding in the immediate present, and that his willingness so to wait depends on his habit of vividly realizing the future and providing for it." James (1890, p.1182) formulated a similar problem in somewhat different words: "Since a willed movement is a movement preceded by an idea of itself, the problem of the will's education is the problem of how the idea of a movement can arouse the movement itself." If movement is replaced by "saving act", this neatly summarizes the problem of stimulating individual saving behavior.

Marshall seemed to believe in the varying power of cognitive habits rather than in will. Interestingly he thought that there had been a development towards more prospectiveness. "The habit of distinctly realizing the future and providing for it has developed itself slowly and fitfully in the course of man's history." (Marshall, 1890/1947, p. 224).

Most saving arose out of family affection according to Marshall, an idea that may have been inspired by Rae. This involved saving money for the well-being of the family both before and after one's death. "That men labour and save chiefly for the sake of their families and not for themselves, is shown by the fact that they seldom spend, after they have retired from work, more than the income that comes in from their savings, preferring to leave their stored-up wealth intact for their families; while in this country alone twenty millions a year are saved in the form of insurance policies and are available only after the death of those who save them."

Marshall noted that saving could become a fixed habit so that people continued to save even though they had no need for it and might accept to lose money by saving with a negative real interest rate. "And sometimes the force of habit started when they were really in need of money, has given them, by a sort of reflex action, an artificial and unreasoning pleasure in amassing wealth for its own sake" (Marshall, 1890/1947, p.228).

"The greatest savings are made by those who have been brought up on narrow means to stern hard work, who have retained their simple habits, in spite of success in business, and who nourish a contempt for showy expenditure and desire to be found at their death richer than they had been thought to be." (Marshall, 1890/1947, p.229). Here Marshall alludes to "desire" to be rich which is as close as he gets to the concept of will in the context of saving.

Marshall pointed out a factor that inhibited the will to save, namely, the possible insecurity of money saved: "The thriftlessness of early times was in a great measure due to the want of security that those who made provision for the future would enjoy it: only those who were already wealthy were strong enough to hold what they had saved; the laborious and self-denying peasant who had heaped up a little store of wealth only to see it taken from him by a stronger hand, was a constant warning to his neighbours to enjoy their pleasure and their rest when they could." (Ibid., p.226)

Mandeville had seen frugality in a nation as something arising out of necessity and not a virtue at all. Smith had seen frugality as a characteristic that was more or less part of human nature and operative under most circumstances. Marshall's views are similar to those of Mandeville if they are interpreted to mean that frugality comes out of necessity, but may continue as a commendable individual habit when it is no longer necessary to save to the same extent.

#### FISHER'S IMPATIENCE TO SPEND INCOME VS. OPPORTUNITY TO INVEST

The American economist Fisher (1930) took up Rae's thinking about the accumulation of wealth and Böhm-Bawerk's ideas about the role of time for the evaluation of goods and developed his own theory of interest. He elaborated the theory of time preference and found a quantitative way of dealing with time preference as a discounting process with a constant discounting factor. Fisher's (1930) book had the full title of: "The Theory of Interest. As Determined by IMPATIENCE To Spend Income and OPPORTUNITY To Invest It." He accepted Böhm-Bawerk's arguments about impatience and elaborated on them: "Impatience for income, therefore, depends for each individual on his income, on its size, time shape, and probability; but the particular form of this dependence differs according to the various characteristics of the individual." (Fisher 1930, p.89). The degree of impatience affected the utility of future goods and was thus important for the rate of interest that the individual was supposed to calculate with when discounting the value of future goods.

Fisher made Böhm-Bawerk's theory more detailed through listing and discussing a number of factors that contributed to increasing impatience. Six characteristics make the impatience to spend greater: 1) short-sightedness, 2) a weak will (the lack of self-control), 3) the habit of spending freely, 4) emphasis upon the shortness and uncertainty of life, 5) selfishness or the absence of any desire to provide for survivors, 6) slavish following of the whims of fashion.

