PSYCHOLOGICAL APPROACHES TO THE STUDY OF SAVING

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Studies in Consumer Savings

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Studies in Consumer Savings, No. 7

PSYCHOLOGICAL APPROACHES TO THE STUDY OF SAVING

Folke Ölander and Carl-Magnus Seipel

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FOREWORD

The research from which this volume derives was planned and carried out by the authors independently of the Consumer Savings Project at the University of Illinois. It presents the results of the authors' research and studies at the Economic Research Institute at the Stockholm School of Economics where they are working as research fellows in the section for economic psychology. The publishers consider it a valuable addition to the Studies in Consumer Savings. Its effect will be to broaden the project by including the findings from another discipline which aims at the same goal of explaining consumer behavior. Approaching the problem from another point of view provides a better perspective for analysis and understanding of all the interrelated phenomena under consideration.

V Lewis Bassie

PREFACE

In 1967 an early version of this monograph was published in Swedish as a mimeographed research report from the Economic Research Institute at the Stockholm School of Economics. Work on the report was made possible by a grant from the Swedish Saving Banks' Foundation for Economic Research. We wish to express our gratitude to the foundation for giving us the opportunity to venture into an area which, although to us interesting and promising, has attracted only limited attention from behavioral scientists.

The main purpose of this monograph is to present researchers in the field with a synthesis of already existing knowledge about the psychological aspects of saving, in the hope that it will provide a stimulus for more extensive research in the area. We have also made an attempt at erecting a theoretical framework in order to give structure to our own empirical research (which at present primarily deals with the question of the extent to which people try to affect their income in order to reach desired saving and consumption standards). It is our hope that this theoretical framework will be of interest to other investigators also.

The monograph differs from the earlier Swedish version mainly in that we have tried to update the review of the literature. We have also added a section on the potential importance of personality traits as explanatory variables in research on saving.

We are grateful to Professors V Lewis Bassie and Robert Ferber for their interest and helpfulness in connection with the publication of our work in the series Studies in Consumer Savings, published by the Bureau of Economic and Business Research at the University of Illinois.

Our thanks are also due to Mr. Hunter Mabon who translated the Swedish manuscript into English, and to the Swedish Council for Social Science Research for financing the translation.

Finally we want to thank colleagues and friends at the Economic Research Institute at the Stockholm School of Economics, who have supported us with ideas and criticism during our work on the study.

Stockholm
July 1969

Folke Ölander
Carl-Magnus Seipel

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I. PURPOSE OF THE STUDY

This report is an account of the results from the first stage of a research project which aims at elucidating certain aspects of individual saving with the aid of psychological and other behavioral science methods.

The phenomenon of saving has been dealt with in many different economic theories, but several circumstances contribute to the fact that the factors influencing the saving behavior of private individuals have not been investigated to any large extent. In the first place, economics is often treated as a deductive science in which theorems and theories are, on purely logical grounds, deduced from a number of postulates, including those concerning individual behavior. Second, the main emphasis in economics is on studying aggregate behavior and problems such as employment, inflation, and economic growth. In research on these problems, little attention is devoted to individual differences in saving since these, it is assumed, largely depend on never-changing differences in "taste" and on random fluctuations which tend to cancel out when data are aggregated. Third, to the extent that genuine interest in realistic descriptions of individual economic behavior exists, attention has primarily been devoted to *buyer behavior,* especially the purchasing and consumption of durable goods. Some of the reasons for this are probably that saving is regarded as more or less passive, a view borrowed from macroeconomic theories, and that in marketing-oriented economic theory interest is concentrated on the selling of goods. The underlying assumption is often that saving during a period arises as a residual after the individual has made all the decisions and outlays concerning consumption. It appears intuitively justifiable to question the universality of this assumption, and there appears to be a good case also for allowing individual saving to be a focal point of research.

In order to create a framework for future empirical research on individual saving, the first stage of the project has been devoted to a critical review of the literature and the construction of a conceptual scheme or model based on psychological thinking. We begin this report by giving an account of the model, which in turn permits the systematization of different theories and empirical studies of individual saving.

It should be pointed out that the review of the literature has presented us with considerable difficulties. As has already been stated, economists have not to any large extent made special studies of the problems concerning individual knowledge, values, and decisions in connection with saving. Nor have psychologists shown any great interest in saving. This means that almost all of the material is only *indirectly* related to our theoretical scheme and is difficult to put into systematic form. Researchers who have dealt with the problem of individual saving have had extremely varied backgrounds and aims. A review of their works would require an account of these backgrounds and aims, and we have not considered this to be feasible. It is impossible, for example, without vastly increasing the scope and size of the study, to give an account of business cycle theories, simply because these theories happen to contain some discussion of individual saving. Nor have we considered it possible, other than very briefly, to report research results or to examine the methodology in the many different studies of individual income, saving, and consumption which abound.[1] These features of a literature review have had to be sacrificed in order to attain a more important goal, namely, that of placing a large number of research efforts within the model to be outlined. A minimum of space has thus been devoted to descriptions of the background and methodological approach of each individual study and of the data presented in the studies. The emphasis is on providing a description of the approaches adopted by various students of saving behavior. We have aimed primarily at providing as complete a coverage as possible of studies with a psychological frame of reference, whereas econometric studies of saving are briefly and incompletely reported.

[1] Reviews concentrating on research in individual and household economic behavior carried out by means of large *surveys*, and also dealing with the methodological problems involved in such studies, have been provided by J. N. Morgan [184, 187].

Bracketed numbers refer to entries in the list of references at the end of the study.

II. WAYS OF DESCRIBING THE INDIVIDUAL SAVING PROCESS

In this chapter an attempt will be made to describe in a crude fashion how certain theorists view the factors which, according to their theories, determine the extent of individual saving. Discussion of what should really be understood by the term *saving* and of various definitions and measures of saving is postponed until Chapter III.

Classical Economic Theories

Classical economic "pre-Keynesian" theories of consumer behavior can be said to provide every individual with a type of decision strategy for his actions. The strategy implies that the individual compares the value of immediately spending all of his resources on consumption with the value of postponing some part of this consumption until a later date. The value of the delayed consumption depends on expectations of price fluctuations, of the interest which can be obtained from savings (which affects the price of future consumption), and finally of the unpleasantness, the "disutility," which refraining from immediate consumption may involve.

According to the classical school of thought, saving per se has little or no value. The comparison on which the decision to save or not is to be based is thus defined as a comparison between the opportunities for consuming more at a later date and the disutility connected with refraining from immediate consumption. Nothing specific is said, however, about the manner in which people compare the utility of immediate consumption with the utility of future consumption or about the outcome of this comparison. The only assumption made (as in most theories of consumer choice) is that a course of action which leads to consequences more highly valued in one respect than are the consequences of some other course of action will be preferred to the second course of action, if in other respects the consequences are the same for both actions. On applying this argument, the basic feature of classical theories of saving came to be the pre-

diction that the degree of saving will be extremely sensitive to interest rates (especially since the discussion often concerns situations with stable prices).[2]

Applying the classical model to the description of individual consumer behavior thus presupposes that the consumer is, as a minimum, informed of the current rate of interest and is able to assess the amount of consumption which saving can give rise to in the future, as well as to form an impression of the degree of disutility involved in postponing various amounts of potential immediate consumption. The economic theories assumed, of course, that the individual made the assessments of interest and of costs for future consumption (interest gains included) in a veridical fashion. The disutility of refraining from immediate consumption must, however, necessarily have been regarded as a subjective experience, varying between individuals (although probably constant over time and marginally decreasing with the level of current consumption).

It is, however, worth noting that the model may be useful and have some explanatory value at the individual level, even if the public's knowledge of interest rates and costs for future consumption in no way agrees with the "true" values computed by economists. By measuring different people's subjective notions of the interest rate and costs for future consumption or by means of experimental manipulation of these notions, it should, in principle, be possible to investigate the influence of these subjective variables on saving, in the same way as the influence of the "objective" rate of interest on saving can be studied. A similar study could presumably be made of the effects of variations in perceived "disutility of postponed consumption."

J. M. Keynes

Keynes introduced new ideas concerning the determinants of saving. One of his changes in the classical theory is the assumption that the behavior of the consumer unit is *not* to any great extent influenced by changes in interest rates within an economically plausible field of variation. Furthermore, the value of saving per se is stressed to a considerably greater extent. The idea that saving is motivated only by the explicit planning of future (postponed) consumption is replaced by a whole series of possible reasons for the "utility" of saving.[3]

The most important feature of Keynes's theory of consumer behavior

[2] This description of classical economic theories is, of course, extremely abridged and simplified. See Gardner Ackley [1] and D. B. Suits [266] for a more detailed summary of the basic ideas in the theories. Werner Paschke has presented [220] an extensive review of the various saving motives and mechanisms postulated by economic thinkers from Xenophon to the present.

[3] This list of reasons as to why saving may be attractive has frequently been criticized as arbitrary and based on introspection. See R. Schröder [244].

is, however, the thesis that the extent of saving, at least in the short run, is more or less completely determined by the size of real income. This idea has given rise to a multitude of empirical studies aimed at investigating the correctness of the thesis (Robert Ferber [63]). Keynes's hypothesis about the way in which income is related to consumption and saving is expressed primarily in the "fundamental psychological law" which he postulated. The law states that the marginal propensity to consume when income increases is positive, but less than 1, that is, that part of an increase in income is devoted to consumption and part to saving. A less essential hypothesis states that the average saving ratio increases with increasing income (see Ackley [1], p. 219).

In the original version there are no explicit descriptions of the problem-solving processes "within the individual" which correspond to the assumed behavior. A number of authors have shown, however, that it is easy to formulate Keynes's theory in the same terms and with the aid of the same model as that applied in the older theory for consumption and saving (Ackley [1]). If different amounts of saving as well as different amounts of consumption can be assigned different utilities, and the marginal utility of both saving and consumption is decreasing, it is easy to show that only a part of an increase in income will be devoted to consumption (and only a part to saving). Keynes's assumptions about individual saving can thus be translated into assumptions about the presence of different types of subjective variables and mechanisms within the individual. If saving is regarded as a function of income only, without postulating or investigating intervening factors within the individual or the individual's behavioral sphere, Keynes's theory of saving would, however, perhaps be classified by psychologists as a stimulus-response model. Later in this chapter the psychologist's way of classifying different models of the saving process will be treated more extensively.

George Katona

We will have good reason to mention George Katona many times in this study. No psychologist has devoted greater effort to attempting to determine the reasons for the economic behavior of individuals, both regarding the balancing of consumption and saving and the choice between various types of consumption. Thus, if we want to describe a "noneconomic" model of consumption and saving processes, Katona's work is the obvious choice. Providing a brief account of his work, however, is not particularly easy. This is partly because of the great productivity of Katona and his colleagues, but also because Katona himself in his writings has hardly described the model which underlies his work explicitly and in detail. The following description which must, therefore, be regarded as

somewhat tentative is based primarily on Katona's book, *The Powerful Consumer* ([119], especially Ch. 4),[4] and on F. M. Nicosia's interpretation [210] of Katona's model.

Consumer behavior, according to Katona, is a function of economic *stimuli* of different types and of *intervening variables* within the individual, such as personality, attitudes, expectations, and motives. "Habits" may also be classified as intervening variables, according to Katona. The intervening variables can also be divided into enduring and variable traits. The former include more permanent personality traits, the latter subjective expectations concerning good or bad conditions arising in the future. Stimuli can be divided into two classes, according to Katona: economic stimuli, such as level of income and wealth, and other stimuli (sometimes called "precipitating circumstances"). The latter include a number of factors such as information via mass media about national events, wage changes, and economic occurrences of a private nature, such as that of one's car breaking down.

The intervening variables act as a filter influencing perception in such a way that the subjective impression of stimuli does not always agree with the "objective" reality. The idea is also that changes in intervening variables can be used to predict changes in consumer behavior. Behavior of consumers can be divided into two classes: actions determined by habits or by decisions in previous time periods, and actions which may be regarded as choices ("discretionary expenditures" and "discretionary saving").

In his empirical studies, Katona has been primarily interested in changes in behavior over time. As a result, his studies of the influence of intervening variables on behavior have been almost entirely concentrated upon the variable traits, especially the assessment of the current economic situation — general and private — in relation to yesterday's, and of tomorrow's economic situation in relation to that of today. Katona considers the more or less basic personality traits which may explain some of the individual differences in consumer behavior to be of limited interest, since in the short run they do not vary to any large extent. In a subsequent section (Chapter III, "Saving as the Result of Behavior") we shall return to the question of whether psychological research on saving should be aimed at explaining differences in behavior between individuals at a given time, or at explaining behavioral changes in an individual or a group of individuals, a question which can be regarded as central for students of individual saving.

Nicosia points out ([210], pp. 93-96) that Katona's research group, in its empirical work, has hardly fully used the total model outlined here.

[4] Another general statement of his "principles of adaptive consumer behavior" has appeared in Katona [125].

The relationship between stimuli and intervening variables, for example, has been studied only to a limited extent. This is especially true of the proposed role of attitudes as a filter between the objective environment (the stimuli) and the perceived environment. Furthermore, according to Nicosia, the feedback processes which must be expected to lead from behavior to internal variables have not been made explicit enough. Nicosia maintains that Katona has on the whole devoted insufficient interest to individual psychological structure, while using psychologically uninteresting statistical models to investigate the ability of certain attitudes and expectations to predict behavior.

We should like to add the view that the division of actions into habitual behavior and genuine decisions is difficult to comprehend. The criteria which denote a genuine decision, according to Katona ([119], pp. 139-45), are, among other things, (1) that alternative courses of action and their consequences must be taken into consideration before the action in question is taken, and (2) that an action based on a genuine decision is usually recognized as a *deviation* from habitual behavior "under the impact of strong motivational forces and new events" (p. 141). The requirement that alternative courses of action must have been taken into account appears to imply that the individual must state that he has made a conscious choice. This requirement appears to us to be debatable — see the subsequent discussion in this chapter. It can, furthermore, lead to a grouping of actions into genuine decisions and habitual behavior which is different from the grouping obtained by applying the other, more "behavioristic" criterion for genuine decisions, that is, the requirement that the action must be "unusual." Even a conscious deliberation may well lead to the repetition of previous behavior. Other objections may also be made to this dichotomization which, in our opinion, involves a confusion of two grounds of classification: "frequency of behavior" and "etiology of behavior." It appears probable that the lack of a formal description of individual psychological structure in Katona's model, which was pointed out by Nicosia, has contributed to the somewhat unclear distinction between genuine decisions and other behavior.

Summing up, it may be said that the general model used by the Katona group for the consumption process is usually as follows: Economic and other stimuli → changes in attitudes and expectations → changes in behavior.

Consumption and Saving as a Decision Process

We shall now outline the model of saving processes which has been used as a basis for the review of empirical attempts to study individual saving, to be presented in subsequent sections of this monograph. In the

model both consumption and saving are regarded as *decision processes*. A previous account of certain basic features of the model is to be found in a paper by Folke Ölander [214].

A decision process in its general form is often assumed to contain the following steps:

(1) Perception and/or construction of courses of action;

(2) Determination of consequences connected with each action and of probabilities of the relationships between actions and consequences;

(3) Subjective evaluation of consequences (assignment of utilities); and

(4) Choice and execution of a particular course of action with the aid of a decision criterion which gives priority to one of the different courses of action on the basis of the relationships determined in Step 2 and the evaluations of consequences carried out in Step 3.

Using a saving decision as an example, we shall attempt to make this outline of the decision process more concrete. Let us assume that in an experiment we give a person a large sum of money and that the investigator's task is to attempt to predict what the person will do with the money. The person can clearly use the sum in various ways — for example, for consumption in the form of buying of capital goods, for depositing it in a savings account in the bank, for buying shares, or for lending the money to a friend. These and other possible disposals of the money are the courses of action open to the individual.

The various ways of using the money which are to be regarded as possible courses of action are defined and listed by the investigator, who wishes to examine and predict the individual's behavior. If the investigator has the time and the opportunity he may, of course, interview the individual about possible alternative ways of using a given sum of money and add those alternatives stated by the individual which did not appear on the original list; for example, the alternative of giving the money away. It is also possible that the investigator may limit the list to the courses of action stated by the individual, but the risk involved there is that, because of an oversight or for other reasons, the individual does not mention a certain alternative which he may, in fact, subsequently choose. Furthermore, in using this approach, the investigator may have difficulties in identifying and determining the actual behavior corresponding to the course of action constructed and reported by the individual himself.

The next step in the investigator's examination is to determine the consequences which the individual believes are connected with the different courses of action. The investigator first attempts to determine the individual's expectations regarding the "cash flows" (the value of his money and its changes over time because of interest, inflation, changes in

stock prices, and so on) that may result from the choice of a saving alternative, and the "commodity flows" (the utility obtained by consuming goods) that may result from the choice of a consumption alternative.

The different saving alternatives can be compared with respect to liquidity and other features. The different consumption alternatives can be evaluated with respect to those features which the products bought may be assumed to possess. If the investigator applies the decision model, he will also attempt to find out something about how certain or probable the individual believes it to be that different possible consequences will arise. An example of this would be the attempt to obtain a subjective probability distribution for different outcomes of the stock-purchasing alternative. At any stage, it is possible that the investigator will obtain inarticulate or uncertain answers, but this may also be regarded as valuable information for the investigator, as is the case of information suggesting that the individual is completely misinformed of the objective consequences of different courses of action.

The next stage will investigate the evaluation of the consequences. Different methods are possible here. The individual may, for example, be asked to estimate the utility of different consequences by means of a preference or attractiveness scale. The attractiveness (as well as the probabilities) of different consequences can sometimes also be assessed with the aid of some special experimental setup (G. M. Becker and C. G. McClintock [10]; Ölander [214]). Another possibility is to attempt to relate the various flows of cash and commodities to certain goals aspired to or to values held by the individual, goals and values of a more or less general and abstract nature. The *saving motives,* which a number of studies have attempted to reveal, and an account of which is presented in Chapter V of this study, may often be classified as goals or goal states at a higher level of abstraction than are flows of cash or commodities: security, the wish to give one's children a good start in life, the desire for a home of one's own, and so forth. A careful study should thus also include questions concerning the importance which the individual places on these various goals and the perceived relationships between the goals on the one hand and the flows of cash and commodities or the given courses of action on the other. Means-end chains of this type can, of course, be extended almost ad infinitum, but in practice it appears impossible to work with more than the two levels suggested here.

It should be pointed out that means-end models have latterly been applied and studied, not only in decision theory but also in modern attitude theory (see, in particular, M. J. Rosenberg [231, 232]). The relationships between means and abstract goals are in the attitude literature often called

instrumental relationships. The idea has also been presented in the economics literature, in the sense that the consumer chooses among different goals in his consumption and that commodities should not be regarded as the genuine objects of preference, but rather as means to attain more or less preferred goals. Two spokesmen for this interpretation are J. R. Hicks [97] and E. G. Furubotn [77].

Finally, the investigator will probably attempt to determine which decision criterion the individual might be expected to use. It is perhaps unnecessary to study decision criteria if the individual experiences no uncertainty concerning the consequences of different actions. In that case, the only reasonable prediction (which need not, however, necessarily be correct) is that the individual chooses the course of action the consequences of which are regarded as being most advantageous. In such a situation, it is unlikely that the individual is able to make any distinction between action and consequence at all. The courses of action are perceived directly as being advantageous or disadvantageous. But, if there is uncertainty concerning the consequences of one or of several courses of action, or concerning the relationships between the consequences (cash and commodity flows) and higher goals, then factors such as the individual's inclination to take risks, the trait of optimism versus pessimism, and so on, may influence his decisions. If the choice situation is specified in formal terms, where the consequences of each course of action are assigned numerical values and probabilities, the individual's decision criterion may be expressed as, for example, one of the following:

(1) The criterion of choosing the alternative with the highest expected utility (the maximization criterion);

(2) The criterion of choosing the alternative which renders the best outcome in terms of utility if things go badly (the maximin criterion); or

(3) The criterion of choosing the first perceived alternative where the utility values of all of the consequences are located above a given level of aspiration (the satisficing criterion).

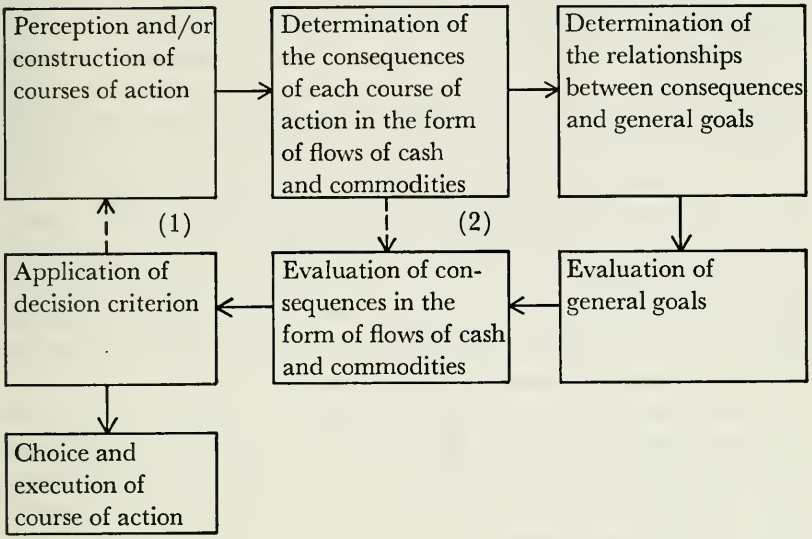
The tendency to apply one of these criteria may in certain cases also be estimated with the aid of experimentation (Ölander [214]). It is, however, also possible that certain instruments for the measurement of personality (especially those concerning risk-taking tendencies, need of security, optimism versus pessimism, and so on) may provide indications of the choice criterion preferred by the individual.

We have now exemplified the various stages in the decision model which we a priori consider to be applicable for the analysis of any consumption or saving process. The model is presented in Chart 1.

The application of the model involves an assumption that all acts of

CHART 1. OUTLINE OF A DECISION PROCESS

The broken line (1) shows that the cycle is repeated if no alternative is found to be acceptable when the individual's decision criterion is applied. The broken line (2) illustrates the idea that a decision process does not necessarily include the determination of the final consequences of each course of action in terms of general goals. A shortcut may thus be taken, especially for routine decisions.



consumption and saving may be regarded as *choices*. This assumption should not be confused with the supposition that the consumer always makes a conscious choice among different courses of action. Our basic tenet is that the choice situation is defined by the investigator, the observer; whenever it is observed that an individual has two or more courses of action to choose among in a given situation, this is said to constitute a choice situation. Whether the individual is conscious of (is able to verbalize) a choice being made may be said to be irrelevant according to this line of thinking. It might be maintained with reference to consumption and saving that the individual in principle always finds himself in a decision situation, since certain resources, such as income or wealth, normally exist and must, therefore, be dealt with and distributed at every instant in some way. Some division of time into periods is, of course, necessary in reality (which is dealt with in Chapter III, "Saving as the Result of Behavior" and "Studies of the Microstructure of *R* Variables") but each period of time must be regarded as a choice situation for each individual, according to our position. It is, of course, possible to attempt to define and study a specific group of choice situations, that is, those in which the individual in some way states that he is conscious of making a

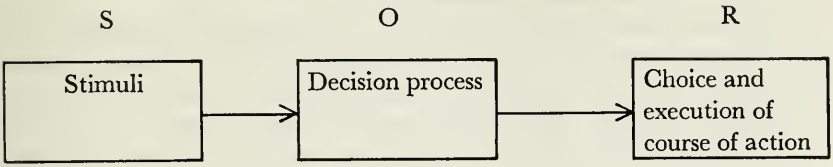
decision or a choice, but the advantages of attempting to describe all consumption acts in the same terms are readily apparent.

It is, on the other hand, equally apparent that certain studies of consumer behavior show that the decision process preceding a purchase or some other act determining the distribution of available resources, for example, the entering into a "saving contract," is incomplete. Common faults in the decision process are that few courses of action are taken into account or are even known, that the assessment of different possible consequences of a given action is made in a crude and uncertain manner, that the decision criterion applied by the consumer is very rough and probably impossible to verbalize, and so on. Such observations do not, however, in our opinion, make the whole of the decision model untenable. Instead they only affect the values assumed by the variables included in the model; the number of alternative courses of action will be small; the scale for the evaluation of consequences may perhaps contain only two levels (acceptable and unacceptable); the assessment of relationships between actions and consequences will be unreliable; and so on.

It is impossible to say at present whether the manner of describing consumer behavior implied by the decision model will, in the long run, turn out to be profitable. Our application of this model is a matter of faith, based on the facts that decision-oriented descriptions of behavior have in recent years become relatively common within a number of areas of psychological research, from psychophysics to studies of complicated problem-solving, and that many researchers appear to have some faith in the applicability of the decision paradigm.

It is, of course, conceivable that models which more heavily stress the learning aspect of behavior (models which frequently use a smaller number of variables in their descriptions of individuals) may eventually turn out to be more fruitful. It may be maintained, for example, that the decision model presupposes a number of variables and processes within the individual which are either not available for empirical observation or, if observable, constitute experiences of the epi-phenomenon type, experiences which cannot be meaningfully applied in attempts at causal explanations. Our point of view is, however, that it is possible to develop measurement techniques for all the variables which are included in the decision model. The decisive test for the applicability of the model is whether stable relationships can be found between experimental manipulations of the variables in the model and changes in behavior. If such relationships are found, the relatively large number of variables in the model ought to be an advantage, at least in connection with information and propaganda activities, since the model can bring to light the components in the indi-

Chart 2. The Stimulus-Organism-Response Model



vidual's perceptual and cognitive world which appear easiest to affect with the aid of external stimuli.

Inclusion of the Decision Process in a More Extensive Frame of Reference

The information which an individual possesses concerning different courses of action must of necessity derive from the environment in which he finds himself and from the stimuli occurring in that environment. Thus, the schematic outline of decision processes will now be placed in a broader framework widely used by psychologists, which is usually termed the *S-O-R* model (stimulus-organism-response). All of the subjective phenomena which we have included in the model of the decision process (the perception of courses of action, knowledge and evaluation of the consequences of the alternative courses of action, decision criteria, and so forth) may be regarded as *organism variables.* The choice and execution of one of the courses of action — the last step in our model of a decision process — may be called a *response* (see Chart 2).

Our use of the *S-O-R* terminology should perhaps be commented upon. As responses we denote only the execution of courses of action and certain activities such as planning and searching for information[5] whereas, for example, perception of stimuli — which, of course, can only be studied operationally as some type of reaction or response — has been classified as a phenomenon concerning the set of organism variables, that is, as a change in the existing structure of the organism. It might be added that when psychologists describe organisms, they use an extremely wide range of variables. It is difficult to determine how far one can go in forcing a large number of concepts into a common framework. A classification in terms of the decision process appears possible, however, for at least certain traditional organism variables, for example, many variables normally reckoned among cognitions, knowledge, attitudes, and personality traits. Our aim, so far as is possible, has been to place every organism variable

[5] Activities such as planning or searching for information are discussed in Chapter III, "Studies of the Microstructure of *R* Variables."

studied in connection with saving in one of the classes of variables included in the model of the decision process.

Situation stimuli may be thought of as influencing the organism variables — and thereby indirectly the responses, that is, the choices of courses of action — in a number of different ways. The occurrence of stimuli may, for example, result in the individual noticing certain *courses of action,* or cause him to change his opinion about the *consequences* connected with the courses of action (or about the probabilities of the connections between actions and consequences). The stimuli may also draw attention to certain *goals* and thereby more or less temporarily change the evaluations of courses of action, consequences, and goals, or — at least in the somewhat longer run — influence the individual's decision criterion, for example, in the direction of greater caution or audacity.

The effects of situation stimuli on behavior, that is, on choices of courses of action, may be studied in different ways and at different levels of complexity. An approach common in psychology and, as we shall see, in studies of economic behavior, is to study the individual's *perception* of stimuli only, without bothering very much about the effects of the perception on other variables. At another level of inquiry, studies are made of how stimuli, via perceptual and other screening mechanisms, lead to the establishment of or changes in organism variables, such as attitudes, personality traits, evaluations of goal states, and knowledge of consequences. Both these types of approaches are here referred to as studies of *S-O* relationships.

A more complete experimental paradigm studies a complete *S-O-R* chain. In such a study attempts are made to determine whether different combinations of *S* and *O* variables lead to different actions, and how the mechanism for *interaction* between *S* and *O* variables is constructed. Studies of complete *S-O-R* chains are, however, relatively uncommon in many areas of psychology, including consumer psychology.[6] A common alternative is to refrain entirely from attempts at describing variables or processes within the organism (and possible interindividual differences in these variables and processes) and to restrict oneself to the study of links between certain forms of stimuli and situations, on the one hand, and certain alternative courses of actions on the other. This latter type of study may be called the study of *S-R* relationships.

[6] Computations of multiple linear regressions, in which *S* and *O* variables are combined in order to improve the prediction of *R* can hardly be regarded as studies of *S-O-R* chains. The model which is postulated in making these computations assumes, in fact, that no interaction between the variables exists. The technique developed by J. A. Sonquist and Morgan [190, 260], and recently used widely in economic psychology, seems better suited for the disentangling and analyzing of *S-O-R* chains. The scope of the conclusions is still being limited, of course, by the difficulties of making causal inferences from nonexperimental data.

Classical Economic Theories, Keynes, and Katona in Relation to the Frame of Reference Outlined

Let us for a moment look at the extent to which the models of saving behavior outlined in the beginning of this chapter (classical and Keynesian economic theory and Katona's theory, respectively) cover the relatively detailed conception of the process preceding saving which has been presented. Both in the economic theories and in Katona's work primary interest has been devoted to *R* variables in the form of *changes* in behavior. Other *R* variables are also possible, as is shown in Chapter III, "Saving as the Result of Behavior," and "Studies of the Microstructure of *R* Variables." The classical economic theories outlined a type of decision process but made no serious attempt to investigate the measurability of the postulated components of the process. The only *S* variable to which serious interest was devoted, that, is, the current rate of interest, was assumed to influence all individuals, who were assumed to be reached by the information about interest rates and to grasp this information in the correct manner.

In Keynes's account, the level of income replaces the rate of interest as the decisive *S* variable, but very little attention is given to organism variables or decision processes. The list of saving motives has hardly any real function in Keynes's theory since nothing is stated concerning the measurability and variability of the motives or how individual differences in motives may come about. Thus, it may be stated that the descriptions of economic theory cover a very small portion of the process which we believe it necessary to study in order to explain individual saving and purchasing behavior.

Many of the econometric models and studies which have been made subsequent to the work of Keynes have been based on models of the same general type, that is, *S-R* models, although the register of *S* variables has been increased considerably, for example, by adding variables such as liquid assets and wealth.[7] A common method for establishing which *S* variables appear to influence behavior is multiple regression, a method which in itself implies certain assumptions concerning the joint effects of the various *S* variables. The choice of independent variables in economic *S-R* models derives in certain cases, of course, from observations of or theories and speculations concerning the information which the individual uses in his decision-making; that is, the choice of *S* variables is based on considerations concerning *O* processes. In other cases the *S* variables chosen

[7] For a recent example of a suggested model of consumer behavior of this type, see Jean Crockett [47]. For general reviews of different econometric models see, for example, Ferber [63] or Heinz Gollnick [79].

will be derived from macroeconomic or public finance theory, or merely from trial and error procedures.

Katona's model of consumer behavior is more elaborate. As previously pointed out a relatively limited part of the model has, however, dominated the empirical studies. Katona and his colleagues have primarily aimed at studying *O-R* relationships and at showing how certain organism variables, that is, assessments of various aspects of the economic situation (which according to our terminology may be regarded as assessments of consequences and probabilities), influence changes in individual behavior. As our review will subsequently show, Katona has also to some extent shown interest in *S-O* links in the form of attempts to study how individuals perceive economic events. However, Katona strongly maintains (for example, see [119]) that *O* variables such as attitudes and expectations, despite the fact that they may change over time, can be explained only to a limited extent with the aid of *S* variables such as general and personal economic events, and that they more or less vary autonomously.[8] Those studies in which both *S* and *O* variables have been used in order to predict behavior have been of the multiple regression type (Eva Mueller [199, 200]) and cannot be regarded as studies of *S-O-R* chains (see footnote 6). No formal statement of how *S* and *O* are conceived to interact in choices of *R* seems to have been presented by Katona.

What we have called the decision process — the interaction between different *O* variables — has not been studied by the University of Michigan researchers, at least not in explicit form. Furthermore, only very limited interest has been devoted to the channels (mass media, personal contacts) whereby economic information is disseminated. Generally speaking, however, it seems clear that the majority of variables and results in Katona's investigations can be included relatively easily as elements in the model which we have sketched.

Organization of the Study

The review of the literature will be organized within the framework of the *S-O-R* model. Chapter III contains a review of the different types of *responses* or *reactions* which have been investigated in studies of saving, and, in addition, some of our own views on the extensive and difficult problems of definitions and conceptual distinctions arising on the response side. The account is divided into four sections. First, various possible behavioral measures are compared, including a discussion as to whether the most interesting *R* variables are changes in individual saving behavior from one period of time to another or differences in saving behavior among

[8] See also the discussion in Chapter IV, "A General Comment on the Relationship Between *S* and *O* Variables."

different individuals at a given time. Second, the relationship between different types of consumption and saving behavior is dealt with. Third, studies of the microstructure of the decision process (for example, over time and within the family) are discussed. Fourth, we comment on the special type of reaction which is reflected in the individual's actively seeking to influence the extent of his own or family income as a result of predetermined consumption and saving goals.

Chapter IV presents the stimulus variables used in the study of saving. Studies concerning pure *S-R* relationships are dealt with briefly. Studies more closely related to perceptual and cognitive processes, that is, those aimed at showing how individuals perceive relevant stimuli or deal with the relationships among stimulus and organism variables are examined somewhat more thoroughly. These studies have been grouped into five main sections, dealing with the various types of *S* variables: (1) income and changes in income, wealth and other economic conditions and events related to the individual; (2) sociodemographic variables; (3) general economic conditions and events; (4) channels whereby stimuli of types (1), (2), and (3) reach the individual; and (5) other variables in the individual's environment which may influence *O* and *R*. (Some comments on the development of organism variables are presented also.)

Chapter V contains a more detailed study of the attempts at determining and measuring *O* variables, to be discovered in the literature. The *O* variables which are investigated are primarily *knowledge* of the consequences of saving in general and in various forms, *evaluations* of or *attitudes* toward saving and forms of saving, and certain stated *motives* for different saving actions. So far as possible, we have attempted to fit the studies into the classification of *O* variables presented in the model of the decision process. One section of the chapter, "Perceived Value, Consequences, and Goals of Instalment Purchasing," deals with information about and attitudes toward consumer credits. The final section of Chapter V is devoted to the relationship between personality traits and saving.

In Chapter VI the previous discussion is summarized. Some suggestions are also given concerning directions for future research.

A general comment should be made on the literature discussion following. Our main interest has been to search for the parts of the individual saving process and to discern the dimensions along which situations, individuals, and behavior have been described, and to determine which relationships between the dimensions have been the subject of study. This review was designed to help us in our choice of problems and methodology in future empirical studies. It is hoped that the review may also be of value to others who are interested in problems concerning the saving process. The possibility of generalizing from the actual results to be found

in the studies under review must, however, necessarily be limited in both time and space (apart from the uncertainty which may prevail over the conclusions of any particular study). It is, therefore, probably wise to regard the results of saving studies in the United States, for example, as possible sources of hypotheses concerning *S-O-R* relationships, or parts of such relationships, which may be tested in other countries, rather than as generally established facts. In view of this, the presentation of actual results has been given a relatively subordinate role in this study.

III. RESPONSE VARIABLES (*R* VARIABLES)

Saving as the Result of Behavior

Definitions of Saving

Saving is generally measured by a comparison between the wealth of the individual or of the household at two different times, or alternatively by that portion of income during a given time period which has not been used for specific purposes (Morgan [175]). Thus in most instances one observes only the *results* of the decisions and actions which constitute saving. In this section we shall point out some of the problems which arise when measuring saving in this way. Few attempts have been made at a detailed study of the *decisions* and the *actions* which precede and result in saving (defined in the usual way by means of accounting techniques). Some studies of this type are, however, dealt with later in this chapter.

It is obvious that what will be regarded as saving will be to a considerable degree dependent on the length of the time period chosen to study the result of saving and consumption acts. The most common procedure appears to be measuring the extent of saving during one calendar year, that is, investigating differences in net wealth at the beginning of the year and at its end, or assessing the amount of yearly income which has not been spent for consumption. The length of the period appears in general to be determined by the theoretical aims of a given study or for practical reasons rather than by considerations of the "natural" period for the individual, whether this period is defined as the individual's "planning period" or as the period between two income payments. The individual's planning period is dealt with in greater detail later in this chapter.

J. B. Lansing has pointed out [146] that what is classified as saving must always depend on the purpose of the inquiry. He illustrated with the aims of three different investigations, each of which led to different optimal definitions of saving. We do not intend to give a detailed account in this study of different forms of saving. The main forms, regardless of the way in which the concept is defined, are placement in financial assets (bank and other financial institution accounts, private loans, stocks, shares,

and bonds), in insurance, and in investment in real production capital (assets invested in a farm or in one's own company). Owning real estate (for example, one's own home or summer cottage) is also generally regarded as saving (see, however, Lansing [146]). Sten Thore presents [268] a careful discussion of practical problems in connection with the formulation of rules for the classification of saving and consumption.

Consumer durables usually present a considerable problem in this connection. Most theoretical definitions of saving attempt to split the purchase of a durable consumer good between one portion involving consumption (wearing out) during the year and another portion which may be regarded as investment (saving). The estimation of wearing out and of depreciation of durable goods during a given time period is in practice, however, an exceedingly difficult problem in the face of which most researchers have capitulated, "solving" the problem by regarding investment of income in durable goods as consumption (for example, Irwin Friend and Vito Natrella [75], Lansing [146], and Thore [268]). Others including Katona ([122], p. 24) and F. T. Juster [107] have, however, provided powerful arguments for the inclusion of purchases of consumer durables in the definition of saving, pointing out that consumer capital is productive capital. Morgan in an empirical study [177], also has called such purchases saving. A fairly common solution is to define the purchase of durable goods as a separate item in the household budget, to be regarded as neither saving nor consumption. (See, for example, the Swedish saving studies [279, 280, 281].)

Various reasons can be presented in support of the last mentioned practice and of the idea that the economic transactions of the individual or household should not only practically but also theoretically be divided into more categories than the rough division into saving and consumption provides. Proposals to this effect have been made by K.-O. Faxén [60], and Bent Hansen [92], for example. Some of the arguments for the division of saving into several categories are based on the idea that only those transactions which can be shown empirically to be substitutes for each other should be included in the same category.

Other researchers base their arguments for a possible division of saving into different categories on studies of individual subjective classifications of forms of saving. Morgan maintained [177], for example:

> Ideally, saving as optimally defined, should be perceived and defined similarly by distinguishable groups of spending units, if not by all spending units. Or, at least, people must make decisions about components which make up what we call saving, or make decisions with an eye to what effect they have on saving. If households only made decisions about specific commitments, some of which affected saving one way, and some another, with no regard to their overall effect on saving, then we should examine these decisions and not saving. Much further

research needs to be done in this area. Do consumers really have any concept of saving? Do they pay any attention to changes in their overall net worth? (pp. 90–91)

A. M. Okun also appears to take the view [212] that individual subjective distinctions should determine what is and what is not to be regarded as saving. On the other hand, Okun also requires that an objectively established substitutability among forms of saving must exist before they can be placed in the same category. It appears obvious that the subjective and objective classification criteria do not always agree. Studies by Katona and Mueller [129] and Katona [122] — see also Otto Blume [20] — have shown that many types of "saving" are not regarded as saving by the respondents, at least not spontaneously. Life insurance, repayment of mortgage and other debts, and payment of pension charges, for example, are infrequently regarded as saving. Nor are the purchase or ownership of consumer durables regarded as saving by these respondents.

German studies have occasionally divided saving into *Ansparen* and *Absparen.* By *Ansparen* is meant the increase of assets; by *Absparen,* the reduction of different kinds of debts. If separate saving ratios (saving as a percentage of income) are computed for *Ansparen* and *Absparen* respectively, it can be shown that these ratios are related in completely different ways to the level of income (the ratio for *Ansparen* increases with income, the ratio for *Absparen* decreases) which, according to Gerhard Scherhorn and Dieter Fricke [239], suggests that two entirely different phenomena are involved. Another division sometimes used in German studies is that of saving for the purpose of consumption (*konsumbezogenes Sparen*) and saving for the purpose of accumulation (*akkumulationsbezogenes Sparen*) (see Heiner Boehme [21] and Scherhorn [238]). The assigned motives of the individual are thus used as a basis for the classification of saving into two different categories.

From many points of view, particularly bearing in mind the many different personal definitions of saving, it is probably reasonable to distinguish among different forms of "saving transactions" when studying the individual and psychological factors behind the transactions. We are, however, doubtful as to whether it is feasible to allow the subjective grouping of courses of action given by the individuals studied to determine entirely the number and nature of the categories of "saving behavior" and "consumer behavior." In the final instance, the theoretical or applied aim of the research in question should determine which transactions should be placed in which categories. According to this point of view, individual subjective definitions of saving are rather to be used as an explanatory *O* variable when studying actual behavior. As Morgan has pointed out [176], the situation may thereby naturally arise in which the actions, which ac-

cording to the individual's definition may be grouped in the same class of behavior, may be assigned by the researcher to different classes if, for instance, the actions lead to completely different macroeconomic consequences.

Various Measures of the Extent of Saving[9]

The question of the degree to which the individual makes decisions concerning the amount of his total saving may be regarded as a key issue in research using an individual and psychological approach, and the answer to this question is by no means given. *Total saving* is, however, in any event a very common measure of saving. Studies of the relationship between saving and *income* are not infrequently carried out by computing the regression of saving, measured in absolute terms, on income.

The ratio between saving and income has often been used as the dependent variable, especially in studies where the influence on the extent of saving of certain explanatory variables besides income has been studied. The saving ratio is naturally often a meaningful and interesting measure of the extent of saving during a given period. Figures based on the ratio between saving and income present certain problems, however. It is, for example, possible in some cases that the individual has no income at all but finances his consumption by reducing his wealth or obtaining loans, that is, by negative saving. If the individual has a very low income, and his consumption is thus many times greater than income, the saving ratio which may then be minus several hundred percent will no doubt be a questionable measure. One method of avoiding this problem is to use relatively broad classes based on the saving ratio, as has been done, for example, by Katona [123] who grouped individuals according to the following system: "saving greater than 10 percent of income," "saving between 5 and 9 percent," "saving between 2 and 4 percent," "between 1 percent saving and 4 percent negative saving," "negative saving of 5 percent or more."

It is surprising that the literature does not contain a more detailed discussion of the construction of the dependent variable(s) in studies of the extent of total saving or some particular form of saving. Taking into account the importance of wealth as a supplier of resources, one might, for example, as an alternative measure consider the relationship between wealth increases during the period (that is, saving) and wealth at the

[9] The majority of the measures of saving and consumption which have been proposed have been intended for studies of average or cumulative responses of aggregates of persons. Also in studies of individual behavior it is frequently desirable, however, to describe the extent of saving and consumption in some way (in addition to observations of the details of saving processes). It is likely that the same measures of the extent of saving must be applied as when studying aggregates.

beginning of the period.[10] Comparing the values of this measure for different income classes would appear to give interesting information concerning the relationships between resources and saving. Another possible measure is the ratio between saving during the period and wealth at the beginning of the period plus income during the period. We have not, however, found in the literature any systematic discussion of different possible measures or indexes of the extent of saving.

The measures mentioned so far are applicable in cross-sectional studies, those where the aim is to find interindividual differences in saving and to account for these differences by means of explanatory variables. If attempts are made to study variations in saving propensity over time, a number of other procedures are also possible. The most common procedure is to study the correlation between *saving in absolute terms* and the explanatory variable(s), where each pair of observations refers to a given period of time (see, for example, Ferber [62]), or to study the correlation between *saving ratio* and explanatory variables in a corresponding way (see, for example, James S. Duesenberry [58]). This methodology reveals primarily long-term relationships and trends in the data. If one wishes, however, to study short-run changes — from one period to the next — other techniques must be used which focus upon these changes and ignore those of a long-term nature.

The most common technique for studying short-run changes appears to be to compare the changes in the observed values between period 1 and period 2, between period 2 and period 3, and so on, for the dependent and independent variables.[11] Various measures of saving (the dependent variable) and various independent variables can, of course, be subjected to this treatment. For excellent discussions concerning problems in connection with the study of long-run and short-run changes, see Ackley ([1], Ch. 9) and Suits ([266], pp. 34-39).

Changes Over Time or Differences Among Individuals

Katona has in many contexts (see, for example, [121]) strongly maintained that in studies of economic behavior it is the changes in behavior over time which are of primary interest. Studies focusing on changes over time are the most important with respect to prediction as well as to policy-making. Differences in saving propensity among different individuals at a given time are said to be of minor interest. Suits shares the same opinion [266], as does L. R. Klein [134]. Both Morgan [178] and Mueller

[10] We disregard some definitions which hold that not all increases in wealth can be regarded as saving.

[11] See also Okun ([211], p. 414) for some objections to this method. There are also other possibilities as can be seen from Suits [266].

[202] plead in the same spirit that a useful methodological orientation, which other behavioral scientists ought to borrow, is the emphasis economists place upon explaining changes and reactions to changes. According to this argument, the use of, for example, personality traits to explain saving behavior would be of little interest, since these traits cannot be expected to change particularly quickly over time.[12]

This argument is advanced even if cross-sectional analysis shows clear correlations between, for example, type of personality and tendency to save. It is instead those subjective variables which can change quickly, such as attitudes and expectations, which, according to Katona and Mueller, can be expected to be of some value in explaining the most interesting aspect of consumer behavior — changes from period to period. The relationship between changes in consumer and saving behavior over time and the corresponding changes in expectations and attitudes have assumed central importance in the studies of the University of Michigan group, both in the form of normal time-series analyses and in the form of studies of short-run changes (such as first differences). See, for example, Mueller [199, 200].