The factors that decreased impatience to spend were the reverse of the above-mentioned. Fisher made a distinction between foresight and self-control similar to that of Böhm-Bawerk. "Foresight has to do with *thinking*; self-control, with *willing*. Though a weak will usually goes with a weak intellect, this is not necessarily so, nor always. The effect of a weak will is similar to the effect of inferior foresight." (Fisher, 1930, p.83). The last sentence indicates that there is some hesitation about the actual role of will; the more cognitively oriented concept of foresight may do the job. The personal factors served in addition to the income factors. Like Jevons and Böhm-Bawerk, Fisher had the opinion that certain population groups were more impatient to spend than others. Low age, low income and low social class were characteristics of such groups.



According to Fisher the causes leading to high impatience could be influenced through: (1) training that gives insight into the need for providing "for the proverbial rainy day", (2) training in self-control, (3) building up habits of thriftiness, on one hand avoiding avarice, on the other extravagancies, (4) better hygienic habits and health care which lead to a longer and healthier life, (5) incentives for taking better care of children and future generations, and (6) modification of fashion in favor of less ostentatious and harmful expenditures for lavish living. Caring for the family was to Fisher one of the important reasons for saving money, but he did not emphasize it as strongly as Marshall.

Fisher generalized his observations of individual characteristics to whole nations: "Where, as in Scotland, there are educational tendencies which instill the habit of thrift from childhood, the rate of interest tends to be low. Where, as in ancient Rome, at the time of its decline, there is a tendency toward reckless luxury, competition in ostentation, and degeneration in the bonds of family life, there is a consequent absence of any desire to prolong income beyond one's own term of life, and the rate of interest tends to be high." (Fisher, 1930, p.504). A degeneration in the bonds of family life is here again stressed as an explanatory factor for non-saving behavior. Without such bonds there were no educational tendencies which instilled the habit of thrift from childhood. Modern Western societies have been characterized by such dissolution of family bonds since some time. Fisher did not tell what could be done to make the population of a whole country less impatient to consume, but presumably he counted on the individual remedies as being efficient also at the aggregate level.

### **Time Preference, Precommitment and Self-Control**

#### **SELF-CONTROL AND TIME PREFERENCE**

Recent studies in the Netherlands indicate that measurements of people's time preferences contribute significantly to explaining saving (Ritzema, 1992). Time preferences were measured on a simple scale, representing different degrees of impulsiveness-thriftiness, in an interview survey of savings and saving habits.

What is a person's will at a certain moment may change to a later date. This common phenomenon is often referred to as "changes in tastes", something that causes difficulties in economic theory which has stable preferences as one of its main tenets. When a time preference has been established through a choice of a plan or an action, the individual should stick to that choice and not regret it or try to change it. If a person prefers now to spend on immediate, perhaps lavish consumption, he or she should not the next week or later regret that the money was not saved. The classical and neoclassical economists have spent considerable time trying to deal with this problem. It can be formulated in many ways and there are ways of handling changing preferences in economic analyses. In the present context the interest is focussed on why people sometimes or even often prefer to consume today rather than save money for tomorrow.

Jevons, Böhm-Bawerk and Marshall, all stressed that the value of a future good decreased very rapidly with the first lapse of time and then more slowly. Böhm-Bawerk said that in particular when the undervaluation (or lower evaluation of the future good) was caused by defects of will, there might be a strong difference between an enjoyment

which offered itself at the very moment, and one which did not. There was, however, only a small or no difference between an enjoyment which was pretty far away, and one which was farther away.

As mentioned before, self-control was by the early economists considered to be an important factor when explaining saving behavior. The degree of self-control can be conceptualized as degree of time preference. Persons with low self-control are assumed to have a strong preference for the present. They can be said to ask a high interest rate in their discount functions for future events or in more psychological terms be impatient. A common assumption is that discount functions fall very rapidly at first and then level off in the long run (see e.g. Jevons, 1871; Ainslie, 1975).

Marshall (1890/1947, p. 225) wrote: "Cases are not rare of men who alternate between earning two or three pounds a week and being reduced to the verge of starvation: the utility of a shilling to them when they are in employment is less than that of a penny when they are out of it, and yet they never attempt to make provision for the time of need." In a footnote he added: "They 'discount' the future benefits....at the rate of many thousands per cent per annum."

In a study of Dutch households, Antonides (1988) found that there were differences in discounting factors between people who saved and those who did not save. For the former the (by Antonides calculated) monthly discount factor was 0.014 % while it was 0.026% for non-savers. Non-savers with an optimistic view of the future had the highest discount factor: 0.035 % per month.