It has, however, been pointed out by James Tobin and F. T. Dolbear, Jr. [271] that it is also necessary to make a more detailed study of the correlation between more fundamental and *permanent* individual traits, on the one hand, and saving and consumption propensities on the other, in order to understand individual behavior and in order to predict long-run changes. They provide an example in support of their view. If individuals with considerable wealth save a larger share of their income than those with little wealth, this can either be because wealth determines the extent of saving (the greater the wealth, the higher the propensity to save) or simply because individuals with thrifty dispositions previously have saved more than others and continue to do so. It is important to know which of these two explanations is correct. If the latter explanation is correct, it may be the case — in spite of the observed correlation between wealth and saving ratio — that the greater wealth one has, the less will be the propensity to save, even within the group with thrifty dispositions. But, according to Tobin and Dolbear, it is impossible to draw any conclusions without some form of personality measurement, and thus, in the words of these authors, "the relationship of economic behavior to personality attributes is not only a subject of interest in itself; it is also essential for correct interpretation of observed relations among economic magnitudes" ([271], p. 682).

[12] It may be pointed out that this viewpoint also leads to the questioning of the application of sociodemographic data in the study of saving. These, too, change slowly over time, especially at the aggregate level.

In our opinion, there is much to recommend an emphasis on assessing behavioral changes over time in the study of saving and consumption, for the reasons presented by Katona and Mueller among others. Data presented by Suits also indicate [266] that short-run changes in consumer behavior often cannot be predicted at all using variables usually considered important, such as income changes. This lends further support to the hypothesis that intraindividual *changes* in behavior over time must often be thought of as being mediated by factors other than those which lie behind interindividual behavioral *differences.*

However, cross-sectional studies often appear to be of interest as well. In such studies, information can be obtained both concerning the propensity to consume and to save in different demographically or psychologically delineated population groups, and concerning the existing knowledge and evaluations of different possible courses of action. If it is assumed that the propensity to consume or save can be influenced by external stimulation, for example, by propaganda or fiscal measures, it appears possible that cross-sectional data might guide both the *direction* of such measures toward certain target groups and the *kind* and *content* of measures chosen. Furthermore, from the more theoretical point of view it also appears important to study interindividual differences even in psychological variables which cannot be expected to change quickly over time. It appears not at all improbable that external events (changes in the business cycle, private economic events, propaganda, wage changes, and so forth) influence different individuals in very different ways, depending on previous information and evaluations, and perhaps also on personality, for example, a disposition toward optimism or pessimism. This *interaction* between stimulus variables and organism variables (in our terminology) might often turn out to be an extremely important object of study when attempting to understand the processes of consumption and saving.

Our opinion is, therefore, that placing an emphasis on *behavioral changes* as a study object by no means excludes the application of more fundamental and permanent psychological variables in the model to be used for explaining saving and consumption. As Suits has maintained [266], it will in all probability prove to be essential for the understanding of individual or aggregate behavioral changes over time to make use of panel studies, that is, cross-sectional studies in which the same individuals are reinvestigated a number of times. Behavioral changes can then be related to occurrences during the period or previous periods, such as impinging stimuli and changes in various psychological variables, as well as to more permanent personality traits.

R. F. Kosobud and Morgan have produced such a study [143], al-

though the results they have presented appear to comprise only a very limited selection from the many analyses possible of the data collected. Further treatments of the data are in progress, however, and have been partially reported (Crockett and Friend [48]; M. R. Snowbarger and Suits [258]). Mueller [199] and Katona et al. [131] have analyzed data from other panel studies conducted by the Survey Research Center. Katona and Mueller have recently reported a panel study [130] involving four waves of interviews relating to the United States tax cut of 1964.

Katona has maintained in a number of contexts (for example, [119], pp. 80 and 254) that panel studies are not a particularly suitable instrument for studies of the predictive value of psychological variables. According to his reasoning, the random fluctuations in individual economic behavior from period to period are so great that the predictive value of changes in attitudes and expectations will be apparent only if the prediction is based on aggregate data. Other researchers, for example, Okun ([211], pp. 421-23), have raised considerable objections to this argument. For our part, we consider it obvious that a deeper understanding of the influence of individual factors on consumer and saving behavior can only be obtained by means of studies at the individual level.

This is not to deny, of course, that panel studies present special problems. The dropout in the panel often tends to be large and unevenly distributed. The primary risk is the inability to reinterview more mobile sections of the original panel. The results may also be biased for other reasons. Behavior after an interview may be influenced by the fact that an interview has already taken place with the possibility that the respondents no longer are typical of the population which they originally represented. Even when *behavior* is not influenced by participation in the panel, the *answers* given in the first interview may affect in an undesirable manner the answers given on subsequent occasions. Learning and motivational factors may be responsible for these biases. If an effort is made, some of these disadvantages can, however, be avoided or at least reduced. Also, the magnitude of certain errors can be estimated (Ferber [65]). Furthermore, participation in a panel leads to the respondents' providing more valid reports with reference to financial circumstances (Ferber [65]).

Measurement Error

The measurement of consumption and saving by means of surveys is always subject to considerable error, regardless of the measures used. The measurement errors in the R variables are perhaps often as large as in psychological O variables. Comparisons with data collected in other ways show considerable differences, and some information can be rejected at first glance as improbable. It appears that interviewees often give estimates

of income, consumption, and saving which are *all* too low. Ferber [63] has taken the stand that it is in the improvement of techniques for the measurement of household behavior that the greatest strides in saving and consumption research could, and should, be taken.

We can only point out the considerable difficulties to which every empirical study of the extent of saving is subject, and refer to a number of recent American studies in which measurement problems and measurement error have been the subject of detailed examination. Such studies have been carried out by Ferber [64, 65, 66], Rikuma Ito [104], Ingrid C. Kildegaard [132], Lansing, G. P. Ginsburg, and Kaisa Braaten [147], E. S. Maynes [165, 166], and John Neter and Joseph Waksberg [209]. Errors in reporting income have been dealt with by M. E. Borus [22], P. W. Haberman and Jack Elinson [89], and Einar Hardin and G. L. Hershey have studied and reported upon [93] the accuracy of employee reports on changes in pay. Ferber reviewed [65] most of the problems connected with measurement errors in surveys.

Studies of Relationships Among *R* Variables

This section will deal briefly with a number of studies on the relationships among different forms of saving and consumption. These investigations may be characterized as studies of *R*-*R* relationships, since the studies attempt to investigate whether the choice of certain courses of action (responses) in a given situation (that is, with *S* and *O* variables constant) is positively or negatively correlated with the choice of certain other courses of action.[13] In economics literature this correlation is often referred to as the degree of substitutability between courses of action; the more negative the correlation, the higher the degree of substitutability.

Friend and R. C. Jones found [73], for example, that for the majority of saving components — cash, securities, home, payment of mortgage debt, and probably insurance — there was on the average a greater substitutability among the individual components and other saving than among the components and total consumption. H. J. Claycamp found [41], however — as had H. W. Guthrie [86] previously — a noticeable lack of substitutability among different forms of assets. Robin Barlow, H. E. Brazer, and Morgan found ([8], pp. 61-65 and 117-21) a clear lack of flexibility among different assets in many high-income families. Friend and I. B. Kravis found [74] that insurance saving appears to compete with other

[13] Other types of studies, which may be said to constitute investigations of *R*-*R* relationships, are those of the microstructure of consumption and saving processes (search processes, the pattern of consumption and saving within a period of time, and so on). These studies are dealt with in Chapter III, "Studies of the Microstructure of *R* Variables," of this report.

forms of saving rather than acting as a complement to them. The relationship between participation in pension plans and other saving has been studied by both Phillip D. Cagan [36] and Katona [123]. Cagan found that participation in pension plans increases total personal saving by at least as much as the charges paid by employers and employees. Similarly, Katona concluded [123] that participation in pension plans stimulates saving. Jacob Cohen and Morgan have investigated [44] whether the use of credits in connection with consumption (instalment purchasing) results in less or perhaps greater saving in the form of accumulation of liquid assets. They found, however, that respondents who preferred instalment purchasing were approximately as successful in saving in the form of liquid assets as were those who preferred to pay in cash.

The substitutability between different forms of saving and the purchase of consumer durables has been studied by a number of researchers. According to Ferber who refers [63], inter alia, to Maynes [164] and to Friend and Jones [73], data now exist which without doubt suggest that the purchase of capital goods to a considerable extent substitutes for (and, therefore, competes against) saving. For this reason, Friend and Jones assert that the purchase of capital goods should be regarded as saving when income disposal is divided into only the two main categories. M.-A. Tremblay, Gérald Fortin, and Marc Laplante [273] found that 26 percent of their sample families reported they were currently abstaining from consumption in order to save. By far the most frequently mentioned items abstained from were travel and clothing.

Wallberg presented ([279], pp. 137-41) an account of attempts by means of interviews to estimate the substitutability between participation in so-called premium saving[14] and other forms of saving in Sweden in 1955-56. It is extremely difficult to use the interview for such purposes, as Wallberg pointed out, but the responses showed that an overwhelming majority thought they would have saved the money in some other form if the system of premium saving had not existed.

The foregoing is a limited selection of the studies which we regard as belonging to the category of "studies of *R-R* relationships." As observed by Crockett and Friend ([48], pp. 23 and 32-33) in their discussion of some of the research in the area, the problems are complex and the results partly contradictory. The techniques which have been used to obtain measures of the substitutability among different forms of saving (or among saving and certain forms of consumption) have varied considerably and it is not possible to go into a detailed examination and comparison of the methods

[14] Premium saving was an incentive scheme for personal saving, sponsored by the government. If a person kept a maximum sum of 1,000 Swedish crowns in a special savings account for at least two years, he received a premium from the state equal to an increase in the normal interest rate of 4 percent to 5 percent.

applied. It may, however, be noted in passing that factor analysis, a very common technique for the study of *R-R* relationships in psychology, has been applied in at least two studies of these relationships among different courses of action (in this case, different consumption expenditures) — those of R. D. Millican [170, 171].

Studies of the Microstructure of *R* Variables

This section provides an account of a number of studies concerning the length of the period for which individuals or households plan when they save, and reviews some studies of budgeting habits. The section also contains a discussion of how prominent a role saving plays in household decision-making and deals briefly with the distribution of economic decision-making within the family.

Planning Horizon

Theoretical treatises on saving have frequently discussed whether the *planning horizon* of the individual covers his whole life span or longer (see Boehme [21]).[15] The time perspective is, however, different in more empirically oriented literature, apart from studies inspired by Milton Friedman [71].[16] Kosobud and Lansing thus consider on the basis of a panel study [142] that the aggregation of a dependent variable such as saving over a period as long as two or three years is not very meaningful. They believe that the dynamics of consumer saving can be studied more profitably if the period of time is limited to one year or less.[17] They also stated, however, that "further research is called for which attempts to find out what time span appears to be in the consumer's mind when he undertakes saving transactions" (p. 98).

Crockett and Friend commented [48] that

> The length of the time span [most relevant to the consumption decisions and asset goals of the household] will vary among households and may depend on the specific decision to be made. The span which is most relevant to the average American family for most decisions is an open question. In the present state of

[15] It should perhaps be mentioned in connection with the question of whether the period of planning extends to the total life span that Morgan et al. have shown [188] that many Americans approach retirement with very vague impressions of the income which they will receive, or what income they will require, and at what age they will stop working.

[16] For another exception, see Cagan [35].

[17] Katona ([118] and [119], p. 106) has suggested that studies of sequences of saving and negative saving over a number of years may also be interesting. Data referred to by Katona suggested that the most common pattern for the majority of American families has been one year of negative saving enclosed by a number of years of saving. See, however, the findings by Katona and Mueller ([130], pp. 96-100), which imply that there exists a substantial number of families who are high (or low) savers over prolonged periods of time.

our knowledge, it may be no longer than a single year or as long as the entire working life of the head of the household. (p. 16)

No one appears to have advanced beyond comments of this type. Klaus Schreiber has expressed a number of thoughts concerning planning [243], among other things pointing out that periods of planning for different forms of consumption and saving probably often vary in length and overlap, but he has not attempted to confirm this assumption empirically. Thore has advanced similar ideas [269].

Suits appears to believe it very difficult to determine the shortest period which can be meaningfully studied [266], even if one refrains from attempting to use the concept of a "natural" planning period (based on individual habits, expectancies, and planning horizons) and aims solely at finding a time unit which gives stable relationships among saving/consumption and other variables. Suits considers it obvious that one day, or one week, are not particularly interesting periods, since variations in behavior from one such period to another probably depend mainly on random fluctuations around a mean which is determined by long-run forces, but it is, according to Suits, by no means clear what is in fact meant by "the minimum meaningful period."

Budgeting Habits

Attempts to study the budgeting habits of individuals or households do not appear to be of any great assistance in determining the length of the planning period. Katona, for example, stated ([119], p. 241) that only a minority of American households operate in terms of a budget specified in detail.[18] Morgan has commented [180] that the scattered evidence which exists indicates that less specific planning is performed than most models of consumer behavior would lead us to believe. Reuben Hill made it clear [98] that we need a multidimensional concept of planning when studying the management of family resources. Planning is further discussed in Chapter V of this study, "Personality Traits and Saving."

How Salient Is Saving in Household Decision-Making?

This question is always of interest in studies of saving, regardless of the determination of period length. Should we regard saving, as did Keynes, as a *residual* — the portion of income left over during a period of time

[18] Moreover, Mueller has advanced the hypothesis [202] that individuals who use formal budgets do so because of a lack of self-control. She refers to a pilot study which showed that, given the same level of income, individuals with budgets saved less than did individuals without budgets. This should be compared, however, with the results obtained by Morgan et al. [188], showing positive correlations between the feeling of being able to plan on the one hand and actual saving on the other. See Chapter V, "Personality Traits and Saving."

after consumption needs have been satisfied — or should it, or part of it be regarded as the result of acts equally as deliberate as purchasing?

Katona maintained at an early stage in his research that it is consumption and not saving which primarily occupies people's attention: ". . . it is much more usual for people to meet their expenses first and to save what is left than to consider saving as the first charge on their income" ([114], p. 99). The general validity of this statement can be questioned, at least in view of the fact that the portion of disposable income made up of contractual saving has become large and appears to be increasing continually (P. L. Cheng [39]; M. E. Kreinin [145]; and Helen Manning Hunter [160]).[19] H. W. Arndt and J. R. Wilson have presented [4] a balanced discussion of the extent to which some forms of saving can be expected to be given priority over certain forms of consumption, and they have shown some of the macroeconomic consequences of the fact that in all probability not all saving can be regarded as residual.

Later, Katona seems to have adopted a somewhat different view, in which saving is regarded as a more active process (see [119], pp. 101-2, and, in particular, [130], Chs. 6 and 10), although he insists that it is not by means of saving that the consumer exerts his influence on the nation's economy ([119], p. 112). Mueller and Harlow Osborne found in a recent study [204] that 28 percent of those interviewed who saved in banks could be classified as *systematic* savers. According to Mueller and Jane A. Lean [203], 27 percent of savers could be designated as systematic. Katona and Mueller reported [130] that 15 percent of the respondents (families) reported a fixed saving program. Other data in the Katona and Mueller study seem to indicate that additions to liquid reserves cannot be exclusively designated as residual saving (that is, saving due to lags in adjustment of expenditures to income), but must be regarded, not infrequently, as purposeful accumulations of funds. In a study mentioned by Ulrich Weiss [284], 40 percent of New Yorkers who had a savings account were said to have a systematic plan for saving. Both general reasoning and empirical findings thus appear to suggest that saving should to some extent be regarded as the result of conscious choices of courses of action involving saving. The choices can be made during the period in question or, when it comes to contractual saving, during some earlier period.

The conclusion should not be drawn, however, that the individual, in his choice between consumption and saving, is behaving according to a

[19] It might perhaps be argued that Katona's statement is still valid, since a large portion of contractual saving is a consequence of different forms of consumption. The fact remains, however, that instalments on debts (amortizations, instalment purchasing, and so on) constitute saving according to most definitions, as do more active forms of contractual saving such as life insurance and payroll saving.

"funnel" or "tree" model. The funnel model means that the consumer at the beginning of a given period makes a choice concerning the distribution of available resources — first, between consumption and saving, and thereafter, within each of these sectors, among different groups of products and forms of saving, respectively. Further divisions are then made within product groups and forms of saving. Models of this type have been proposed more or less explicitly by G. P. E. Clarkson [40], Okun [212], Nicosia [210], R. H. Strotz [263], and B. M. S. van Praag ([276], Ch. 6), among others. Although models of this type may be useful as taxonomic instruments in the classification of courses of action, we feel it is important to point out that, so far as we know, no empirical research exists which supports (or, for that matter, invalidates) the hypothesis that the consumer in fact behaves according to a funnel model.

Bearing in mind the limited rationality of individuals, a rigid funnel model appears to be somewhat unrealistic. What could be conceived of as a more realistic model may be the direct opposite of the funnel model. It could be assumed that the individual begins by distributing his resources not between total consumption and total saving but between different *specific* purchasing and saving activities in turn, according to the degree of importance of these activities. The distribution continues successively to less and less essential courses of action until the individual finally reaches the level at which his resources have been completely utilized. This simple model can be extended by assuming that the individual's choice among specific courses of action is also affected to a certain extent by a feeling of what would be an optimal total distribution between consumption and saving. Furthermore, the time dimension can be introduced into the model by assuming that the degree of importance to the individual of different courses of action is continually varying as a result of long-term maturation processes or because stimuli (such as advertising and personal influence) temporarily make certain consequences or goals more salient or more highly valued. (See Chapter IV, "Other Background Variables.") The situation may also arise, of course, in which the individual is not free to act in accordance with his current appraisal of the various courses of action because of more or less binding decisions and commitments made in previous periods.

In what appears to be a new way of studying the saving process, a way which seems congenial with attempts to outline more realistic models of the microstructure of saving and consumption, Mueller and Osborne reported [204] the pattern of deposits and withdrawals in bank saving. One result of this study showed that for most accounts deposits quickly follow withdrawals, often bringing the accounts to larger sums than before the withdrawal. This study was continued a year later in the form of new

interviews with the same respondents (Mueller and Lean [203]). Mueller and Lean's analysis showed that savings account owners often use their savings accounts as a source for financing large expenditures.

> For many families drawing on the savings account is a major alternative to the use of instalment credit, although resort to a combination of both sources of funds is not infrequent. Families which are willing to make withdrawals from their savings accounts are for the most part those which are in a strong financial position and have savings habits and motivations which have enabled them in the past to build up their savings balances. These families treat their savings account as a revolving fund out of which major consumption outlays can be financed. They intend to replace withdrawals promptly out of current income. The new survey data show that as a rule these "good intentions" are indeed carried out. (p. 375)

The analysis also shows that most interviewees did not predict on the occasion of the interview that they would use savings to buy such goods as consumer durables. The finding can be interpreted to mean that most people regard withdrawals from bank accounts as completely temporary occurrences, and that they regard this function of saving, to assist in the financing of large expenditures, as secondary in relation to more long-term saving goals concerning security. Savings were used for major consumption outlays by 24 percent of the account owners and by 40 percent of the people who had made withdrawals during the year. Space does not permit an account of all of the results from the detailed analysis, but there is good reason to assume that this type of study, that is, a painstaking analysis of what gives rise to actions of direct or indirect importance for the extent of saving, will become more common in the future.

In the United States a pilot study was carried out by the Inter-University Committee for Research on Consumer Behavior [103] with the aim of investigating the extent to which individuals are capable of *predicting* whether they will save during a given year. Although the report stressed that the data concern expectations of saving rather than plans to save, it suggests an interesting method for studying the details of the saving process. A number of individuals were questioned in May and June of 1959 as to whether the income of the savings unit during the current year was expected to exceed, equal, or fall below expenditure, and as to the size the difference between income and expenditure might reach. The actual outcome was then studied in January and February of 1960. Three out of four predictions were correct. Of those interviewed, 75 percent expected that their income would be greater than their expenditure, and 80 percent of these respondents were correct in their anticipations. No fewer than 36 percent of the families were able to make a very exact prediction of the extent of their saving. More families overestimated their future saving than underestimated it. The report also presents an account of data concerning

planned and actual utilization of savings. In this connection attention should be drawn to the finding by Katona ([119], p. 101) that, when asked whether they expect to save any money during the next year, many more Americans said that they definitely would save than actually did so (in contrast to the buying of durable goods, where the proportion of actual purchases exceeds the proportion of expected purchases). A large panel study, which is being conducted in the United States at present by the Bureau of the Census in collaboration with the National Bureau of Economic Research, will provide more extensive information about the ability of consumers to predict and to report future changes in family assets, future changes in income, and so on.

The total decision process must also be presumed to contain an *information search process.* The search can have as its purpose the gathering of information both about available courses of action and about the consequences of the actions. We have been unable to find studies of the extent to which the individual *actively* seeks information and personal contacts of importance to saving decisions. One exception is the study by Barlow et al. [8] concerning people with high incomes. The part of that study which dealt with sources of information is briefly described in Chapter IV, "Channels for the Diffusion of Knowledge and Influence."

The Decision Unit: Household or Individual

For obvious reasons we wish to deal primarily with the economic behavior of the individual rather than of the household or the family, since the psychological factors and dispositions, which may be expected to influence the behavior we are interested in, must necessarily refer to the individual. But individuals live together in families and households which to a considerable extent *jointly* consume and save the income of the individual members of the household. From the economic viewpoint, this justifies the study of total household income, saving, and consumption, and use of the household as the unit of study. A more adequate model from the psychological point of view could be constructed by making a separate study of each member of the household and then attempting to study the influence which other members exert upon the individual's attitudes toward saving and consumption and upon his actual decisions. This approach appears to be attainable in studies of attitudes and cognitions about saving (for example, information about forms of saving and evaluation of different consequences of saving). Considerable problems arise, however, if one wishes to relate these variables to actual saving behavior, since the economic decisions of the household are often made collectively. The actual execution of certain behavioral acts, such as making a particular purchase, entering upon an instalment purchase contract, or actually withdrawing money from

the bank account, can, of course, often be attributed to one particular member of the household. It is probably correct to say that the meaningfulness of using such acts as dependent variables in the study of saving has not yet been explored (see Chapter VI, "Trends and Lacunae in Current Research"). Another difficulty is that the opportunities for reliable measurement of actual cash flows within the family, which determine the actual disposable income and wealth of each member of the family at any given moment, will often be extremely limited.

No major investigation attempting to study the economic behavior of each family member and the motives for this behavior has been reported in the literature. Some data concerning how decisions on saving are made within the family and the way in which economic responsibility is distributed have been provided, however, by some of the articles in N. N. Foote [69], and by Morgan [185], Günter Schmölders [241], Harry Sharp and Paul Mott [245], and Elizabeth H. Wolgast [289].[20]

This is, in fact, probably one of the most formidable problems in connection with the study of individual factors which influence saving. To what extent can it be assumed that the individual whose cognitions and motives are being studied is also the person who can be said to "carry out" the behavior to be predicted and explained? This question can be asked, for example, with reference to the majority of studies at the Survey Research Center in Michigan as well as to, for example, the Swedish saving studies. And if studies are made of the cognitions and motives of each adult member of the family, is it possible to construct from these data some collective psychological structure which can be used to predict household saving behavior?[21]

An interesting research project would be to attempt by means of interviews to illuminate the roles played by the different members of the family during different *phases* of the decision process connected with some major financial transaction. Which roles are played by the members of the family in the establishment of potential courses of action, in the assessment of the consequences of the courses of action, in the information search in connection with these phases, in the actual arrival at a decision, and in the transformation of the decision into action? (See the model proposed by L. J. Jaffe and Henry Senft [105].) How detailed and reliable a body of infor-

[20] Barlow et al. presented [8] data concerning the extent to which those with high incomes delegated their decisions about how to invest to *outsiders*. Only 10 percent delegated any part of the decision. Similar observations have been reported by Katona and Lansing [127].

[21] Both Wolgast and Morgan have found that the wife appears to be a better forecaster of the future economic actions of the household than is the husband, either because she is more aware of how priorities are set in the family economy or because she has more power. The studies were, however, on a small scale.

mation about these group decision processes may be obtained by means of interviews after the event is, however, an open question.

Earning of Income as an *R* Variable

Most accounts of individual saving and consumption as a decision process regard income as an exogenous restriction. Income (and wealth) provide, according to this viewpoint, the boundaries within which the individual can make his decisions regarding consumption and saving. However, the inquiry into the factors that determine behavior and motives for individual consumers has sometimes raised the question of which factors determine individual and family income. We shall, therefore, devote this section to a discussion of the relationships which responses in the form of active selection of income level might have to other components of the *S-O-R* model.

The primary question is to what extent it is profitable to use individual evaluations and decisions in explanations of the magnitude of individual income. Morgan maintained [182], for example, that ". . . the whole concept . . . of income as a simple exogenous variable in the household sector begins to seem invalid" (p. 37). Similar ideas have been presented by Morgan et al. [188] and Suits [266]. Suits, for example, acknowledges that it is natural in the case of poor countries or countries with unemployment and depression to regard income as a behavioral restriction, but argues that in other cases this view should not be adopted unquestioningly. Many individuals and families can in times of affluence and low unemployment supply varying amounts of their labor and, therefore, determine to some extent their own income levels. According to this argument, the behavior of the individual or family involves a choice both of a certain volume of consumption and saving and of a certain level of income. A high volume of consumption or saving may *result in,* rather than be caused by, a greater total income.

According to these researchers, several lines of reasoning justify a more detailed examination of the extent to which the individual and the family control their income by personal actions, perhaps in the form of conscious decisions. It is held that already the amount of extra work and overtime performed shows that opportunities for choice occur and that certain individuals choose to increase their income. An illustration is Morgan's observation [186] that in the US such factors as extra jobs and overtime account for far more of the interpersonal differences in hours worked by family heads than does illness or unemployment. Ruth P. Mack argued [158] that the productivity and large working efforts of the population of the United States during recent centuries depend to a large extent on the need for consumption, the "thing-mindedness," which has arisen for

various reasons. She is thus of the opinion that, on historical grounds, it can be maintained that the consumer's aspirations guide his working efforts and income. Sebastian de Grazia has put forward similar views in a discussion of the American's distribution of his time between work and leisure [53]. Suits also suggested [266] that if, in fact, the association between consumption and income is an empirical relationship between two aspects of a single behavioral pattern, this may seriously affect the current models for the calculation of the effects of various economic and political measures. This is further justification for the more detailed examination of income as a *dependent* variable in household behavior.

Measures which to a varying degree are available to the individual or household, and which can be characterized as income-regulating measures, include alternatives such as overtime, moonlighting, the wife's taking employment, change of employment, and increased work performance (if this increases income). To these measures could, of course, be added decisions having a long-run effect on the size of income such as the raising of educational, vocational, or professional level by means of further study, industrial retraining, and change of place of residence (and, perhaps, measures influencing the *children's* future income, by financing their education, and so on). Our discussion will, however, deal only with the first-mentioned category of measures.

Few extensive studies exist of the processes at the individual level which, apart from institutional and social factors of various kinds, control the individual's or the family's choice of income level in the sense just defined.[22] A number of specific topics within the problem area have, however, been the subject of more intensive research, some of which we now report.

For what purposes do individuals use additional income obtained by means of different types of extra work or other deliberate income regulations — consumption of necessities, durable goods, luxuries, saving to own a home, or saving to provide security? A number of pertinent observations have been reported.

In interviews with English workers (who often have the opportunity, and are often expected, to earn large amounts of overtime wages), Ferdynand Zweig found [290] that those who attempt to get as much overtime as possible often need the money for necessary expenses (large families) or

[22] The extent to which wages and wage systems contribute to job satisfaction and productivity has been the subject of a large number of studies in the industrial psychology literature — for a review, see R. K. Opsahl and M. D. Dunnette [217]. This literature has, however, to a noticeably limited extent, dealt with the influence of the wage level on the amount of work expressed in working hours. The question in which we are primarily interested, what the influences of consumption and saving needs are on quantitative or qualitative working efforts, has been treated to an even lesser extent.

because they are saving for their own home. The workers who are prepared to work overtime but do not specifically endeavor to do so often state that the money is saved. In another English study, Sylvia Shimmin and Gwynneth de la Mare found [249] considerable differences in consumption needs among groups with varying amounts of overtime work in the British post office. (See also Leslie Buck and Shimmin [32].) In a French-Canadian study, Tremblay et al. [273] found that most respondents said they did not use income from moonlighting or the housewife's work outside the home for any particular purpose, but rather as an extra contribution to the general budget. W. J. Bilkey, V. G. Massaro, and J. P. Meehan, Jr. found [19] in a US sample of working housewives in the age group 20 through 30 that most of their earnings went to saving for a home of their own. These families saved more than families in which the housewife did not work. Older families with working wives saved less than other families, however.

A German study by Elisabeth Pfeil showed [223] how different motives for goal-directed saving influence married women to find employment at different stages in the family life cycle. Pearl Jephcott, Nancy Seear, and J. H. Smith found [106] that saving for long-term objectives, even in families with a working wife, appeared to be unusual in the London district they investigated. However, any type of saving for an objective well within reach was regarded as an obvious justification for the husband to work overtime and for the wife to take a job.

Edmund Dahlström suggested [50] that a wife's income may be important for the family economy in a number of different ways: to satisfy certain more "essential needs," to contribute toward maintaining a certain standard, to permit the realization of a given consumption goal, or to provide security for the future. At the same time, he pointed out that interview replies which give economic reasons for the housewife's working need not always mean that these have been decisive. In any case, studies referred to by Lois W. Hoffman [100] and Marion G. Sobol [259] showed that specific consumption goals are often given by married women as the reason for working.[23] Also, Stanley Lebergott suggested [149] on the basis of a study made by the Federal Reserve Board that the wife of today will enter the labor force to work for a car, a washing machine, or a refrigerator. This is a more usual occurrence than entering the labor force to help buy a house. Macroeconomic data analyzed by Lebergott [150] are consistent with this hypothesis. (See also the reply by Gary Fromm and Klein [76], p. 238, to a critical comment by Zvi Griliches [84], p. 224, on this point.)

In a large survey study, Morgan et al. showed ([188], p. 73) that, besides sociodemographic data, the individual's plans to send his children

[23] This does not appear to be the case, however, for families with high incomes — see Barlow et al. [8].

to college and/or to support his parents significantly influenced the number of hours per week that the head of the family worked as well as the labor force participation of the housewife (p. 109). Crockett attempted [47] with the aid of econometric methods to investigate (on cross-sectional data) the presence or absence of what she calls "consumption-induced" income. This was done on the basis of comparisons of the regression of consumption on income, between families with more than one person employed (where the consumption-induced income may be expected to be greater) and families with only one person employed (where the consumption-induced income may be expected to be less). Crockett was *not* able to find any signs of consumption-induced income, but she pointed out that it may equally well be saving motives which result in more than one person in the household seeking employment.

An investigation and discussion of the role of economic motives in job shifts was performed by B. G. Rundblad [235]. Among the voluntary movers in his study, wages was a more important reason for leaving the old job among men 45 years of age than among men 35 or 55 years of age (p. 259). In the two older age groups, white-collar workers put more emphasis upon economic rewards as a reason for changing than did manual workers. With regard to reasons for choosing the new job, economic rewards offered seemed to increase in importance with increasing age. There were no attempts to study the felt consumption or saving needs of the respondents. For other studies in this field, see Gladys L. Palmer et al. [219].

The trade-off of greater income against the negative aspects of a greater working effort — above all, less leisure time — has also been the subject of study. A number of recent articles have been devoted to theoretical writings concerning the extent to which time (including leisure time) is valued and the way in which the value of time affects individual decisions concerning the supply of labor (G. S. Becker [11]; Martin Bronfenbrenner [30]; Staffan Burenstam Linder [33]; D. N. Milstein [172]; L. N. Moses [195]; Jan Mossin and Bronfenbrenner [196]; Richard Perlman [221, 222]; Simon Rottenberg [233]; and Roger Sherman and T. D. Willett [248]). Becker's article involves a radically new approach to the treatment of the time aspect in consumer behavior, as does the work by Burenstam Linder.[24] Empirical data concerning the relationship between wages and actual labor supply have been assembled and analyzed by M. S. Feldstein [61], T. A. Finegan [67], Morgan et al. [188] and G. C. Winston [288], with reference to working hours and by Jacob Mincer [173] with reference

[24] Burenstam Linder has also provided an outline of a new theory of saving, based on the assumption that the individual wants to combine consumption *time* and consumption *goods* as efficiently as possible.

to the work of married women. Dan Gowler has studied [81] determinants of the supply of labor on the level of the individual firm.

Verbal preferences for work versus leisure have also been studied. In one study, Morgan, I. A. Siragelдin, and Nancy Baerwaldt asked [189] the following question: "Some people would like to work more hours a week if they could be paid for it. Others would prefer to work fewer hours a week even if they earned less. How do you feel about this?" A third of those respondents in the representative sample who were gainfully employed wanted more work; only 13 percent wanted less work and less pay. Respondents with higher education, particularly the younger ones, were most prone to wish less work (p. 92). Other empirical studies of the value that individuals accord increased leisure compared with the value of increased income (in connection with wage increases) have been presented by S. M. Nealey [206, 207] and Nealey and J. G. Goodale [208].

Morgan summarized [186] some of the results of studies on the supply of work in the statement that the less money people make per hour, the more hours they report working, and the more extra work they want. This finding from cross-sectional studies can be reconciled with the observation from time-series studies that rising real wages seem to have little depressing influence on total working hours[25] by hypothesizing that there are "socially established standards of what an acceptable income level is . . . and that people strive to get to them, by working harder if their wage rates are low. And these standards rise as the average income level rises" ([186], p. 32).[26] What is considered a socially acceptable income level may very well, we might add, be partly due to perceived consumption and/or saving needs.

Of course, the effects of income taxation on work effort depend on among other things the extent to which individuals want to maintain a specific standard of consumption and/or private saving. The conclusion frequently drawn in studies attempting to deal with this issue is that an increase in income tax will not lead to any important decrease in the supply of effort and, conversely, that a decrease in such rates will not bring about a significant increase in the supply of effort (for reviews of the available empirical evidence, see Barlow et al. [8]; G. F. Break [26, 27]; E. R. Rolph and Break [230]; and Burkhard Strümpel [265]). These findings are not inconsistent with the idea that consumption and saving standards play a part in forming reactions to income changes, including those brought about by changes in taxation.

[25] Also, the number and proportion of employees working long hours is steadily rising in the United States. Peter Henle, having established this fact, called it "an incongruous phenomenon in today's leisure-minded world" ([95], p. 727).

[26] Studies directly aiming at measuring the satisfactions provided by a given income level and income aspirations include an early article by Richard Centers and Hadley Cantril [38], and a study by S. Moscovici and F. Columelli [194].

Perhaps the most central problem for subsequent research in this area will be to investigate the extent to which the individual regards himself as being capable of influencing his own or the family income, that is, whether courses of action other than the status quo are considered feasible and, if this is the case, what courses of action are considered. Questions approximately of this type have previously been asked by Barlow et al. ([8], p. 136), Katona ([122], p. 115), and Harold L. Wilensky ([285], p. 43).[27] It should be possible, however, to construct better and more searching questions, perhaps in the form of a battery. In this connection, it is interesting to note a finding by Moscovici and Columelli in a study of French workers [194]. Those people who had difficulties in making ends meet in their budgets were *less* inclined to certain personal efforts to attain a higher salary than were people with more nearly balanced budgets. The courses of action they were unwilling to accept were harder work, overtime hours, or professional training.[28] Moscovici and Columelli suggested by way of explaination that the efforts one is disposed to make to increase one's income are not derived from a precarious economic stiuation, but presuppose a situation that is "good enough to be improvable." This finding would be interesting to follow up in other countries and samples. It can also be compared with the finding by Katona ([119], p. 96) that people with low incomes (and, presumably, small savings) are *not* the group most dissatisfied with their current amount of savings. Perhaps a mechanism similar to that hypothesized by Moscovici and Columelli is at work here.

It should also be possible to measure certain basic personality traits and general attitudes and values which may cause some people to prefer to make attempts to increase income and others to prefer the status quo. Basic attitudes toward consumption, saving, and leisure should be amenable to research, for instance, by means of specially constructed attitude scales; and these attitudes, perhaps to be denoted as "life styles," could be compared with different actions which can be regarded as earning activities. Attitudes toward consumption and saving might well turn out to be better predictors of income-earning activities than are actual amounts of consumption and saving, the latter, of course, being strongly influenced by a

[27] Barlow et al. asked, "Do you have opportunities to earn additional income by working more or taking on extra work?" If the answer was affirmative, the question was also asked, "How do you decide how much work to do then?" Katona's question was, "Are you people making a special effort to add to your income, for example, by trying to earn money outside of your regular job?" Wilensky's question referred to working hours and asked, "Thinking now of your schedule of work — the hours you put in — do you have much control over this, or is your schedule more or less fixed?"

[28] They were, however, more willing to change place of residence or work than were people with more balanced budgets.

number of other economic and social factors.[29] Few studies relevant to this point appear to have been made, however, but Wilensky has attempted [286] with some success to relate the measures "consumption enthusiasm" and "feeling of economic deprivation" (that is, to be in an economic position poorer than that of one's parents) to the amount of extra work undertaken in different male occupational groups. Strümpel showed in an interesting study [264] made in an underdeveloped country, British Honduras, how individual differences in consumption aspirations of peasants seemed to influence their industriousness and readiness for local and occupational mobility. Shimmin and de la Mare compared the results of a personality inventory with tendencies to undertake extra work [249] but they did not arrive at any conclusive results. P. E. Mott in one of the most ambitious studies of extra work [197] found certain personality differences between those who had several sources of income and those who had not; the moonlighters were, according to the personality inventory used, more outgoing, warmer, more stable, more practical, more independent, and also more active in organizations. Mott took these and other observations to mean that the moonlighter deviates from others with respect to three factors: personality profile, physical work capacity, and economic aspirations (the income from normal working hours was not lower for the moonlighters than for others).

The answers to the question of whether hard work or luck leads to success have been shown by Morgan et al. [188] to correlate with, among other things, the number of hours worked per week. A measure of achievement need also showed such a correlation. In a subsequent study by Morgan et al. [189] it was found, however, that the index of achievement orientation (a different index compared with that used in the previous study) and the extent to which hard work or luck is judged as important for financial success did not seem to be related to measures of work effort (p. 32). Achievement need on the part of the husband had some explanatory value, however, when it came to the question of whether the wife

[29] A number of studies, albeit on small samples, establishing that there is no positive correlation between income-earning activities in the form of housewives' work or overtime and the actual number of certain consumer goods possessed (Ann H. Caudle [37]; de la Mare and J. Walker [54]; Jephcott et al. [106]; and T. A. Mahoney [159]) or plans to purchase big items (Mildred W. Weil [283]) should, therefore, perhaps not be regarded as definitely implying that there is no connection between "consummatory" needs and income-earning responses. Also, the quality and expensiveness of the goods possessed may differ among groups working to varying extents, even if the actual amount of some possessions is the same. That there can be very substantial differences in desire for ownership of consumer goods, even for persons having equivalent earnings, has been clearly shown by French research cited by R. F. Hamilton ([91], pp. 84-86); for almost all items in a list of consumer goods, those in white-collar jobs in a particular income bracket showed a greater interest in owning these goods than did workers.

should work (pp. 52-61); when husbands disapproved of working mothers, those wives of husbands with high achievement orientation were more prone to work than were others. High achievement orientation also led to more home production (p. 136) and to a greater range of other unpaid activities, such as volunteer work for others and investing time in courses and lessons (p. 160). Attitude indexes, such as social participation, ambition, caution, and closeness of family ties had no important relationship to hours worked (p. 31), whereas the index of receptivity constructed by Morgan et al., two major components of which were use of and interest in new products, seemed to be associated with greater working effort in one group within the sample (pp. 24-27). Geographic and occupational mobility, which may be important prerequisites for earning higher income, were found to be influenced by the following subjective factors: achievement orientation, ambition, and receptivity to change (pp. 250-58). Variations in achievement need can also, as shown by H. L. Sheppard and A. H. Belitsky [246], account for some of the differences in jobseeking behavior among unemployed male blue-collar workers (for example, the time the worker delays after being laid off before starting his job search, the number of companies he visits during the first month of unemployment, the range of occupations considered, and the total number of jobseeking techniques used).

To summarize, according to the foregoing theories, income earning, consumption, and saving often interact in a complicated fashion. To designate income as a stimulus and consumption and saving as responses might sometimes be misleading; cases may exist in which earning of income should also be regarded as a response variable. The division of income between consumption and saving is only one aspect of the consumer's behavior, and it is necessary for the complete understanding of consumption and saving to relate this to other aspects of behavior, such as work effort.

We consider this to be an interesting and potentially profitable way of regarding the economic behavior of individuals and families. When empirical material is obtained concerning the mechanisms of the interaction between income and consumption/saving, this approach can probably lead in a number of ways to revisions of some of the economic and econometric theories about household behavior (see Suits [266] for such an opinion). It also appears probable that increased knowledge of the aspects of consumer behavior touched upon here will provide a better basis for the creation of propaganda or fiscal and monetary measures aimed at guiding the behavior of the consumer in a direction favorable to the economy.

IV. STIMULUS VARIABLES (*S* VARIABLES)

As was mentioned in Chapter II, "Classical Economic Theories, Keynes, and Katona . . .," many of the econometric studies are of the *S-R* type, that is, they aim at relating certain stimuli or features of the individual's environment directly to behavior, without attempting to explain these relationships with the aid of organism variables. In these studies the individual is regarded as a "black box," the events within which are not observable, or in certain cases perhaps as an "empty box," within which nothing of interest takes place. Other more psychologically oriented studies investigate how different stimuli are perceived and interpreted by the individual (studies of perception) and how stimuli lead to the development of and changes in more permanent organism variables (such as knowledge, attitudes, decision criteria, and personality traits). Studies of this type may be regarded as of the *S-O* type.

In this chapter we present a number of studies of the influence of situations and stimuli on *R* and *O* variables. We shall, however, deal only briefly with *S-R* studies which dominate the economics literature and shall devote our attention primarily to the research which has attempted to relate *S* variables to *O* variables.

Income and Income Changes, Wealth, and Other Economic Events and Conditions Pertaining to the Individual

Income and Income Changes

It is rather difficult to treat the concept of income in terms of the *S-O-R* model. Income is sometimes used merely in the construction of a given response variable, such as the ratio between saving and income. Income cannot be regarded as a stimulus variable in such cases. But the saving ratio is, for example, frequently studied as a function of income, the hypothesis being that the saving ratio varies with income. Varying levels of income give rise to varying amounts of saving, according to this hypothesis. It is reasonable in such a case to regard income as a stimulus variable. One might in the same way regard studies of the relationship between saving,

measured in absolute terms, and income as studies of *S-R* relationships.[30] It also appears suitable to regard income *changes* as *S* variables.

We are aware that the discussion to be presented concerning income is very incomplete, bearing in mind the number of extremely difficult problems which may be distinguished in connection with the definition of the concept of income. The income of the individual consists of an addition to resources or purchasing power during a given period. One problem is to distinguish between nominal, bookkeeping income and the resources which the individual has in fact had at his disposal, usually called the individual's disposable income. Tax payments and cash flows over time must be taken into account when computing disposable income. It is usual to assume that it is the disposable income which is decisive for individual saving and consumption decisions. It can, however, also be maintained that nominal income is not without importance in this connection.

Sources of income may vary considerably, which is without doubt extremely important for saving (see, for example, Robert S. Holbrook and Frank Stafford [101]). We can distinguish among different income elements with reference to the degree of certainty with which they are predicted by the individual. Basic salary, various welfare payments, and so on may be regarded as entirely predictable, whereas capital gains or gambling profits may arise without any effort or expectancy on the part of the individual. The degree of certainty and predictability of different income elements can be important in decisions concerning consumption or saving.

Income arises in some cases through a combination of an individual's work and real assets (owner-managers, farmers). The task of determining the "genuine" depreciation of real assets and the amount which the individual has in fact had at his disposal during the period in question is a more or less impossible one in cases such as these. Furthermore, it is in some cases possible for the individual to perform work which does not generate a cash flow, but instead frees him from the necessity of buying external services. This is the case, for example, with work in one's own home or the exchange of services between different occupational categories. The task of estimating the importance of these occurrences and taking them into account when comparing the income of different individuals is also an extremely difficult one.

These problems are merely examples of the difficulties and unclear points concerning the concept of income; the scope of this report does not permit a more detailed examination of such problems.

As can be seen from Ferber's review [63], the relationship between

[30] The technical and statistical problems which arise when saving is correlated with income, of which saving itself is a part (see, for example, Suits [266]), should be observed.

income and consumption or saving has been studied in terms of three different theories, "the absolute income hypothesis," "the relative income hypothesis," and "the permanent income hypothesis." The theories have been tested using time-series and cross-sectional data, and at both the microeconomic and the macroeconomic levels. As Ferber points out, it is interesting to note that all three theories were originally advanced as descriptions of the actions of the individual consumer, before being generalized to apply to aggregates. The main purpose of all of the theories is to isolate the influence of income by holding constant other possibly relevant but less important variables.

The arguments on which the absolute income hypothesis is based, which are at least partly of a psychological nature, have already been dealt with in Chapter II. As can be seen in Ferber's review [63] and in others, a large number of empirical studies have related income to saving or to the saving ratio. The results show the presence of such relationships, of course.[31] Cross-sectional data and time-series data, however, give rise to different conclusions about the nature of the relationship, that is, whether the average saving ratio increases with income. Different time-series analyses also provide greatly varying results; see Crockett and Friend [48] and Paul J. Taubman [267] for discussions of this fact. The question of whether the marginal saving ratio increases with income is also without a final answer.

The best-known version of the permanent income hypothesis has been presented by Friedman [71]. The hypothesis states that saving and consumption are guided by individual expectations about income during a long period of time, perhaps the whole life span. The levels of consumption and saving are determined on the basis of this expected income, and the level of consumption is a constant proportion of the expected income (although this proportion may vary depending on the composition of the household). Actual consumption and saving are, however, also affected by transitory income and transitory expenditure. These two components are considered to be random and independent of each other and of permanent income and permanent expenditure. Much has been written about Friedman's hypothesis and considerable amounts of data have been analyzed in order to test it, but no definite conclusions about the circumstances under which the hypothesis may be said to be valid have been reached (Ackley [1], Ferber [63], and Suits [266]).[32]

In commenting on Friedman's model, Katona has pointed out ([119], pp. 150-51) that the stress on long-term planning and on definite expec-

[31] The extent of *contractual* saving also appears to be related primarily to income (and to certain sociodemographic data). See W. C. Reher [227].