The decreasing value of an object with increasing remoteness in future time, is in economics expressed as an exponential function with a constant discount factor. (See Strotz, 1956). From the shape of the discount function it follows that it is easier to postpone decisions that involve some pain than to put them into immediate effect: "I shall start saving next year" is a decision that is easier to make than "I shall start to save as of this moment." In the present economic recession, some governments with budget deficits have few plans for immediate cuts in expenditures, but plenty of ideas for starting to save next year and the following years.

A puzzling problem is the question of changing tastes. People may by far prefer A to B, but still choose B on the basis of its presence here and now, while A does not become available until after a long wait. This implies that the discount functions for the two goods A and B cross somewhere, which they cannot do with a constant discount factor. It means a change of taste which can only with difficulty be handled by economic theory. Elster (1986, p. 15) deals with the relation between desires and behavior in a rather formal way: "Akrasia [weakness of the will] is characterized by the following features. (1) There is a *prima facie* judgement that X is good; (2) There is a *prima facie* judgement that Y is good; (3) There is an all things considered judgement that X is best; (4) There is the fact that Y is chosen. Taking a drink against one's own better judgement is a familiar example."

The fact that people had a tendency to change their plans over time led the economist Strotz (1956) to suggest a way of describing the phenomenon of changing tastes and also

to give some advice as to how the individual could safeguard against such behavior when it was unwanted. He proposed two ways to impose self-control so that undesirable crossings of discount functions could be prevented. People could a) precommit themselves or b) use the strategy of consistent planning. **Precommitment** can be exemplified by Ulysses's behavior in the episode with the Sirens; he tied himself to the mast so that he could not yield to the temptation. Strotz remarked that unluckily precommitment was more often of the negative kind. People used credit to consume immediately and were thus committed to save afterwards. **The strategy of consistent planning** consists in choosing the best of the plans that the individual counts on actually being able to follow. This entails some provision against deficient self-control in the future.

Strotz (1956), agreeing with Böhm-Bawerk (1888/1912) and Fisher (1930), thought that the proper discount functions were established early in life through the teaching of parents and through social pressure from the environment. Children and other "uninstructive" groups in society were too impatient in their discounting of the future. Ainslie (1975), a psychiatrist, further expanded Strotz' ideas and related them to psychological research. Similar to Jevons (1871), Böhm-Bawerk (1888), and Strotz (1956), Ainslie (1975) described a discount function that strongly overvalued objects and events that were close to the present. He suggests on the basis of psychological research, among other things in animal laboratories, that impulsiveness can be described in terms of a discount function, but that the functions do not follow the course of exponential functions with a constant exponent. He concludes that a hyperbola, meaning that the expected value of the object divided by the time before an object becomes available, is preferable to an exponential expression. The idea is further developed in a later paper, presented to an audience of economists (Ainslie, 1991) and in a book with the title "Picoeconomics: The strategic interaction of successive motivational states within the person" (Ainslie, 1992).

Ainslie (1975), followed by Elster (1977) proposed ways of overcoming the temporary superiority of the present as against objects available in the future. They accept precommitment as one way of overcoming impatience, but point out that another way was also used by Ulysses, to avoid exposure; Ulysses put wax into his sailors' ears so that they could not hear the singing of the Sirens. Elster (1977) systematically reviews ways of establishing self-control. There are several ways of tying oneself or precommitting oneself as Ulysses did. Sidebets are an example: "I'll give you a hundred dollars if I can't save enough for a trip round the world in twelve months." The ways of strengthening the self-control are part of a theory of what Elster calls imperfect rationality, meaning that the individual contrives means of compensating for a weak will or lack of self-control. Precommitment means binding oneself so that future impulses will not prevail and avoiding exposure means giving less room for getting new impulses. The tying can be internal and refer to "challenges" and sidebets which the individual makes to him- or herself or external so that there is some public that can take the culprit to task in case of failure to fulfill the commitment. Leading a hermit's life or avoiding environments with known temptations are examples of the second remedy. Making rules and punishing for transgression is a third mean of increasing the self-command.