[32] For recent testing of the permanent income hypothesis, see, for example, Holbrook and Stafford [101] and Thomas Mayer [163].

tations which the model involves excludes consideration of the fact that attitudes and expectations are flexible and subject to learning. It is difficult to know whether the originator of the model (and those presenting other similar models) would be influenced to modify it by empirical observations that consumer attitudes, expectations, and goals fluctuate and often are subject to changes as a result of environmental events. Be that as it may, intuitively the model does not appear to be particularly suitable as a starting point for psychologically oriented studies.

The relative income hypothesis was first outlined by Dorothy S. Brady and Rose D. Friedman [25]. This hypothesis states that the saving ratio does not depend on the absolute level of income but on the individual's relative position on the income scale of the society in which he lives. The hypothesis was transformed by Duesenberry [58] into the assumption that the saving ratio is a function of the ratio between current income and the highest attained income during previous years. This means that the saving ratio is presumed to be lower for the individual who has previously had the opportunity of a higher level of consumption because of high income than for the individual who has never previously received a higher income. The hypothesis implies that the saving ratio is in principle independent of the absolute level of income. Duesenberry believed that there are social motives behind the postulated behavior pattern. Certain data appear to support the relative income hypothesis but, according to, for example, F. E. Dickey [55], Ferber [63], and Guthrie [87], it is an open question whether the same data could not as easily be explained with the aid of other variables and theories.

Both T. M. Brown [31] and T. E. Davis [51] have proposed that "highest attained income" be replaced by "highest attained consumption" in the relative income hypothesis, the justification being that it is previous consumption rather than previous income which influences current consumption. Katona has been somewhat skeptical [115] of Duesenberry's hypothesis, in view of the observation that people find it difficult to give an account of their income one or two years prior to the interview. According to Katona, it is only the individual's *perception* of previous incomes which influences future saving and consumption, and not his *actual* previous incomes. Parenthetically, this comment by Katona illustrates an important difference between *S-R* and *S-O-R* saving models.

Duesenberry's version of the relative income hypothesis may be said to be a hypothesis relating *income changes* to saving. A number of studies have shown that, at least in the United States, income variations from year to year are great for many individuals and households, even apart from changes resulting from unemployment (see R. B. Bristol, Jr. [29], Katona

and Mueller [130], and Morgan [182]).[33] The reported changes are numerically greater for panel studies, in which actual income changes are determined by comparing income received at the time of one interview with the income reported in a previous one, than for cross-sectional studies, in which questions asked in a single interview are the only source of information. Morgan has made a careful study [182] of the anatomy of income changes. References to studies of the effect of income changes on saving (*S-R* studies) are given by Ferber [63]. A high saving ratio is found more often for those individuals at a given income level who have experienced increases in income than for those who have experienced reduced income. Negative saving is more common for those individuals who have experienced either an increase or a reduction in income than for those with stable incomes (see also Katona [124], p. 225). Katona [126] concluded from the recent study of consumer response to income increase (Katona and Mueller [130]) that, in the short term, increases in income and improvements in the financial situation resulted in "a prompt and above average positive effect" on both discretionary expenditures and liquid saving (in particular), whereas everyday expenditures were adapted to income increases with a lag. Also contractual saving and short-term debt were frequently stepped up as a response to income increases.

Morgan presented a careful analysis [183] of the influence of income changes on saving and consumption. Individuals were classed, on the basis of previous and expected income changes, into four groups: above normal income at present, less than normal income at present, normal income at present, and fluctuating income. Saving was highest for the group with fluctuating income and lowest in the group with normal income. In the Swedish saving study, however, Wallberg was unable to obtain any indication of a relationship between income change and saving ratio [281].

A major conclusion in the work by Katona and Mueller [130] is that different kinds of income changes evoke different reactions from consumers. Transitory income changes (such as those arising from overtime or earnings from an occasional second job), unlike sustainable income increases of a similar size, did not appear to have a concurrent effect on discretionary expenditures and on the incurrence of debt. The increase in contractual saving also appeared to be small but liquid saving increased substantially in the same short period in which the transitory income increase occurred, according to Katona and Mueller's summary [130] of the findings concerning such income increases.

Studies concerning the disposition of so-called "windfall incomes," for

[33] Wallberg has presented Swedish data [281] concerning the extent of income changes from one year to another and the relationship between expected and actual changes.

example, gifts and legacies, are discussed by Margaret G. Reid [228] and in various contributions to the *American Economic Review* in 1963 [Vol. 53 (June 1963) pp. 443-54].

Katona's book, *Psychological Analysis of Economic Behavior* [115], contains an extensive discussion about how the individual *perceives* his income, that is, about phenomena of the *S-O* type. Using different surveys, Katona analyzed the extent to which the individual perceived his income as real income, the period of time for which the subjectively perceived income was computed (weeks, months, years), whether individuals regarded income before or after tax as their "true" income, and so forth. In the same work, Katona also provided certain data relating income changes to *expectations* of future income changes. Previously experienced income changes considerably influenced expected changes, but the extent of the influence varied for different study periods. (See further Katona et al. [128] and Katona and Mueller [130], who also related experienced and expected income changes to different forms of discretionary behavior.)

Wealth

The wealth of an individual may also be regarded as a stimulus influencing both the general inclination to save and the direction of saving. Ferber [63] and Suits [266] present some of the results obtained by various researchers concerning the importance of wealth. One observation among others of a more complicated nature is that the influence of wealth on saving depends on income level. This hypothesis was confirmed by Kosobud and Lansing [142], who found that the role of wealth is completely different for those with high and those with low incomes. For those with low incomes, large liquid assets led to less saving than did low liquid assets. For those with high incomes, however, there was a positive correlation between the amount of liquid assets and the saving ratio. In other studies (see Katona [122], p. 217) it was found that *both* high positive and high negative saving were most frequent for individuals with *large* assets (see also C. A. Lininger for data on saving and wealth [156]). The importance of wealth for saving appears, furthermore, to be influenced by whether the individual or the household has received an increase or a reduction in income (Morgan [177]). Katona in all of his studies has presented arguments based on psychological theorizing concerning the relationship between wealth and saving, often making use of the concept of level of aspiration (see [115], p. 168; [119], p. 132; and [122], p. 215). The view that, at least on the basis of *time-series* evidence, there is very little reason to include wealth in the consumption function has also won support (M. K. Evans [59]).

A study of the relationship between debts and saving was carried out

by Tobin [270]. Katona provided figures ([123], pp. 68-70) for the relationship between home ownership and saving for different income groups; greater saving occurred for homeowners almost throughout.

It was further found by Katona [123] that the relationship between wealth and participation in pension plans was limited. The influence of the size of wealth on investment activity was shown (with the aid of an index which attempted to measure different aspects of this activity) by Barlow et al. ([8], p. 83).

The distribution of wealth among different assets has also been the subject of study. It may be said to be a function of earlier and recent choices among different forms of saving. Dorothy S. Projector and her co-workers (Projector [225]; Projector et al. [226]) have presented a detailed account of the distribution of wealth among different types of assets for different wealth and age groups. Ferber [63] and Edna C. Douglas [56] have discussed studies dealing with the relationships among *S* variables and wealth distribution. Reasons of a more psychological nature underlying a given wealth distribution will be dealt with in Chapter V, where the *O* variables are discussed.

Other Economic Events and Conditions Pertaining to the Individual

We have mentioned a number of studies of the relationships to income and wealth of saving and consumption (*S-R* studies). We have also referred to certain studies (by the University of Michigan group) which have dealt with *S-O* relationships: how income and wealth, and changes in these variables, are perceived, and how these perceptions, in turn, affect expectations about future trends.

It is also reasonable to assume that other events which the individual experiences and which have economic implications (such as illness, unemployment, promotion) may influence his behavior, expectations, goals, and values. However, Katona has repeatedly maintained [117, 119] that personal events are of little importance in changing attitudes and expectations in an aggregate of individuals because, if we have understood him, the frequency of these events varies little from one time period to another. According to Katona, changes in attitudes and expectations are to a much greater extent caused by information about general economic events — which is spread through mass media and personal contacts — than by personal financial experiences. To us, it appears reasonable to assume that the effect of certain general economic events[34] might be strengthened if the personal environment or economy is also directly influenced by these events. We have, however, been able to find few studies which have in

[34] The role of general economic events as a group of *S* variables will be dealt with in Chapter IV, "General Economic Events and Conditions."

any systematic way been concerned with the relationship among personal events and *O* and *R* variables. Exceptions are the studies by Mueller [201], who found that personal experience of unemployment (in the respondent's district) did not affect future expectations to any large extent, and by Katona [113], who studied personal circumstances leading to negative saving.

Sociodemographic Variables

Various sociodemographic features (for example, age, education, or family size) to a large extent characterize the social environment and thus the stimulus situation in which the individual finds himself. It appears suitable, therefore, to regard sociodemographic variables as *S* variables in our model. The *perception* of the environment and of the social groups to which an individual belongs should, on the other hand, be regarded as an *O* variable.

Ferber has reviewed [63] a number of studies of the influence of sociodemographic variables on consumption and saving. D. H. Brill has demonstrated [28] similarities and differences in the extent and direction of personal saving in a number of countries in the Organization for Economic Cooperation and Development (OECD). Wallberg has provided [280, 281] Swedish data on the relationships among saving and variables such as occupation, education, age, family type, and support commitments. The so-called life cycle variable, which is thought to reflect the interactions among a number of different sociodemographic characteristics, has been used in a number of studies of the *S-R* type (see Ferber [63]). Variables such as occupation, education, age, and life cycle are all strongly correlated with each other and are, furthermore, often closely associated with the income and wealth variables. It is not, therefore, easy to investigate the influence that each variable in itself has on saving. One observation which does, however, appear to be relatively universal is that saving is very low, often negative, during the family-raising period, that is, the time of marriage and birth of first children; most resources are used at that time for the purchase of consumer durables. The share of income devoted to saving rises gradually up to the age of 50 to 55 years and then decreases again, in some studies very noticeably.

Sex might also be a demographic variable of importance, although it has been little investigated. A study by the National Association of Bank Women showed [205], for instance, that among young wage earners women considered an earlier age as the correct time to start saving and to prepare for the future than did men.

N. J. Smelser has outlined [257] how a consumption function based on social structure variables might be constructed. No specific sociological

variable can, however, according to Smelser, be regarded as the key determinant. The research program (expressed in very general terms) which is outlined has as one of its aims the improvement of the classification of social variables and their combination into organized patterns on the basis of their influence upon consumption and saving. Hamilton concluded [90] from an analysis of data from a West German study that considerable differences exist between middle-class and working-class families, at the same level of income, in their manner of utilizing their economic resources, not least with respect to investment skill (see also Scherhorn and Fricke [239]). The study by Pierre Martineau [162] described in Chapter V, "Preferences for Saving and Consumption," concerning the relationship between social group membership and saving preferences, should also be mentioned in this context.

The subjective feeling of belonging to various demographic and social groups has been studied only to a very limited extent in connection with saving. One exception is Duesenberry [58], who postulated a tendency for the individual to compare his standard of living and his consumption with that of what he regards as a reference group. The saving habits of the reference group can probably also be perceived as a meaningful standard of comparison. Arndt and Wilson have pointed out [4] that this may, for example, be the case with life insurance. According to S. R. Wallace [278], preliminary results from studies made by Robert Nuckols appear to substantiate this assumption.

More thorough attempts to determine the groups to which the individual considers himself to belong and which he uses as a reference when considering his general level of consumption and saving are needed for a better understanding of saving behavior. In research in industrial psychology the degree of satisfaction with wage level and income has been shown to relate to the experience of belonging to specific groups (see Opsahl and Dunnette [217]).

General Economic Events and Conditions

Friend has made a general survey [72] of what is known about the effect of monetary and debt management policy on total saving and on the type of saving chosen. He regards rates of interest, prices, the value and liquidity of assets, and noninterest terms of credit as financial determinants of saving, all of which can be influenced by monetary and fiscal policy in a variety of ways. A number of hypotheses were presented in Friend's study concerning individual saving behavior at different values of these financial stimulus variables, but the data used to illustrate these hypotheses were obtained from studies of aggregates (time series).

Katona refers ([119], pp. 222-23) to a survey made in 1957 in which

the covariation between increases in interest rates and saving was found to be low (apart from the fact that some persons transferred money from accounts with low interest to institutions with higher interest rates).[35] Barlow et al. have reported similar results in a study of people with high incomes [8]. Crockett and Friend also state [48] that no one has been very successful in isolating an interest rate effect on household saving (and that the effects on household investment are limited) but they are of the view that this may be because the analyses have concentrated on the effect of the interest rate rather than, more broadly, of the rate of return on assets.

Brill has summarized [28] the observations of experts from a number of countries about the effect of different official incentives on total saving. Most of these incentive plans are limited in their coverage of financial assets, and they are generally regarded as not leading to an increase in total financial saving. Perhaps West Germany constitutes an exception as a result of its saving incentive system having been extended to all important forms of saving. It should, however, be stressed that the conclusions presented by Brill are based on interpretations of aggregate (and non-experimental) data.

Friend also holds [72] that institutional factors, that is, the introduction of new forms of saving such as private pension plans, or social security measures which are not regarded as saving, may influence the extent of saving. The introduction of new forms of saving, such as variants of payroll saving, has probably been stimulated by the notion that the *number* of available courses of action which can be denoted as saving influences the extent of saving. The OECD publication, "Formation of Savings" [218], provides detailed descriptions of institutional conditions relative to saving in a number of OECD countries, including information about available forms of saving, official incentive schemes, and so forth.

The perception of various economic events (*S-O* analysis) and also to some extent the way in which this perception influences behavior (*S-O-R* analysis) have been the subject of many studies, a number of these having been carried out by Katona and his colleagues. The survey from 1957 [119] mentioned previously showed, for example, that a majority of the respondents were aware that an increase in interest rates had occurred but were not influenced in their behavior by this knowledge. On the other hand, the tax reduction in the US in 1964 influenced consumer expenditure patterns — toward higher consumption — several months before it even became effective because the proposed tax reduction made people optimistic, according to Katona [124].

[35] That such transfers always take place when the interest rate relations change has been disputed by D. A. Alhadeff and Charlotte P. Alhadeff [3] and Vladimir Salyzyn [236, 237].

The average consumer's knowledge of the economy has been studied on a number of occasions. Katona reported results ([119], pp. 146-49) which suggest that the awareness of different economic tendencies and events can be very low. In another study, he found ([122], pp. 121-22), on the other hand, that fluctuations in the average proportion of respondents in regular survey studies who reply that economic conditions have become better (or worse) than they were a year previously show a surprising correspondence to fluctuations in the index of industrial production compiled by the Federal Reserve Board. In the same study, Katona referred to investigations of individual knowledge of economic *causal connections.* According to these investigations, it is unusual to praise the business world or the government when economic conditions improve, and to complain when conditions deteriorate. It is even more unusual to refer to statistics or economic theory. It is more common in bad times than in good for people to say that they have heard economic news. After a while, however, in both good times and bad a certain reduction in the awareness of the current trend occurs, so that the longer a given trend has continued, the more easily information about a change in the trend is perceived. In France public opinion polls have revealed "an astonishing, almost infinite capacity to be uninformed about favorable events. Many workers, when questioned, say there has been no change, although their real income has gone up 5% a year" (Raymond Aron [5], p. 74).

Reactions to inflationary tendencies in the economy have also been studied by the Katona group. Inflation can scarcely arise without consumers and businessmen becoming aware of and reacting to various economic conditions, especially price changes, both past and expected. "This basic fact has rarely been denied. What has been denied has been the necessity to study those reactions. . . . It has been thought that the concept of rational man or economic man implied what these reactions must be and that common sense sufficed to confirm the theoretical deductions," states Katona ([119], p. 193). He has reported [119, 122] a number of observations concerning the extent to which people are conscious of price changes. He has also observed how short-run and long-run expectations concerning future price movements are formed. In addition, Katona has studied the relationships between subjective expectations of changes in the price level and behavior in the form of consumption and saving. According to him [122], the tendency in the United States since the war has been for price increases to be given a negative reception and for expectations concerning price increases to create uncertainty and lack of confidence and, therefore, to *reduce* discretionary consumption.

The perception of inflation and of the declining value of money has also occupied other researchers interested in the individual factors behind

saving and consumption. Boehme has provided [21] an excellent review of the results from those studies made before 1960 which have dealt with the declining value of money as a determining factor in saving behavior. Schmölders has also discussed these problems ([241], Ch. 6). In England, Hilde Behrend [12, 13] and Behrend, Harriet Lynch, and Jean Davies [14] have studied consumer perception of price changes and have attempted to determine how knowledgeable the general public is about the meaning of "inflation." The results of their survey suggest that knowledge of the mechanics of inflation is limited.

Further investigation of the economic information and insight possessed by the individual in modern society is urgently needed. How much knowledge is possessed by consumers in different countries about general economic matters — for instance, the reasons for and the effects of inflation and changes in the business cycle, taxation, and other fiscal measures? To what extent does the knowledge possessed by the individual permit him to grasp the economic discussion which is the basis of much political debate? Our knowledge of these matters is extremely limited.

In Great Britain, a study of this kind was conducted by Behrend et al. [15] who tried to evaluate the reactions of individual citizens to income policy, in this case a pay-freeze. One of their conclusions was that although people found it difficult to understand the objectives of the long-term income policy pursued by the British government, the pay-freeze was a phenomenon which was well-understood. More than half of the sample accepted, for instance, that the pay-freeze had to be applied without exception (p. 50).

On the whole, however, scientific knowledge of the matters discussed in this section is extremely limited. As Morgan pointed out [184]:

> People's levels of information and of economic insight affect their decisions, hence we need to know more about how people get such information and insights. Modern national policies require citizen support, but that support needs to be informed and intelligent. Studies of what people understand about economic policy and problems and how they react to new information and insight are sorely needed. (p. 259)

Channels for the Diffusion of Knowledge and Influence

Studies of how opinions, habits, and consumption are influenced through various media and by word-of-mouth have been an important part of modern social-psychological and sociological theory. One area where considerable advances have been made is the study of the diffusion of innovations. A number of studies concerning various forms of consumption have also been made, concentrating on the importance of various channels of influence, such as opinion leaders or other personal influence,

and analyzing the information which is disseminated through these channels.

It is surprising, therefore, that so few studies of the importance of channels of influence and sources of information have been included in the research on saving. There are, however, a few such. During and immediately after the second World War, studies were made in the United States dealing with the factors which led people to buy government bonds (see Katona [115], pp. 75-76 and 84-85). Personal influence was found to have been extremely effective. Katona, in a study of *changes* in attitudes toward economic development in which the respondents were divided into four groups,[36] reported [117] that about equal proportions (25 percent) in each of the four groups had discussed economic trends during the intervening period with friends or colleagues. Those who were optimistic in the second interview reported more optimistic conversations than did those who were pessimistic. Mueller has expressed the opinion [201] that news communicated by mass media considerably influences the individual's expectation about the future.

Friend has questioned [72] whether the extent of saving during normal conditions can be influenced even by means of powerful promotional campaigns. He stated that no effect resulted in the United States or in India, when such campaigns were conducted. According to Friend, it is, on the other hand, obvious that the intensive sales campaigns conducted by American investment companies and mutual funds during the 1950s contributed to the rapid increase in these investments. J. L. Simon has offered [252] an interesting discussion of whether advertising influences the propensity to consume (and thereby, of course, indirectly the propensity to save).

A study of payroll saving in Sweden [139] conducted by the National Committee for the Propagation of Payroll Saving (Kommittén för Allmänna Lönsparandet) asked the reason for participation of those who used this form of saving. About 29 percent of the reasons given referred to the influence of someone at the workplace (probably often representatives for employer or employee organizations), 24 percent referred to the influence of the saving consultant of the bank, and 19 percent to advertising, posters, or booklets. A larger percentage of women than of men considered that they had been influenced by some form of advertising.

Barlow et al. made a detailed study [8] of the extent to which those with high incomes made use of two types of information sources, personal advice and printed publications. About three out of four people with high incomes (who handled their investments themselves) stated that they ob-

[36] Optimistic on both occasions; first optimistic, then pessimistic; first pessimistic, then optimistic; pessimistic on both occasions.

tained advice from other people before making decisions. The majority of advisers were professional experts within the field. The greater the investment activity, the more extensive was the search for information; and greater investment activity also led to the consultation of specialist journals more than of daily newspapers.

Our total knowledge of the channels through which saving behavior and saving inclinations are influenced is clearly very limited. By which channels are individuals reached with information concerning general economic conditions, the business cycle, and different courses of action in connection with saving decisions? And what information is disseminated through which channel? It is readily apparent that we know little about these matters. It is, in our opinion, a field to which behavioral research on saving should be devoted. In this research it should be possible to tackle simultaneously some of the issues raised in this section and in the preceding one.

Other Background Variables

Our general model of the saving process contains a number of organism variables: perception and construction of courses of action, determination and evaluation of the consequences of the alternatives, perceived relationships among consequences (measured in cash and commodity flows) and more general goals and values, decision criteria, and so on. The *S-O* studies which we have dealt with in this chapter have been concerned primarily with the way in which stimuli and situations may influence certain organism variables which are of a somewhat temporary nature, such as knowledge of and active consideration of courses of action (for example, different forms of saving), and knowledge of and expectations about economic trends in the immediate future.

Some of the organism variables must, however, be conceived of as more permanent. The general goals and values of the individual and the decision criteria he applies may be regarded as examples of more permanent *personality traits.* Traits such as the need for security and safety, or the tendency to take risks must also be thought of as the result of environmental influences in the widest sense. They have, apart from possible hereditary contributions, arisen by means of a continuous development and learning process which has begun and has been guided into certain paths during childhood and has been influenced by childhood conditions and experiences. There is, of course, an extensive literature in psychology dealing with the development of personality traits, but such research problems are outside the scope of this study. However, Chapter V will deal to a considerable extent with individual goals, values, and personality traits as *O* variables of importance to the understanding of the course of the

saving process. Therefore, we wish to point out that studies exist of how such *O* variables are created. It is not unlikely that in this literature we have a body of knowledge which could provide a valuable contribution to the understanding of individual economic behavior.

Some of the studies which come to mind are oriented toward personality theory and often stress the permanence and generality of personality traits and their influence on behavior in a multitude of situations. Another section of the literature is more oriented toward learning theory and stresses that personality traits — and the positive or negative behavior toward various objects which characterizes these traits — are heavily influenced by the situation in which the individual finds himself. G. S. Klein, Harriet L. Barr, and D. L. Wolitzky have provided an excellent review of the field [133].

We believe that an eclectic approach is justified. It appears reasonable to assume that *S* variables *both* create certain highly persistent and generally valid preferences and values *and* lead to certain values temporarily dominating others — for instance, in the case of advertising and personal influence. As an illustration, there is, in our opinion, every reason to attempt to determine which stimuli and environmental features will result in an individual's generally evaluating certain goals, for example, security and high social status, higher than others. At the same time, however, attempts should be made to determine the *S* variables which characterize the situations in which need of security dominates over need of status and those in which the opposite is true.