Although these ideas have not been tested in saving contexts, they give food for thought about saving behavior. For example, they suggest that people may not actually make

decisions to save money, but rather deliberate on and decide on how to avoid spending money. They do this by refraining from exposure to temptations or by precommitments so that it becomes more difficult to spend than to save. The end of this line of thought is an economic theory of self-control, proposed by the economists Thaler and Shefrin (1981). The latter have applied their theory to saving behavior. While it may lack something as a theory of saving (cf. King, 1985), there are some implications of general interest. The authors assume that self-control is more or less by definition a question of conflict between opposing forces.

Similar to agency theory in business economics, the existence of a long-term force, which the authors call "the planner" and a short-term force which they name "the doer" is postulated. In agency theory this corresponds to the presumed conflict between hired managers and the owners of a firm. The planner influences the way money is spent in each period by setting up rules for the doer. The authors adhere to the postulate of rationality. They define saving or any other economic behavior as a conflict and split the person into two forces, both of which operate rationally, but with different preference functions. In a manner of speaking this means converting the Freudian theory of the ego, the superego and the id into the mathematical terms of the economic theory of rationality.

Self-control involves an effort according Thaler and Shefrin (1981). This assumption is elaborated in a more recent version of the theory which is now called "the behavioral life-cycle hypothesis". (Shefrin and Thaler, 1988). They explicitly relate it to the life-cycle hypothesis. The planner function in the model essentially has the role of distributing income over the rest of the life-cycle. The concept of self-control is one of the major aspects of this new model. The authors also use mental accounting and framing to explain saving processes and outcomes. Exercising self-control is seen as a cost: it takes some effort, sometimes a lot of effort to postpone consumption. This makes it possible to express self-control as a behavioral cost which can be studied in the same way as other behavioral costs, experimentally through varying antecedent conditions and through survey questions. The authors find that when confronted with savings data the model makes valid predictions.

#### NEGATIVE TIME PREFERENCES

Some recent thinking and experimental work on phenomena that were in fact touched upon by some of the classical economists have produced some hypotheses of great interest in connection with the characteristics of time preferences. A basic idea behind the new thinking is that people in general prefer improvement to deterioration. They tend to order things in such a way that a climax is reached rather than to put the best things first and risk an anticlimax. This implies that a *negative* time preference may at least sometimes be possible as an alternative to the generally assumed positive time preference (the strength of which is, however, assumed to vary). Economic utility theory predicts that things are rank ordered from most preferred to least preferred and chosen in that order, given a budget constraint. This new thinking leads to the idea that people may save money because they want future improvements--something to look forward to--in their standard of living. This again raises the question: where do people get the strength to live up to such aspirations? Is it enough to assume that if the perception of

possibilities for improvement are clear and vivid enough, the appropriate actions will ensue? Or is it necessary to assume something more: a will (desire) that is strong enough?

According to Loewenstein (1987), there are two kinds of utility to consider: the utility derived from actual consumption and the utility derived from anticipating future consumption. The latter, if positive, is called *savoring* and if negative, *dread*. When there is a preference for an improvement order, some preferred events will be postponed and some non-preferred events may be wanted earlier. The latter would for example be the case if a person waits for a painful operation: it is better to get it over with.

Summarizing the research evidence which is still rather slim, Loewenstein and Prelec (1991, p. 348) state: "Savoring and dread contribute to the preference for improvement because for gains, improving sequences allow decision makers to savor the best until the end of the sequence. With losses, getting the worst outcomes over with quickly eliminates dread. Adaptation and loss aversion induce preference for improvement because, over time, people tend to assimilate to ongoing stimuli and to evaluate new stimuli relative to their assimilation level. Thus, changes in, rather than levels of, consumption are the carriers of value. Improving sequences afford a continual series of positive departures (gains) from one's adaptation level; declining sequences provide a series of relative losses."

The conclusions cited above seem valid for actions that are sequential rather than single: "The differences that do prevail should instead perhaps be traced to different styles of mental bookkeeping, which will alone produce different degrees of impatience even with a common underlying rate of time preference. Any operation, custom, or habit that causes the stream of purposeful activity to fragment into a series of isolated choices, each involving a simple intertemporal tradeoff, and each unrelated to a larger plan, encourages impatient choices. Whereas the integral sequence frame, by fusing events into a coherent sequence, promotes concern for the future, thereby creating an appearance of negative time preference." (Loewenstein and Prelec, 1991, p.351). The implication of this thinking is that saving acts should not be promoted as separate actions. They should be embedded in sequences that involve improvement.