A General Comment on the Relationship Between *S* and *O* Variables

F. G. Adams and E. W. Green have attempted to demonstrate [2] that the attitude and expectation variables (*O* variables) used in the index developed by the Survey Research Center at the University of Michigan to predict consumer behavior can be almost entirely explained with the aid of objective economic variables, such as unemployment, the average length of the working week, and certain industrial and income indexes. The results and conclusions drawn by these researchers are likely to be the subject of debate. When discussing these problems, Katona has always stressed [117, 119] that the formation of and changes in attitudes and expectations are extremely complicated processes, and that the possibilities of finding a pattern of environmental factors and previous events which determine the *O* variables in question are more or less nonexistent.[37] In a recent article, Katona stated [125] that

[37] It should, however, be mentioned that Mueller found [200] that 60 percent of the variance in the Survey Research Center attitude index could be explained by objective indicators.

There is no one-to-one correlation between changes in the subjective evaluation of income trends or of economic trends, and the actual income changes or the actual economic developments. At certain times, change in the ability to buy may be of paramount influence, while at other times willingness to buy may improve or deteriorate even when the changes in the environment are in the opposite direction. (pp. 22-23)

It is apparent that whereas Adams and Green have attempted to apply a pure *S-R* model, Katona favors an *O-R* model.

In Chapter II we expressed an interest in attempting to increase the list of *O* variables and to obtain more information about their interaction with each other. The introduction of *O* variables into models of consumption and saving behavior should, for a number of reasons, improve the opportunities for prediction and explanation. One reason is that the assessment and evaluation of consequences can often be thought of as summing up the effects of a greatly diversified array of stimuli received by the individual on previous occasions — stimuli that are often extremely inaccessible to the researcher, as has been pointed out by Katona. Other *O* variables can be thought of in the same way, as the distillation of a number of unobservable experiences. Another reason is that the relationships among *S* and *O* variables are often extremely complicated; we need only look at the complicated models which are thought necessary to describe the simplest perceptual phenomena. *O-R* models may perhaps be thought of as requiring a somewhat simpler construction. It is, however, absolutely essential, not least from a decision-maker's point of view, to attempt to relate the *O* variables found by studying individuals to different types of *S* variables, thus providing opportunities for studying *S-O* and *S-O-R* relationships in a more systematic way than so far has been the case.

V. ORGANISM VARIABLES (*O* VARIABLES)

In Chapter II, a system of *O* variables was outlined which may be regarded as constituting a decision process: perception of courses of action, determination of the consequences of different courses of action (and the probability relationships between actions and consequences), evaluation of the consequences which can be expected to be based on perceptions of the instrumentality of the consequences for the attainment of goals of a more general nature, and a decision criterion for choosing among courses of action on the basis of the perceived consequences.

A perusal of the studies of saving which may be regarded as investigations of *O* variables quickly reveals, however, that the investigations are of a diverse character. Because of this fact and the frequently ad hoc nature of the investigations, it is difficult to classify them in a uniform system and not least to force them into the system outlined in this monograph. One of the difficulties in classifying the material is that, strictly speaking, few studies of information about saving alternatives or of motives behind saving — the two most common types of studies of *O* variables — appear to have been based on a theory or a model. Furthermore, the methodology has frequently been somewhat unsophisticated. Despite this, we shall attempt in a more or less arbitrary fashion to classify a number of empirical studies in our own terms. This is done with full awareness that alternative classifications of the material are possible and perhaps less strained and that the quality of the studies referred to varies.

In our opinion, one important distinction is that between (1) studies which focus on relationships between our *O* variables, for example, attitudes or motives, and some *R* variable, for example, the amount saved of a particular type of asset; and (2) studies which investigate only specific *O* variables without attempting to relate them directly to saving behavior.[38] We shall refer to the two types of studies as *O-R* and *O* studies, respectively. Some relationship between the *O* variables studied and behavior is

[38] A number of studies attempting to relate the *O* variables to *stimulus variables* (*S* variables) are dealt with in Chapter IV (especially under "General Economic Events and Conditions").

probably implicitly assumed, although not studied empirically, in the latter type of study. A surprisingly large proportion of the studies we have reviewed are in this category, for example, studies measuring knowledge about saving alternatives or saving motives without concurrently establishing whether individuals with differing knowledge or motives differ in any way in their behavior.

The variables, with respect to which various saving studies have attempted to describe individuals, can be roughly separated by using two classificatory grounds. The first of these takes into account whether the study in question investigates variables which may influence the choice of *saving versus consumption* or aims at variables which may influence the choice between *alternative forms of saving.* The distinction sometimes becomes somewhat artificial — it is, for example, in certain cases difficult to distinguish between consequences of saving in general and of various forms of saving — and perhaps it also suggests unintentionally that the decision process follows a model of the funnel type (see Chapter III, "How Salient Is Saving in Household Decision-Making?"). On the whole, however, this way of classifying studies seems meaningful and applicable.

We have attempted, furthermore, to distinguish among (1) studies including general evaluations of the *value* of saving or different forms of saving, (2) studies of *knowledge about and evaluations of the consequences* of saving in general and of different forms of saving, and (3) studies of statements about the motives and needs of a more general nature which may be regarded as giving rise to saving or nonsaving and to choices of different forms of saving. We call the studies under (3) *goal* studies. In using this classification an attempt has been made to parallel to some degree the model of decision processes presented in Chart 1, Chapter II.

Thus, six (2 times 3) groups of studies are obtained. In the first part of this chapter, we deal with *O* variables concerning the *total extent of saving,* that is, saving as opposed to consumption. Studies concerning general evaluations of the value of saving as contrasted with that of (immediate) consumption are dealt with first. These studies may be described in our terminology as studies of *preferences* for different courses of action (without attempting to establish any relationships among actions and consequences). They are of the *O* type throughout. The next group focuses on estimations of the consequences of saving measured in concrete terms, that is, assessments of the results of saving in the form of future cash and commodity flows.[39] Such studies are called studies of perceived *conse-*

[39] A detailed study of the complete process of allocation of resources between saving and consumption would, of course, also deal with studies of consequences and motives which give rise to different forms of consumption, since these are courses of action which compete with the saving alternatives. We have, however,

quences (and of relationships among courses of action and consequences); most studies are of the *O* type. The final group of studies under the heading "Perceived Value, Consequences, and Goals of Saving" concerns the motives, needs, and *goals* which are expected to give rise to saving or nonsaving; these studies are also mainly of the *O* type.

It should be noted that the distinction between consequences and goals is a tenuous one. This is especially the case when respondents have been asked to reply to completely open questions as to why they save or why saving is desirable. It is fairly natural that the replies obtained vary considerably with respect to degree of abstraction, from the stressing of extremely concrete consequences (such as better interest rates, inflationary losses, or the possibility of buying a car), to more abstract goals (such as the need for security "for a rainy day," the satisfaction of being able to give one's children a good start in life, or general references to future consumption needs).

We then deal with *O* variables concerning the *choice among different forms of saving.* First, studies of general *preferences* for different forms of saving are considered. Thereafter a group of studies concerning knowledge of *consequences* connected with different forms of saving and concerning the evaluations of such consequences is presented. These studies touch upon knowledge of interest rates, tax consequences of different forms of saving, and how shares are bought, among other things. They also deal with preferences with regard to such matters as liquidity (which may vary for different forms of saving), the security of assets, and payoffs in the short versus the long run. This group includes studies both of the *O* type and of the *O-R* type. Finally, the section deals with studies of statements about *goals* which might be attained through different forms of saving.

A number of studies, however, lie outside our model. These include studies of knowledge and evaluations of instalment purchasing which, as mentioned previously, may, of course, be regarded as involving decisions both about saving (over a number of future periods) and about consumption. We have, therefore, chosen to deal with knowledge and evaluations of the consequences of the *instalment purchasing* alternative in a special section. Finally, a section of this chapter, "Personality Traits and Saving," deals with a small number of studies which have attempted to relate certain general *personality traits* to saving and provides some general comments on possible relationships between personality and economic behavior.

found it impossible to deal with consumption studies, for reasons of space. Nor do we report studies of consequences or motives associated with the consumption of durable goods and real investment despite the fact that these may perhaps be regarded as aspects of saving behavior.

Perceived Value, Consequences, and Goals of Saving

Preferences for Saving and Consumption

The following question was asked in the Swedish study on household saving in 1957 (Wallberg [280]): "If you think about Swedish households in general, do you consider that the majority ought to save part of their earnings?" Of the respondents, 76.1 percent gave a positive response whereas 7.6 percent were of the opposite opinion. The study in 1958 (Wallberg [281]) gave similar results. The responses were not related to the actual behavior of the individuals, and the inquiry thus constitutes an *O* study. Katona reported ([119], p. 96) that the responses to a question which also may be regarded as an attempt to measure the preference for saving ("How do you feel about the amount of money you now have saved up — is it far too little, fairly satisfactory, fully adequate, or what?") showed that the least satisfied group was *not* the low-income group.

A common technique for obtaining an impression of individual inclinations toward saving and consumption is, for example, to ask: "What would you do if you were given $1,000 tomorrow?" Variations on this theme can be found in C. A. Hickman and M. H. Kuhn [96], Thorkild Hjortkjaer [99], Katona [123], Eric Lindström [155], Martineau [162], National Association of Bank Women [205], and others. The proportion of individuals who report that they would save the money varies considerably depending on how the question is formulated, and on the whole it appears to be difficult to interpret the responses. Martineau is the only researcher [162] who used the results for a more thorough analysis of saving preferences. He found clear class differences: the higher the social class, the more common the saving responses. A further interesting difference is that the higher the social class of which the individual was a member, the more common it was for him also to state *how* he was going to save. Individuals with low social status often stated, on the other hand, *why* the money should be saved. This was not the case for individuals of high status for whom the advantages of saving were obvious and need not be enlarged upon.

In his study of English workers, Zweig found [290] that attitudes toward saving in this group are changing considerably. The expressions, "I do not believe in saving," and "You may be dead tomorrow," are seldom heard nowadays, and positive attitudes toward saving are much more usual. Those who do not save usually regret that they are unable to do so.

It is readily apparent that the studies of attitudes toward saving presented here are not particularly complete. It is difficult to evaluate the reliability of the answers when single questions are used, and it is difficult to interpret the responses to such questions. It should be possible to obtain

considerably more reliable and more interpretable data about saving preferences using modern psychometric techniques, for example, by applying a battery of questions combined into some sort of attitude scale (see, for example, A. N. Oppenheim [216]). Some attempts to factor-analyze attitudes toward saving have been made in England, as reported by Jean Morton-Williams [193].

Consequences of Saving

As has been mentioned previously, it is difficult to interpret the responses to completely open questions about saving motives. Wallberg found [280] that 37 percent of the respondents gave consequences of a more concrete nature as the most important reason for saving or wishing to save (goal-directed saving for consumption purposes, for a home of one's own, for other investments, or in order to pay debts and interest). The 1958 study also included 6 percent who reported saving for educational goals (Wallberg [281]); responses were otherwise extremely similar in the two studies. The responses were not compared with actual behavior. This is also the case with Katona who has reported [116, 119] that saving to generate income in the form of profits and interest is unusual, that owner-managers have an extremely important motive for high saving (that is, to plough back their earnings into their businesses), and that saving with the view to redistributing commodity flows (postponing consumption) is very usual, frequently to permit consumption in old age. The same results were obtained in the early 1960s (Katona [122]). Barlow et al., studying people with high incomes, also found [8] that saving for consumption in old age is given by the respondents as the most important reason for saving.

With reference to this motive, Katona made a special study [123] in which he attempted to determine when individuals in different age groups planned to retire and what their earnings were expected to be during retirement. Eighty-five percent were able to make a guess as to their expected income when retired. The respondents were also asked to state the income which they regarded as a minimum upon retirement. These data were related to current saving in the form of participation in pension plans and other saving. Katona's main conclusion was that participation in pension plans appears to be correlated positively with saving in other forms. Assuming, as does Katona, that participation in pension plans is entirely guided by institutional factors — to which group in society the individual belongs — and not by personal decisions, these results suggest that participation in pension plans stimulates other saving as well.

Hjortkjaer attempted to determine [99] toward which goods consumption-directed saving was aimed, but his results appear unreliable. The National Committee for the Propagation of Payroll Saving found in a

Swedish study [140] that between 10 percent and 25 percent of all individuals between 15 and 30 years of age saved for the purpose of obtaining housing.

Expected future economic trends influence the perceived consequences of current saving, of course, and it is, therefore, natural that Katona has studied ([115] and [119], pp. 106-9) the extent to which optimism about the future is related to varying degrees of saving. According to Katona, in 1955 when the study was made people who were optimistic about the future saved more (at the same time as they bought more consumer durables) than those who were pessimistic, but he warns against generalizing from results for a single year. During normal business cycle conditions, Mueller and Osborne were unable to demonstrate any relationship between expected prices and the tendency to withdraw money from bank accounts [204]. And Katona and Mueller found [130] that whereas financial expectations appeared to have some effect on decisions to incur new debt, decisions about saving were *not* influenced by financial expectations.

Boehme presented results ([21], pp. 39-40) from a number of German studies concerning general attitudes toward saving and consumption. One study from the DIVO-Institut concerning *nonsavers* reported only 4 percent who gave negative consequences of saving (primarily inflation) as a reason for their behavior.

Goals of Saving

Goals and aims of a less pecuniary or consumption-oriented nature are, of course, also given as responses to questions as to why people save. Wallberg reported in both of the Swedish saving studies [280, 281] that 32 percent gave "security" as the primary motive for saving; a number of these responses appeared, however, to refer primarily to the opportunity for a higher standard of living and consumption in old age. Moscovici and Columelli also found security to be the most frequently given reason for saving [194]. Likewise, Katona found [116, 119] that security in case of accidents, illness, unemployment, hard times, and so on, was often given as a saving goal. Even those with high incomes save for "a rainy day" — or at least regard themselves as doing so. Such a statement was made by one-third of the respondents in Barlow et al. [8].

Katona has reported [116, 119] survey studies showing that the desire to bequeath legacies is relatively unusual as a conscious goal of saving. Guthrie made a special study of this question [88]. Respondents of different generations and with documented different degrees of saving propensity were asked about their attitudes toward different methods of transferring wealth to dependents: financial transfers during parents' life, educational support, or bequests. The financing of education was the

method preferred most often, but individuals with large savings mentioned bequests to a considerably greater extent than did others. Guthrie also asked questions about the forms of assets which were most suitable for bequest purposes, and he investigated the attitudes of the respondents to different forms of educational support. The goal of leaving a fortune also appears to increase in importance as income increases (Barlow et al. [8], p. 32).

Barlow et al. also reported a number of respondents who stated that their saving was purely habitual or had attained a value per se. Schmölders has put forward [240] a number of theoretical arguments concerning the psychological motives lying behind the accumulation of wealth, especially in lower social classes. Thore has also presented [269] a list of saving motives based on theoretical considerations.

Most of the studies mentioned have been so-called *O* studies. The information provided by them is clearly of limited value — we shall return to this when summarizing the current research position in Chapter VI. An unpretentious study of the *O-R* type, which in our opinion, however, points to a more fruitful way of dealing with the importance of goals held and consequences perceived for saving behavior, has been presented by Schreiber [243]. He asked his respondents to consider different statements which were formulated in such a way that the respondent, depending upon his answers, could be regarded as a supporter or nonsupporter of each of six saving goals. The attitudes of the respondents to each of the saving goals were compared with the extent of their actual saving. One interesting result of Schreiber's study was that the attitude as to whether one should save for large purchases clearly discriminated between individuals with different degrees of saving, whereas the attitude toward the saving goal "security in old age," whether this goal is thought to be important, did not appear to be related to saving behavior at all.

Using a similar approach, Claycamp found [41] only one saving motive which seemed to have any effect on the composition of the respondents' saving portfolios, that is, "saving for a major purchase," which correlated negatively with the proportion of the saving portfolio kept in variable-dollar assets. The correlation was found among homeowners, but not among nonhomeowners. Other motives, such as "saving for old age," "saving for inheritance of children," and "saving for an emergency," did not correlate with saving portfolio composition.

The studies of goals and motives for saving often suffer from methodological weaknesses. It is usual to ask completely open questions, the responses to which are necessarily difficult to interpret and for which the coding reliability is unknown. More sophisticated techniques must be developed in order to permit an investigation of the consequences which

individuals regard as being connected with saving. It is probable that these techniques will be based on presenting arrays of different possible consequences of saving and nonsaving, and that respondents will be asked to state to what extent they believe that the consequences follow from different courses of action and how they would rate the different consequences on scales intended to measure their degree of attractiveness.

Perceived Value, Consequences, and Goals of Saving in Various Forms

Preferences for Forms of Saving

The Swedish studies on household saving have provided data on the attractiveness of various forms of saving. Wallberg found [279] that if the respondents had 1,000 crowns which they wished to save for future needs, only 4.7 percent would place their money in stocks and 8.6 percent would put it in bonds. In 1957 it was simply asked in what form it was thought best to save (Wallberg [280]). Seventy-five percent mentioned saving in banks, 12 percent in real assets, 4 percent in shares, and 2 percent in bonds. In a later study [281], Wallberg obtained similar results. Clear differences in preferences were shown when the respondents were classified with respect to income, education, and so on. No cross-tabulations with actual behavior were reported. Lindström asked similar questions in a limited Swedish study [155]. See also Katona ([119], pp. 204-6) for the tabulation of responses to a similar question. At different times 60 percent to 73 percent of those in the income bracket between $3,000 and $7,500 stated that they preferred savings with a fixed value (bank savings and bonds). To young wage earners in the United States, life insurance ownership was of an importance almost equal to that of a savings account, according to a study by the National Association of Bank Women [205].

It is difficult to discern clearly the meaning of figures such as these, at least when cross-tabulations with actual behavior have not been reported. The relationships between preferences and behavior have shown themselves to be fairly complicated in a number of other situations. The techniques for measuring preferences for different forms of saving (and for different institutions within each form) should also be improved. For reviews of methods for preference scaling, see C. H. Coombs [45], Ölander [213], and W. S. Torgerson [272].

In a small study of the preferences of Swedish high school students for saving in stocks or in banks, Carl-Magnus Seipel attempted to measure preferences in a technically more acceptable fashion. The study is presented in an appendix to an earlier Swedish version of this study (Ölander and Seipel [215]). One of the results of the study was to show that attitudes

toward both bank and stock saving were neutral with a slight positive tendency. The results also suggested that the subjects were more *involved* in their attitudes toward stock.[40] An analysis of the relationship between attitudes toward the two forms of saving suggested that the attitudes of the group toward bank and stock saving respectively were more or less independent.

Consequences Connected with Forms of Saving

One area included under this heading is the knowledge the public has about the objective consequences of choosing different forms of saving. Knowledge of *interest rates* on different types of bank accounts has often been the subject of study. Lindström found [155] that most people questioned believed that the savings banks paid higher interest rates than did commercial banks. About half of the respondents in Hjortkjaer's Danish study [99] were able to give a fairly good account of interest rates for different kinds of deposits, whereas half were unable to reply to the question. Various market studies made for banks provide considerable information concerning the public's knowledge of interest rates, forms of deposit, and so on.

Knowledge of the *stock market* has been studied by Katona ([122], pp. 223-25). Wallberg provided data [279] about the places where people think stock can be purchased. Of the 63 percent of the households who had never owned stocks, 91 percent had no answer to this question.

Knowledge of the *tax consequences* of different forms of saving (such as life insurance, investment in real estate) for those with high incomes was studied by Barlow et al. [8]. A somewhat more detailed account of the study was given by B. L. Gensemer, Lean, and W. B. Neenan [78]. The respondents' knowledge of tax regulations was good in many respects but often did not appear to influence behavior in the direction of using saving and investment forms which were more advantageous from the tax point of view. See Katona and Lansing [127] for other data on the knowledge and values of those with high incomes and on the saving process for those individuals. The study has also been reported by Katona ([122], pp. 212-13). Certain results of the studies concerning knowledge of tax consequences and its effects appear to be somewhat contradictory. .

Knowledge of the content of *pension plans* in which the individuals themselves participated was studied by Cagan [36]. The knowledge was limited. Katona has provided data on knowledge about the benefits and other features of social security [123].

[40] Individuals with exactly the same attitude may vary considerably with respect to the degree of involvement with which the attitude is embraced (see Carolyn W. Sherif, Muzafer Sherif, and R. E. Nebergall [247]).

Regarding *evaluations* of consequences of saving in different forms, it may first be said that the consequences of using particular saving and investment forms differ in a number of ways. Thore gave a detailed description of differences in saving and wealth forms along a *binding spectrum* [269]. The binding spectrum is reminiscent of a liquidity spectrum, although Thore wishes to distinguish between these concepts. Barlow et al. discussed [8] the following characteristics of saving forms: current yield, safety, liquidity, and capital gains. These and some other dimensions have also been used by other researchers studying the public's subjective evaluations of the consequences of different forms of saving.

Barlow et al. presented [8] a multivariate analysis of factors which caused certain individuals with high incomes to prefer high immediate profits on their investments and others to prefer long-term capital appreciation. The variables which primarily distinguished these two groups were level of investment information and tax awareness; preference for current yield was associated with low levels of information and tax awareness.

A previous study of those with high incomes by J. K. Butters, L. D. Thompson, and L. L. Bollinger reported [34] no difficulty in dividing those studied into five groups: those who attempted to preserve their capital, those who aimed at both preserving their capital and obtaining some yield from the capital, those who stressed yield on capital, those who wished to have both capital yield and appreciation, and those who were almost entirely interested in capital appreciation. This is a study of the *O-R* type; Butters et al. found a clear correlation between investment aims stated by the individual and his actual investment behavior.

Katona reported ([115], p. 125) the reasons in terms of consequences given by interviewees to the question as to why it is sensible to save by means of savings accounts, checking accounts, bonds, real estate, or common stocks. Those in favor of bank saving stressed that this form is liquid; those opposed to it stated that the yield is low. It should be noted, however, that the security of bank saving was also heavily stressed. Those in favor of checking accounts stressed convenience in the first instance. Bonds were regarded as secure and providing good yields. Investments in real estate and stock were regarded as uncertain, and real estate was also considered as possibly leading to capital loss.

The consequences most highly valued by buyers of stocks were reported in a study by Katona ([122], p. 223). Expectations of capital gains and high or satisfactory yields were given considerably more often as reasons than was, for example, the resistance of stocks to inflation. In a German investigation by the DIVO-Institut (see Weiss [284], p. 284), 52 percent of the respondents considered the ordinary savings account the most *secure* investment, whereas the most *profitable* investment was thought by 30

percent to be shares, and by 17 percent to be the ordinary savings account.

Swedish results on this point are also available (Wallberg [280]). In this study those who stated that they preferred saving by means of buying shares mentioned the yield as the primary reason (49 percent), followed by lasting value (39 percent). Seven percent gave security as a motive (p. 82). The positive consequences mentioned by those with bank deposits were convenience (38 percent), security (25 percent), and yield (21 percent). Placement in real capital was motivated in 43 percent of the cases by lasting value, in 20 percent by the yield, and in 15 percent by security. The results of the 1958 study, in which the same questions were asked, appear on the whole to be the same (Wallberg [281]). The results of these questions are of limited value, since we are not told how those individuals who did *not* prefer some given form of investment rated this form with respect to the given features. Wallberg's previous study [279] is in fact more interesting in the sense that it gives better *O-R* information, although only with respect to saving by means of shares and bonds. Stockholders (or those who had previously owned stocks) reported the advantages of buying stocks to a considerably greater extent than did those who had never owned them; reported advantages were that shares provide high interest, good yields, high income (36 percent of owners against 18 percent of nonowners), and that the stocks retain their "real value" (17 percent against 2 percent). Over 70 percent of those who had never owned stocks were unable to state any advantage or disadvantage of such ownership. This is presumably one reason why a considerably greater number of stockholders (47 percent) saw disadvantages in the form of uncertainty and loss risks than did nonstockholders (22 percent). Of stockholders, 45 percent saw no disadvantages.

The same tendency was found for bonds: those who had never owned bonds had no idea of the consequences of buying them. Of bondowners, 39 percent reported the chance of a win as one advantage (we are concerned here with premium bonds), and 13 percent mentioned security. The disadvantages were, according to the owners, no yield or a low one (21 percent), the loss of value of the bonds because of money depreciation (12 percent), and the difficulty of selling bonds for cash (6 percent).

The correlation between the extent of expected price increases and preferences for different forms of saving (with varying degrees of value preservation) appears to be very small, according to Katona [119, 122].

The National Committee for the Propagation of Payroll Saving in a study of payroll saving in Sweden in 1964 [139] asked a question which, stretching a point, can be interpreted as an *O-R* approach. The respondents consisted of those who participated in payroll saving in 1964, those who had taken part previously but did not participate in 1964, and those

who had never participated. These groups were asked to state the advantages they connected with these particular forms of saving. The number of respondents reporting "chance of winning"[41] as an advantage varied little among the three groups, whereas the advantage that saving is regular because the employer pays the sum was given to a much greater extent by those who participated or had participated at one time than by those who had not.

In its second study [140], the committee attempted to investigate preference for yield over chances of winning by asking a sample of people aged 15 to 30 years whether they preferred a rise of 1 percent in the rate of interest or a doubled chance of winning in the lottery included in the payroll saving system. A clear majority (about 70 percent) of participants as well as nonparticipants preferred the increased interest rate. Persons deviating from the pattern and preferring increased chances of a win belonged primarily to a group of unmarried young men with comparatively low incomes. A majority of the respondents also preferred a system with many winners and small amounts to a system with few winners and large amounts.

Knowledge of consequences of different forms of saving can often be obtained with the aid of carefully phrased questions concerning the various effects of the choice of a particular form. Some examples are given in the studies reviewed in this section. Still lacking is an experimental program in which the same individuals are asked about the perceived consequences of most variants of saving, and in which the values assigned to different consequences are not regarded as given but are investigated with equal care. Thus we plead in favor of a clear distinction between the individual's *determination* of consequences and the *values* he assigns to those consequences.

Goals Connected with Forms of Saving

We shall refer briefly to a number of studies which have aimed at exploring the relationship between general goals (consumption, security, and so on) and the choice of different saving forms. Schmölders stated [241] that it is possible to divide saving goals into four categories: those covering current household expenses, consumption-directed saving, security saving (*Vorsorgesparen*), and saving aimed at wealth accumulation. The basis of the classification need not be discussed here; we are interested in the considerable differences Schmölders found in comparing the aims behind saving by means of a post office savings account, an account in a savings bank, or a savings account in a commercial bank. No fewer than

[41] Participation in payroll saving in Sweden entitles the participant to a ticket in a lottery arranged by the government.

65 percent stated that post office savings were intended for consumption (as against 41 percent and 45 percent for the other saving forms), whereas both security saving and wealth accumulation saving were more than twice as common in the savings and commercial banks as in the post office.

Mueller and Osborne classified saving goals into "long-run purposes," "contingency purposes," and "short-run purposes" [204]. Checking accounts were almost entirely used for short-run purposes, whereas savings accounts were more often used for long-run purposes (52 percent) and security. Stocks were mentioned by an even larger proportion (only stockholders were asked) as a type of long-run saving, whereas the security aspect was mentioned by only 8 percent in this connection. Most respondents found acceptable the use of savings to finance different types of outlays, even if the goals were often long-run and the withdrawals often temporary. See also the study of Mueller and Lean [203], dealt with in Chapter III, "How Salient Is Saving in Household Decision-making?"

Motives connected with buying of life insurance have been ascertained in various investigations by trade associations, for example, in the United States (Life Insurance Agency Management Association [154]), and in West Germany (Marktforschung der Lebensversicherungsunternehmen [161]). For a study of the importance of various dimensions in life insurance alternatives, see Gordon Wills [287]. Katona has also presented the results from a study of the goals involved in purchase of life insurance ([119], pp. 117-19). Clear differences in the amount of ownership of life insurance were found among those individuals who mentioned it as a good way to save and those who gave other reasons for life insurance ownership. It is, of course, difficult to draw conclusions about the causal direction of this relationship but the study is an example of the type in which differences in organism variables are related to differences in actual behavior.

Perceived Value, Consequences, and Goals of Instalment Purchasing

We mentioned previously that instalment purchasing presents a special problem because it may be regarded both as consumption and as a form of saving. The utilization of consumer credits can be classified as saving in that the consumer undertakes to refrain for a number of future periods from consuming the portion of his income corresponding to the payments. Instalment purchasing can, in this respect, be regarded as a form of "optional forced saving" (C.-J. Bouveng, Sven Sannesson, and Arne Ögren [24]). The increased extent of instalment purchasing has resulted in considerable activity in studying different aspects of the system, not least on the part of public authorities, who attempt to determine the system's long-term effects on the business cycle and on economic and social conditions

in general. Questions have also been asked about the public's general attitude toward instalment purchasing.

Attitudes Toward Instalment Purchasing

The periodic studies by the Survey Research Center at the University of Michigan have contained questions on attitudes toward different aspects of instalment purchasing, one of which is whether the respondent considers it a good or a bad idea to buy things by instalments. The proportion of positive respondents in 1959 was about 60 percent as compared with about 50 percent in the early 1950s. By 1967 the figure was once again about 50 percent (Katona et al. [128]). Individuals with a negative attitude appear to be primarily in the older age brackets (Katona [122]). Attitudes toward instalment purchasing appear to be considerably more negative in other countries, for example, in West Germany (Schmölders [241], pp. 114-18) and in French Canada (Tremblay et al. [273]).

In Sweden a specially appointed Consumer Credit Commission has investigated, through the Central Bureau of Statistics, the use made of and attitudes toward consumer credit in a representative sample of the population [141]. A number of questions concerning instalment purchasing were combined in an index of the degree of positive or negative attitude. Absolute proportions of positive and negative attitudes were not obtained since the index was constructed by designating the 50 percent most positive as positive and the others as negative. Some differences in average index values were obtained among different occupational categories, but there were considerably greater differences for the variables income and liquid assets. Positive attitudes were registered primarily for low liquidity groups and in the middle-income group.

The attitude toward instalment purchasing both in the United States and in Sweden appears to depend considerably on the kind of commodity which is to be financed. Luxury and prestige articles should not, it is felt, be financed by this means, whereas the opposite is true for durables such as cars and furniture. In a study of attitudes toward instalment debt made by Katona et al. [128], the respondents were asked among other questions to indicate which items in a list of expenditures they thought it appropriate to finance by borrowing. Eighty percent thought it proper to borrow to cover expenses of illness, and almost as many approved borrowing to finance educational expenses. About 65 percent thought it appropriate to borrow to finance the purchase of a car; not as many approved borrowing to finance the purchase of furniture or to pay accumulated bills, or to cover living expenses when income is cut. A few (9 percent and 4 percent, respectively) felt it was proper to borrow to cover expenses of a vacation trip or to finance the purchase of a fur coat or jewelry. Six of the items formed

a Guttman scale. If a respondent approved of borrowing for a vacation, he was almost certain to approve of borrowing for living expenses and the other purposes listed in the questionnaire; if he did not approve of borrowing for vacations, but approved of borrowing in order to cover living expenses, he would probably approve borrowing for the remaining purposes, and so forth. The person not finding borrowing for paying medical bills acceptable was not likely to accept it for any of the other purposes mentioned. The Swedish study [141] suggested that instalment purchasing by relatives and friends of the respondent results in a positive attitude toward instalment purchasing.

The Swedish study attempted to explain the purchasing of consumer durables and the use of instalment purchasing by means of multiple regression analysis, in which attitudes toward instalment purchasing were included as one of a number of explanatory variables (income, age, previous experience with instalment purchasing, and so on). The attitude variables bore a significant relationship to instalment purchasing's proportion of total consumption of durables, but the correlations were by no means systematic nor did they appear throughout.

Consequences of Instalment Purchasing

In the University of Michigan studies (Katona [120 and 122]; Katona et al. [128]), the interviewees were asked to explain their positive or negative attitudes toward instalment purchasing. People with positive attitudes stated that they would have gone without certain essential things, if this opportunity for credit had not existed. Another argument was that it is a good thing to use the goods while paying for them. Many respondents regarded it as analogous to the amortization of one's home. Those with negative attitudes stated, in the first instance, that instalment purchasing all too easily leads to excessive spending. A smaller proportion considered instalment purchasing too expensive to use, whereas some stated that they thought it morally reprehensible to go into any state of debt.

The Swedish Consumer Credit Commission pointed out [141] that the existence of instalment purchasing means an increased freedom of choice for the consumer. Of course, it allows consumption at an earlier date than would have otherwise been possible. The way in which the consumer makes use of this opportunity depends on a number of factors, it is held. First, whether the object of the credit has any secondhand value is important. This influences liquidity or ability to meet economic pressures. Furthermore, the consumer must plan and assess future prospects with respect to income, interest rates, price level, probability of product improvements, and the tax consequences of making use of instalment purchasing.

Empirical studies hardly support the contention that the individual

in fact takes into account all the factors which should be considered, according to the reasoning of the Consumer Credit Commission. The Swedish study showed that even knowledge of the nature of instalment purchasing is usually fairly deficient. The deficiencies do not so much occur in knowledge of the general meaning of instalment purchasing as in knowledge of specific credit forms (for example, the credit card system) and the cost of using the instalment purchasing alternative. It might be mentioned that the same results have also appeared in other studies in which questions were asked about knowledge of cost to users of consumer credit (Jean M. Due [57], Juster and R. P. Shay [108], and Katona [122]). For a review of United States studies, see W. P. Mors [192]. The Swedish study also showed a positive correlation between knowledge of different credit forms and the positive attitude toward these and between attitudes and the utilization of the credit forms.

Cost awareness in connection with instalment purchasing has been the subject of fairly detailed investigation. The findings have been that there apparently is a considerable lack of sensitivity to and lack of knowledge of the high cost of instalment purchasing. Knowledge is extremely limited especially with respect to the effective yearly interest rate which is involved in instalment purchasing (Juster and Shay [108]; Katona [122]). There appears to be more knowledge of cost and other conditions among those with high incomes and those who are well-educated but these groups do not account for any large proportion of instalment purchasing. The greatest utilization of instalment purchasing occurs among young, newly formed families, among the middle-income groups, and among people with extensive maintenance commitments. Although the impressions about the cost of credit seem to be vague, people appear to be considerably more conscious of the absolute magnitude of their commitments (the monthly payment sum) and the possibilities of undertaking further instalment purchasing. Current and expected income appear to be decisive in this case (Katona [122]). The Swedish Consumer Credit Commission considered income assessment to be the *decisive* factor, determining whether a decision is made to realize a purchase at an earlier date with the help of instalment purchasing.

Juster and Shay made a number of interesting assertions [108] about the conditions responsible for the lack of knowledge of the costs of instalment purchasing. They maintain that the period of repayment is extremely short because of institutional circumstances and that, because of this, most instalment purchasers are the "victims" of a rationing process. They distinguish between "unrationed" consumers, who either have considerable liquid assets or who do not have a demand for consumer durables, and "rationed" consumers, for whom the opposite is the case. The assumption

is made that cost awareness would arise for the "rationed" consumer as well if rationing were abolished, making it possible for the buyer himself to determine the period of repayment. In the present situation those who are "rationed" do not aim at lowest cost but at the lowest monthly payment. Juster and Shay report that only 7 percent of those studied had an approximately correct impression of the cost of credit in the form of effective yearly interest and that this knowledge is greater in every way in the group of "unrationed" consumers. In quasi-experimental studies, information about actual credit costs was given to consumer groups. The results suggested that the sensitivity to differences in cost would be much greater if the effective yearly interest were stated explicitly in sales contracts, but that this would be true mainly for the "unrationed" consumers.

Goals of Instalment Purchasing

We have been unable to find any detailed study of general goals or values relative to instalment purchasing. The attitude index constructed by the Swedish Consumer Credit Commission included, however, a number of questions which contained references to more general values or goal states. These questions dealt with the relationship of instalment purchasing to prestige, economic freedom, well-ordered finances, and thrift, these aspects having been regarded as involved in the attitude toward instalment purchasing. The questions turned out to be highly intercorrelated, but the size of the correlations varied somewhat between different occupational and consumer groups.

Bouveng et al. have studied instalment purchasing from the viewpoint of the consumer [24] and they have presented a number of different arguments for and against consumer credit. They hold that in some circles a moral condemnation of instalment purchasing exists based on the thesis that "one must not live above one's income." Instalment purchasing can also be criticized for ideological reasons. This is based on the still prevalent reaction to abuses in instalment purchasing during the 19th century, which resulted in instalment purchasing being regarded as "harmful per se." Furthermore, the conclusion can be arrived at from different points of departure that instalment purchasing results in both economic freedom and lack of it. The discussion by Bouveng et al. is not based upon empirical data.

In the University of Michigan studies when respondents were asked to give reasons for their positive attitude toward instalment purchasing, a relatively usual response was that instalment purchasing makes it easier for the individual to *save* (Katona [122]). It is regarded as an advantage to be forced to set aside a given sum at recurring intervals. The same opinion was also prevalent about other contractual forms of saving, for

instance, payroll saving in Sweden [139]. Such statements may be interpreted to mean that regular saving and thrift is a positive state in itself, to which contractual forms of saving, including consumer credit, are perceived as contributing. The individual can combine this belief, of course, with the supposition that the goals attained by contractual saving would otherwise never be reached.

Personality Traits and Saving

This section will deal first with the limited number of studies of relationships between personality traits and saving behavior which we have found in reviewing the literature. Although the choice of personality traits in these studies does not appear to have been influenced by thinking along the lines of decision theory, some of the variables appearing in the studies can easily be placed within our general framework. As suggested in previous sections of this report, at least two of the *O* variables postulated in the decision process, namely, the values given to general goal states and the decision criteria applied by the individual in choice situations, can be regarded as relatively permanent personality traits which influence one or more aspects of individual consumption and saving. In a subsequent part of the section, we dwell upon the potential importance to economic research of a number of personality variables studied by psychologists.

Empirical Studies of the Relationship Between Personality and Saving

Elise Boulding has studied [23] the association between a bipolar personality trait which she calls "achievement orientation" and different kinds of consumer behavior. The measuring instrument applied by Boulding consisted of a battery of questions about the importance of various aspects of a job, and the individuals in the sample were characterized on the basis of responses to the questions as either "achievement-oriented," "security-oriented," or "unclassifiable."[42] Boulding points out that the relationship between these personality traits and the accumulation of liquid savings (additions to and withdrawals from bank deposits and security holdings were the dependent variables in the part of the study dealing with saving) is by no means theoretically given. It may be argued that security-oriented persons should save more than achievement-oriented, since saving provides security directly. It may, on the other hand, be maintained that the achievement-oriented individual is a more active person who makes use of his resources in a more effective manner and, therefore, not only buys more capital goods but also saves more.

[42] Further groupings of the interviewees on the basis of responses to other interview questions will not be discussed here.

The results were, however, fairly clear. The households of the interviewees were studied for a period of three years, and for each year the households were classified as savers, as negative savers, or as not belonging to either of these types. It was established for each year that more achievement-oriented households saved than did security-oriented households. The extent of negative saving was about the same for both achievement- and security-oriented groups. The differences in behavior between the two personality types were somewhat more pronounced for the upper-income bracket. See also Katona ([119], pp. 86-91) for a discussion of Boulding's results.

Kreinin found [144] that classifying individuals as "security-minded" or "accomplishment-minded" (using the same battery of questions as Boulding) helped to differentiate stock owners and nonstock owners, and owners with high and low amounts of stock. Even after removing the effect of certain socioeconomic variables, such as income, liquid assets, and education, people concerned with upward mobility turned out to be more frequent owners of stocks and owned more stocks than those who, as measured by the instrument used, considered steadiness and security the most important feature of the job.

Morgan et al. [188] (and Morgan [181]) have also attempted to measure the personality trait "need for achievement" although they do not regard it as the antithesis of "need for security." Morgan et al. used an index based on indirectly determined ambitions to attain occupational categories with various levels of social prestige, proposed by the psychologist John Atkinson, one of the formulators of the psychological theory of the achievement motive. Morgan reported [181] a pervading relationship for different types of subjects (retired people, wage earners, farmers, businessmen) between high need for achievement and high saving, measured as income of capital.

Claycamp reported [41] a lack of significant relationships between measures of the achievement variable and the proportion of total or discretionary saving which is held in variable-dollar assets.

J. S. Morris reported [191] the following study: one of four banks in an American town stressed powerfully in its advertising the protection and the security which the customers would receive in this old and established bank. Morris selected a random sample of male inhabitants of the town and measured these individuals with (1) a projective test for the achievement need, (2) the same battery of questions for the measurement of achievement- versus security-orientation used by Boulding, and (3) a scale for the propensity to take risks. The scores for the individuals who saved in the "secure" bank were compared with the scores of individuals saving elsewhere in town. Morris found that low scores on need for achievement

correlated positively with the disposition to save in the old, established bank and that the security-oriented were customers of this bank to a greater extent than were others. The scale for the propensity to take risks showed, however, no correlation with the choice of banks.

Morgan et al. attempted ([188], Ch. 30) to measure an individual trait which they called "feeling of ability to plan ahead." A noticeably high correlation between this trait and the extent of individual saving (as measured by the amount of saving) was found in every income bracket. It can also be mentioned in passing that Morgan et al. [188] reported a high correlation between scores on a planning index, constructed on the basis of both subjective and objective data, and achievement need. The researchers inferred that planning might be thought of as one of the mechanisms whereby achievement need is transformed into economic success. A similar association between planning and achievement need was also reported by Morgan and his coauthors in a later study ([189], p. 237).[43]

Claycamp reported [42] an interesting and methodologically advanced study of the traits which distinguish savers in commercial banks from savers in savings and loan associations. Using multiple discriminant analysis, he found that although a number of usually applied sociodemographic variables (with the exception of age) were unable to distinguish between the two types of savers, a number of personality variables appeared to differentiate the groups clearly. The personality variables were measured using a well-known personality test, the Edwards Personal Preference Schedule, and the variables which differentiated the groups were, in the first instance, need for affiliation, need for achievement, and heterosexual needs. As Claycamp pointed out, the association between the choice of saving institution and the personality traits may depend on a number of factors — for instance, that the "images" which the different banks have received or the advertising campaigns which have been conducted have appealed to different personality types.

Schmölders presented [241] a considerable body of data concerning the relationship between respondents' personality types and a number of observations about their economic behavior and outlooks. The behavior data included actual saving as well as the utilization of instalment pur-

[43] The measure of planning and time horizon used in this study was based on questions dealing with the amount of vacation planning, planning for retirement, and saving for children's college educations. The index of achievement need is, however, constructed differently from that of Morgan et al. [188]. It contains a greater number of items and includes plans for sending children to college, assessments of the most important job characteristics, the feeling of not being satisfied with one's own performance, the time devoted to courses, the desire to get better at sports or hobbies, income aspirations (including a measure of the degree of realism in the aspirations), and the degree of admiration for the initiative of those who try difficult things.

chasing; the outlooks assessed included attitudes toward saving and expectations for future income. Some of the methods used in the construction of the personality categories could perhaps be questioned and, because of both this and the extent of the material, we refer the reader directly to Schmölders's book for his results.

A factor analytic study of the correlation between personality and investment behavior has been reported by L. S. Skurnik [254].

Potential Importance of Personality Traits as Explanatory Variables

We have described the actual studies of relationships between personality traits and saving behavior that we have seen.[44] A number of the studies mentioned appear to be of a one-shot character, and the measurement instruments to be ad hoc constructions. In other cases, however, the measurement instruments have been taken or derived from modern personality theory.

It is conceivable that a longer list of psychological traits — and techniques for their measurement — worth exploring for explanatory power in connection with saving and other economic behavior could be borrowed from existing personality theory. The possible existence of a general trait of thriftiness or possessiveness (as opposed to lack of need for possessions and, possibly, generosity) has not attracted much interest in empirically oriented psychological research. It is thus very doubtful if it is meaningful to talk about thriftiness as a trait. In addition, we have, of course, the problem of whether a high degree of thriftiness would be related to high saving (the hoarding of money) or to high consumption (the hoarding of tangible goods). Other personality traits of potential relevance to studies of saving behavior have been studied more extensively. We are thinking of such traits as time perspective and time orientation, planning ability, the ability to defer gratification versus the need for the immediate satisfaction of wants, risk-taking propensity, and achievement and security needs. Our own opinion, certainly a very subjective and tentative one, is that various strands of research in these areas, if further developed, could turn out to provide consumer and saving psychology with useful explanatory variables.

The concept of *need for achievement* has been applied relatively frequently in studies of economic behavior, as shown by the studies mentioned in the first part of this section. It has been suggested that some of the consequences of a high need for achievement would be harder work, more realistic goal-setting, orientation toward the future, better planning, preferences for delayed gratification of wants, and so on, all of which might in turn have an effect on saving preferences and saving behavior.

[44] Some attempts to relate personality traits to working and "income-generating" behavior are dealt with in Chapter III, "Earning of Income as an *R* Variable."

It is difficult, however, to make any immediate deductions from the theory of achievement motivation in its present state as to *how* saving behavior would be influenced by these factors and in *what directions* (with the possible exception of the effects of the postulated association between achievement need and positive attitudes toward planning and ability to *plan,* an aspect of need for achievement which, however, is not stressed in the writings of achievement need theorists). The theory of need for achievement is mainly concerned with the propensity to strive for success in situations in which the individual is master of his own fate, that is, where his skill and the effort put into the task determine the benefits to him. In these situations, a person with a strong motive for achievement (and not so strong a need for avoiding failure) is drawn to the courses of action with an intermediate chance of success, that is, he prefers moderately risky behavior and avoids courses of action involving extreme risk-taking as well as actions leading to almost certain success. This has been confirmed in a number of studies in a laboratory setting (see J. W. Atkinson and N. T. Feather [6]). On the other hand, in situations in which chance rather than skill determines the outcome after the choice of a course of action has been made, achievement theorists such as D. C. McClelland [167] have predicted that high-need achievers would not like pure gambling and would choose the shortest odds available, not alternatives with moderate risk as in situations involving skill. The empirical results dealing with the relationship between need for achievement and risk preferences in chance situations appear to be somewhat contradictory (see Nathan Kogan and M. A. Wallach [138] and H. C. van der Meer [275]).