A similar idea was brought forward by Elster (1986, p.11): "I believe, however, that a person who takes his future states as given, rather than something created, is fundamentally irrational. Moreover, I believe a person will be better off by striving for connectedness, since only then will he be able to form the long-term plans that are a condition for living a meaningful life, even in the present."

In a recent paper, Loewenstein and Prelec (1993) elaborate the hypothesis on negative time preference. They indicate that the evidence so far is stronger for the existence of negative time preference when painful objects or events are involved (dread) than when the objects or events are attractive. The improvement order is interpreted as meaning that individuals do not want deteriorations, but rather an even spread of consumption over time. This is surprisingly similar to the main assumption of the life-cycle hypothesis.

## Concluding Remarks

The concept of will is elusive. Do we need it in the study of saving? It seems to me that there is a need for a concept which captures the desire "that prompts to action" as Rae (1834/1905) put it. To a behavioral scientist, it is an important prerequisite that the concept is amenable to measurement. It seems possible to map perceptions and beliefs fairly adequately. It is possible to elicit preferences from people, but there is still a mostly unbridged gap between desire and behavior as far as measurements are concerned, despite the progress in research on self-regulation.

The mainstream economists' focus on cognitive factors which has become more and more pronounced, has often been supplemented with two assumptions as ways of handling the volitional factors. The first assumption involves that if the cognitive image exceeds a certain threshold of strength and vividness, actions will result. The second assumption refers to the existence of stable personality characteristics. Some people have been thought to react forthwith to cognitions that implied action to provide for the future whereas others have been assumed to react more slowly, if at all. Differences in a certain personality characteristic, often called thriftiness, have been used to explain differences in reactions and hence in saving. There is as yet little support for such assumptions in psychological theory, but the idea of stable personality characteristics may be on its way back (Károlyi, 1993).

It is important in the present context that the discussion of the concept of will can lead to some ideas for practical use. If practical measures are derived from the discussion and they turn out to be successful, there is some confirmation of the value of the ideas though not of their validity in any strict sense of the word. This review of some literature gives hints for the encouragement of saving. The hints derive both from the cognitive aspects and from insights or hypotheses regarding volition.

It seems obvious that it is important to make the images of the utility of savings vivid and clear to people. This is implied in the writings of Marshall and several other economists. In social psychology there is some evidence that asking people to imagine the experience they will get if a certain act is performed facilitates conversion (Gregory et al., 1982; cf. Kahneman and Varey, 1991: experience preference). Fisher (1930) was confident that the impatience to spend money rather than invest could be mitigated by means of education and training. He prescribed remedial actions for cognitive as well as for volitional deficiencies.

Others have directly or by implication advocated the use of rules as means of vanquishing volitional difficulties. Precommitments of an interpersonal or purely internal nature may help to some extent (if the difficulty of making the decision of precommitment is somehow overcome). Removing possibilities through avoiding exposure to certain temptations is another way (putting wax into one's ears). A difficulty not mentioned earlier is that household saving is often a matter of interaction between two or more family members who may disagree more or less vocally about immediate and future uses of money.

Evidently, many of the economists reviewed here were aware of the existence of

cognitive, affective and conative (volitional ) factors of import for economic behavior, notably saving. Although they discussed affects and volition to some extent, their main preoccupation was with cognitive factors. The main cognitive factor was uncertainty about the future: uncertainty about the length of life, future work and income, and the future value of assets. It seems fair to say that the development of economic theory meant increasing disregard for affects and volition and an increasing reliance on cognitive factors. The latter were assumed to be subjective, but could and should be treated as completely specified by objective circumstances.

The so-called cognitive revolution in psychology has led to new knowledge and new approaches in psychological research. "The approach to intelligence and individual differences is beginning to be modified in an information-processing direction. But we are just beginning to see that, because of the strong dependence of intelligence on stored knowledge, cognitive and social psychology must be brought much closer together than they have been in the recent past. When we have made these new connections solid, the challenge will remain of bringing affect and emotion more centrally into the picture." (Simon, 1990, p. 18). It will still take some time before the questions about the will to save money can be properly answered!

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