At this point we encounter one of the difficulties that are inherent in attempts to adapt achievement motivation theory to saving and economic behavior in general.[45] The problem is that we do not know much about the extent to which people see their future economic status as being in their own hands or in the hands of other powers, that is, whether providing for the future (with respect to financial matters) is perceived as a problem of skill or of chance. In addition, there are probably fairly clear individual differences in the extent to which individuals believe that they are active, causal agents in dealing with their environment or passive recipients of environmental effects. Research on "internal versus external control" (see, for example, Virginia C. Crandall, Walter Katkovsky, and V. J. Crandall

[45] Another problem is that measures of achievement need obtained by means of projective techniques (the original means of measurement) seem in no way to coincide with measures arrived at by using attitudinal or behavioral indexes of a less indirect nature (see Morgan [181] and Atkinson and Feather [6] for information about these discrepancies).

[46]; J. B. Rotter [234]; and the reviews by Kogan and Wallach [138] and H. M. Lefcourt [151]) seems to indicate that this is the case.[46]

Furthermore, it does not seem self-evident how preferences for various amounts of risk (the most investigated corollary of variations in need achievement) are related to saving behavior. What are to be defined as courses of economic action involving high risks and low risks respectively is probably a difficult task even for an economist. That all forms of saving could be said to constitute low-risk alternatives in comparison with all forms of consumption seems to be a most improbable stand for anyone to take. Perhaps economic experts would agree that failing to insure in some way against disasters definitely constitutes behavior involving high risk. To psychologists, however, even the labelling of this behavior as risky might be premature. From the point of view of the individual, the situation may look very different. He may have a time perspective much shorter than that of the theorists and thus disregard, or at least assign little importance to, those consequences of a particular act which could occur in the distant future. If he is an optimist, his estimates of the probabilities of events leading to unfavorable consequences could very well be quite different from those of the theorists. Planning might also be a nuisance in itself, that is, it might possess negative utility, and the knowledge and ability necessary for planning might also be nonexistent. To describe saving and consumption behavior in terms of risks involved is thus by no means a simple task.[47]

Risk-taking propensity might also turn out to be a complex phenomenon, as indicated by the study of Paul Slovic [255] and the same author's review of risk-taking studies [256]. Unlike Slovic, however, Kogan and Wallach have been of the opinion [137, 138] that there are particular kinds (subsets) of people who can be described as having a pervading penchant toward either risk or conservatism. An interesting observation in this connection is that in an index which Morgan et al. called [189] "caution and risk-avoidance," comprised of such indicators of a behavioral type as having car seatbelts fastened all or part of the time when driving, not trying new products when they first come on the market, getting vaccinated against polio, possessing hospital or medical insurance, using some method of limiting the number of or planning the spacing of children, and saving

[46] Cf. the variability of the answers to questions put by Morgan in some of his studies: "Some people say that people get ahead by their own hard work; others say that lucky breaks or help from other people are more important. What do you think about this?" [188]; and "How important do you think luck is for a person's financial success?" [189].

[47] As Morgan has pointed out [180], the very concept of security needs to be investigated broadly. "What needs for security do people see, and what sources of security exist aside from insurance (private and social) and savings? Are wealthy relatives, a working wife, a low level of contractual commitments, or a varied occupational experience substitutes for assets or insurance?" (p. 53).

behavior, almost *no* correlations were found to exist between the indicators. M. R. Greene was unable [82, 83] to find any correlation between a test of attitudes toward risk and insurance buying or attitudes toward insurance.

All this is not to say, of course, that preferences for various amounts of risk and the degree to which an individual feels a need for security do not influence decisions on matters concerning saving. Regardless of whether future research indicates that needs and attitudes in matters of risk and security can be thought of as a unidimensional phenomenon, or that a number of factors and traits are involved, it seems plausible to predict that saving behavior will show itself to be related to risk preferences and security needs. The point we are trying to make here, however, is that it is equally important to ascertain what research dealing with other personality variables such as time perspective and time orientation and various aspects of planning may contribute to studies of saving behavior.

Psychological research on individuals' time horizons and time orientations has not yet advanced very far. Various techniques have been proposed, however, for measuring the extent to which people live in the past, present, and future, and to assess how far ahead people have set their time horizons. Reviews have been given by Paul Fraisse [70], Robert Kastenbaum [111, 112], S. E. Shively [250], and Melvin Wallace and A. I. Rabin [277]. The concepts used in this research and the measurement techniques need refining, as has been shown by investigations by Laura K. Heimberg [94], P. S. Goodman [80], and Elise E. Lessing [152], among others, which found various measures of temporal orientation and horizons to be interrelated only to a very limited extent. It might turn out, for instance, that it is necessary to make a distinction between time orientation regarding personal and impersonal matters respectively (see Walter Firey [68] and Kastenbaum [112]). Also persons using a longer time perspective in everyday decisions, that is, taking into account more distant consequences than do others, perhaps do not apply a longer time perspective in decisions in which very long-term consequences are involved (see Kastenbaum [112], who has introduced the ideas of "longitudinal" and "situational" time directionality). However, we have here a field of study attracting increasing interest from psychologists and also from researchers interested in differences between cultures (see Florence R. Kluckhohn [135] and Kluckhohn and F. L. Strodtbeck [136]). Results of great interest to the study of economic behavior can probably be expected in the not too distant future.[48]

[48] The finding by K. W. Back and K. J. Gergen [7], that in the age bracket 18-25 years respondents with an "apocalyptic" time orientation (a term used by the investigators to denote the opinion that the life of a human being is too short to warrant an interest in a series of events) preferred a secure, even though low-paying, job and expected less income than persons with the opposite opinion (termed "serial" time orientation), hints at the possibility that interesting relationships could be found if research in the area were to be intensified.

A related field of research is the study of the extent to which individuals with different personalities or belonging to different groups choose to satisfy their wants immediately as opposed to postponing the satisfaction of their wants, when this postponement (at least in the eyes of an outside observer) would lead to preferable consequences and satisfactions. Louis Schneider and Sverre Lysgaard found [242] a social class difference in this respect; these authors discussed the phenomenon as the "deferred gratification pattern." Schneider's and Lysgaard's study was done within a sociological framework, as was the research by M. A. Straus [262]); subsequent studies by psychologists, however, have dealt with the same phenomenon. Examples of psychological studies are those by Murray Levine et al. [153], Walter Mischel [174]; and J. L. Singer, Harold Wilensky, and Vivian G. McCraven [253]. It is apparent that if there are generalized differences in time preferences in this respect — differences among individuals or among groups of individuals within the society — these differences may very well be related to many aspects of economic behavior, one of which would undoubtedly be saving. It is to be hoped that the applicability of research on temporal preferences to studies of economic behavior will be examined more closely.[49]

Planning has been the subject of little psychological research; neither planning ability nor attitudes toward planning, two not necessarily related aspects of planning, have received much attention. R. M. Berger, J. P. Guilford, and P. R. Christensen made a factor-analytic study [16] of planning abilities, and their investigation supported the hypothesis that a large number of primary intellectual abilities are involved in planning. Of the factors found in the study, four are new and seem to be unique to planning tests (the abilities of ordering, elaboration, perceptual foresight, and conceptual foresight). No economic decision-making is included in the study, however. Planning can possibly be regarded as the object of study also in some investigations of information-seeking in problem-solving situations.[50] For general treatments of information-seeking aspects of problem-solving, see, for example, D. E. Berlyne [17] and W. R. Reitman [229] (who has dealt especially with ill-defined problems); for the study of interindividual differences in the amount of information-seeking in

[49] In the study made by the Bureau of the Census and the National Bureau of Economic Research, mentioned in Chapter III, "How Salient Is Saving in Household Decision-Making?" the problem is touched upon by the inclusion of questions such as these: "Suppose that your family were to win a cash prize, and you had the choice of receiving either $1,000 right now, $100 dollars each month for the next 12 months, or $500 right now and $500 in 6 months; which would you prefer?"; "Would you rather have $1,000 now or $1,500 a year from now?" (F. T. Juster, personal communication).

[50] As problem-solving situations psychologists usually denote situations in which some choices of courses of action are regarded as being correct and other choices as being incorrect.

problem-solving situations, see W. L. Davis and E. J. Phares [52], J. T. Lanzetta [148], and Joan E. Sieber and Lanzetta [251].

The potential relevance of these investigations to the study of planning in connection with saving and consumption is at present somewhat indeterminate. In studies in which the amount of actual planning is ascertained, it is, of course, difficult to determine without detailed inquiry whether lack of planning is due to (1) low inclination to plan, not because planning is impossible, but because it is regarded as a disagreeable task, or (2) lack of ability to plan. Lack of ability to plan can arise, in turn, either because the individual does not possess the necessary intellectual ability (dealt with in the study of Berger et al. [16]) or because he does not have access to the pertinent data, perhaps because of inadequate service from information bodies. In future research on planning, in psychology and in studies of economic behavior, it appears necessary to deal more closely with the distinction between planning ability and planning inclination.

To some extent planning inclination might be related to the personality trait of impulsiveness, in contrast to deliberateness or cautiousness, if this trait is taken to refer to the time people reflect (or, generally, the amount of reflection) before making a decision. This trait has been the subject of some psychological research (E. S. Barratt [9]; Guilford [85]; Jerome Kagan [109]; Kagan et al. [110]; Samuel Messick and John R. Hills [168]; and D. C. Twain [274]) and it would be interesting to discover whether impulsiveness, as measured by the psychologist, is related to economic planning, to time perspective, and to other economic behavior.

Other personality traits of potential relevance to saving behavior would perhaps include readiness to change (Morgan et al. [189]) and the possibly related needs for exploration, novelty, and variability (Berlyne [18] and Norman Livson [157]). At least the choice among various forms of saving, and particularly the interest in *new* forms, could presumably be influenced by such a generalized preference for change and variation. Attempts to study innovation-mindedness in the field of consumer purchases have been made in a number of studies, for example, John Clemens [43], Mueller [198], and Bo Wärneryd [282]. It is probable that personality variables play two roles with respect to saving. Differences in saving behavior may arise as a direct consequence of the facts that people possess certain personality characteristics to different degrees and that culturally determined changes in personality occur over time. The other important function of personality may be to moderate the effects on behavior of various stimulus variables.[51] It would, therefore, be tempting to speculate

[51] See Tobin [270], Katona ([122], p. 215), and Chapter III of this study, "Changes over Time or Differences Among Individuals," for further discussion of the roles that personality traits may play in economic behavior.

further about the potential roles in research on saving of the personality variables dealt with in the foregoing paragraphs and other traits. Because of the preliminary nature of the strictly psychological research in these areas and the fact that there have been very few attempts so far to relate these variables to saving behavior and attitudes (apart from the studies referred to in the first paragraph of this section), we will not, however, go further into such a necessarily speculative discussion.

Future research on the importance of personality in economic behavior should probably proceed in several directions. It is necessary to explore in greater detail the planning and temporal aspects, the risk-taking aspects, and so forth, of saving and economic behavior per se (an area to which we have given attention in earlier chapters). Furthermore, the extent to which the degree of interindividual differences in planning, in the setting of time horizons, in preferences for risk-taking, and so on, is common to different sectors of real life behavior (economic, vocational, and political behavior, social participation) should be explored much more extensively. Morgan et al. [189] may be said to have initiated this type of work. Third, as work within personality psychology develops and as more advanced and, in particular, more reliable techniques for the study of the relevant traits appear, much more interesting and stable relationships will probably be found between these traits and economic behavior. It is hoped that it will be possible to interpret the relationships, at least to some extent, in causal terms after more extensive studies of the developmental aspects of the personality traits have been made. Finally, research directed toward the exploration of differences in the personality traits under discussion among cultures and different societal forms, and among different demographic and economic subgroups within these cultures will possibly throw some light upon the differences in economic behavior that we can observe among these various cultures and groups.

VI. THE STATE OF RESEARCH AND VIEWS ON ITS FUTURE DIRECTION

Trends and Lacunae in Current Research

Anyone wishing to initiate research dealing with the influence of psychological factors on saving will have many difficult problems and assessments. Some of the major difficulties are reviewed in this chapter.

For example, should a study compare the various behavior patterns of different individuals during a given time period, or should attention be focused instead on the changes in individual behavior over time? In Chapter III, "Changes Over Time or Differences Among Individuals," we maintained that both types of analysis may be of interest but that much suggests that the stress be laid upon the study of behavioral *changes.* One might interpret this assertion to mean that, in the first instance, attempts should be made to find and use as explanatory variables those organism variables which can also change quickly, for example, certain attitudes and expectations. In the same section of Chapter III, however, we have attempted to show that the choice of changes in behavior as an object of study by no means excludes the use of more fundamental and stable organism variables — personality structure, for example — in the model to be used for explaining behavior. We have also pointed out that the *panel study* technique, which should be applied more frequently, provides opportunities for relating behavioral changes to different types of stimuli and to organism variables, both transient and stable.

The question of whether interindividual or intraindividual differences in saving should be studied may in the future come to be regarded as illusory; the two approaches will come to be included in the same study.

It may be conjectured that agreement on what is meant by saving responses will become more difficult, that is, deciding which should be the dependent variables in the study of the influence of individual factors on saving. Different models and different explanatory variables will probably be necessary for different definitions of saving and for different constraints on the set of courses of action regarded as available to the individual. If this is the case, who is to be given the responsibility for defining and de-

scribing the courses of action — the economist, the psychologist, or the individual himself? These matters have been discussed to some extent in Chapter III, "Saving as the Result of Behavior," but it has, of course, been impossible to suggest a general solution to this problem. The discussion primarily shows how vital an operational definition of the concept "saving propensity" is in any study of individual saving whether it focuses on saving versus consumption or on choices among forms of saving.

The problem concerns what is to be denoted as saving and how the extent of saving is to be quantified (in absolute numbers, ratios, differences, and so on). The manner in which saving or variations in saving are quantified will certainly also be important for the construction of the explanatory psychological models and the array of variables included in them. It is, therefore, unfortunate that in the literature oriented toward the study of individual behavior very little systematic discussion has been devoted to possible measures or indexes of the extent of saving.

A feature common to most saving studies is that saving is regarded as the *result* of certain decisions and actions, or the lack of them, during a given period of time (see Chapter III, "Definitions of Saving"). This approach means, however, that decisions and actions such as decisions on, or the act of, depositing a sum of money in the bank, buying stocks or bonds, working out budgets, and so on, which often can be presumed to influence the extent of saving during a period, are regarded as being of limited interest and are seldom studied directly.[52] We have called investigations of this latter type studies of the microstructure of the *R* variables (see Chapter III, "Studies of the Microstructure of *R* Variables"). Conceivably, psychological studies of saving should aim to a greater extent than hitherto at studying the stimuli which produce concrete actions on the part of the individual, actions which have a direct or indirect bearing on the extent of saving. Studies could aim, for example, at investigating why an individual deposits money in a bank account on a given occasion and withdraws money from the account on some other occasion (see Mueller and Lean [203]). The model of how resources can be distributed between different consumption and saving activities (outlined in Chapter III, "How Salient Is Saving in Household Decision-Making?") which is an alternative

[52] Katona maintains [126], it is true, that what he calls "behavioral economics" is concerned primarily with "the *process* of decision-making regarding spending, saving, investing, borrowing, pricing, etc., and thus supplements the analysis of interrelationships among *results* of behavior (amount spent or saved, business investments, prices) which has been the traditional domain of economics." (p. 147, our italics). Our impression of saving research, however, is that even the work of researchers versed in the behavioral sciences may to a large extent be better described as studies of the relationships among *results* of different types of behavior, and between the results of a given action and some stimulus or organism variable, rather than as studies of the actual process of saving.

to the more traditional funnel model, without doubt leads to interest in studies of this type. Normally, however, the choice of how to define and quantify saving also includes a decision about the length of the *period of time* for which the extent of saving (and consumption) is to be estimated. The discussion in Chapter III, "Studies of the Microstructure of *R* Variables," shows that the criteria used by researchers to decide upon the length of time vary considerably and are often unclear. A more penetrating theoretical discussion, preferably supported by empirical study, of what is meant by an appropriate period of time is required.

The decision unit — the individual, the family, or the household — is briefly discussed in Chapter III, "The Decision Unit: Household or Individual." As stated there, this is probably one of the most important problems facing students of individual factors in saving. To what extent is the individual whose cognitions and motives are studied actually the agent who performs the actions we seek to predict or explain? When several persons in the family or the household have a common responsibility for the behavior in question (this is often said to be the case, at least in response to direct questions about the nature of the decision process within the family; see Morgan [179]), how can this be determined and to what extent can the decision process be investigated by means of interviews, observations, and so on? Doubtless considerable imperfections exist in this area in both research methodology and the current state of knowledge.

Another area where behavioral research on saving is underdeveloped is the question of which channels — mass media, opinion leaders, person-to-person contacts, and so forth — are most likely to convey persuasive and influential messages affecting saving behavior and propensity (see Chapter IV, "Channels for the Diffusion of Knowledge and Influence"). Which channels reach the individual with information about economic conditions and about currently available courses of action, and what information is conveyed by which channels? Very few studies on these subjects have been reported in the literature; considerable research is, in our opinion, required here. The study of the process of influencing opinions and habits, including consumer habits, has made considerable advances within other fields, and there appears to be little reason for our knowing so little about the channels by which information and influence in economic matters are spread and about the process of influence. The extent to which individuals actively *search* for information about available courses of action for saving and about the consequences of these courses of action is also little known. The study of information search processes in connection with saving must, therefore, also be regarded as an important research task closely akin to the other problem areas mentioned.

Saving Viewed as a Decision Process: Some Advantages and Limitations

Some of the many gaps in present knowledge of the influence of individual factors on saving which have been described in this review of the literature may be explained by the fact that apparently few researchers have employed a general model of the total saving process as a framework when choosing their research projects. The model derived from decision theory and the more general stimulus-organism-response model, which are presented in Chapter II, and which we have used as a framework for the review of the current state of knowledge, are intended to provide such a general outline of the saving process.

There are certain definite advantages to regarding consumption and saving as a decision process. The approach includes a list of the kinds of individual perceptions, cognitions, and values which may be expected to give rise to an action of one or another kind, and thus constitutes, if one so prefers, a checklist of the variables for which measuring instruments should be constructed and measurements performed when studying individual saving. The list of variables is dealt with in Chapter II, "Consumption and Saving as a Decision Process," and in Chart 1.

It should be possible to develop measurement techniques for all of the variables and relationships illustrated in the decision model. There are then two general approaches which could be used to investigate whether these variables (which we have called organism variables) have any predictive value with reference to actual saving and purchasing behavior. One approach involves comparing individuals who have demonstrably different scores for one or more organism variables with respect to saving behavior. The other approach involves comparing individuals with demonstrable differences in saving or consumption patterns with respect to one or more organism variables. Both approaches may provide equally valuable information about the extent of covariation of behavior and the state of the organism.

The decision model also permits a translation into the terms of the model of concepts such as attitudes and preferences, needs, motives, goals, and so on, which are often used to explain individual variations with respect to saving and consumption. In our opinion placing these terms within the framework of the decision model lends a certain consistency and uniformity to concepts which otherwise often remain ambiguous both in theory and in practice. Many of the studies of goals and motives for saving presented in our review (Chapter V) would, for example, in our opinion, definitely have given more meaningful and interesting results had their design been guided by a model such as the decision one. It is possible, and probably necessary, to formalize and structure the study and measurements of goals and motives considerably more strictly than has often been

the case in studies of saving behavior. A rapprochement of decision theory and some areas of personality theory (see Chapter V, "Personality Traits and Saving") will, it is hoped, lead to even better conceptualization and structuring of the goals and motives involved in saving behavior.

The inclusion of the decision model in a more comprehensive model of the stimulus-organism-response (*S-O-R*) type enables the researcher to devote attention also to those *situational* and *environmental* factors which might be expected to influence the extent and direction of saving (see Chapter II, "Inclusion of the Decision Process in a More Extensive Frame of Reference"). A large number of studies of such factors — income and changes in income, wealth, the social environment, general economic conditions and events, media for the diffusion of information and persuasion, and so on — have been reported in Chapter IV. The basic feature of the approach which we are advocating is that all of the various stimulus variables are regarded as influencing individual behavior *via the organism,* that is, by giving rise to changes in the organism variables relevant to decision-making. Other models conceived by psychologists often regard behavior as being controlled more directly by stimuli and situations (see Chapter II, "Consumption and Saving as a Decision Process"), and the economist's way of looking at saving and consumption is often reminiscent of these stimulus-response models. It may perhaps turn out that pure stimulus-response model (without intervening organism variables) are as applicable for predicting and explaining certain types of behavior whereas a more complicated model of the *S-O-R* type (with, for example, the variables in the decision model as intervening *O* variables) will have a greater predictive and explanatory value when dealing with other types of behavior. The current state of research makes it impossible to prophesy which aspects of behavior within the field of saving and consumption can best be explained by the one type of model or other.

Katona has often stated that much of economic behavior is habitual. We have to some extent criticized Katona's distinction between habitual behavior and genuine decisions (see Chapter II, "George Katona"), but it is, of course, true that the stimuli which indirectly influence individual behavior in a choice situation also include the courses of action which the individual has chosen (and observed the consequences of) in previous similar situations. In models of decision theory, including the model outlined in this report, the influence of feedback from previous situations on the individual's choice in the present situation is seldom the center of attention and is in some cases even completely ignored. It appears essential, however, that these feedback mechanisms be considered and included in models of behavior such as saving which recurs repeatedly in relatively constant situations (or, if one prefers, occurs continually). Cooperation

among researchers interested in decision theory and learning psychologists should enrich our knowledge of the mechanisms involved.

Importance and Future Course of Research on Personal Saving

Many researchers in different camps and in different countries share the opinion that personal saving will probably make up an increasing share of total capital formation. (See Richard Stone [261] for one of many predictions to this effect.) Knowledge of the factors which govern the extent and direction of this saving may, therefore, be expected to be of increasing practical importance. Such will in all probability also be the case for the factors dealt with in this study, that is, factors of a more or less "psychological" nature.

It has often been maintained, not least in Sweden, that an increased knowledge of these factors is necessary — see, for example, Bengt Metelius [169], Thore [269], Per Holmberg [102], and, most recently, Lars Dahlgren [49] — but little has in fact been done within the field (with the exception of research in the United States which, however, is heavily concentrated at one particular institution).[53]

This is, of course, partly because neither the authorities nor the saving institutions have been prepared to make any extensive efforts aimed at increasing our knowledge of the processes determining the choice between consumption and saving or among different forms of saving. A contributory explanation, however, may be that the research area, partly because it is underdeveloped both theoretically and empirically, has appeared incoherent and difficult to grasp for most behavioral scientists. This situation may well have limited active interest in research in the area.

The view and the model presented in this monograph may perhaps make a modest contribution to organizing and clarifying the many problems involved. It is, however, impossible to perform an all-encompassing investigation of the total problem complex on the basis of the model presented, or of any other model for that matter. Any conceivable empirical study can look into only certain parts of the model. In some places in the earlier sections of the study, as in this final chapter, we have suggested certain research projects within the extensive field of individual saving behavior which we regard as particularly important and/or neglected. Other researchers or commissioners of research may, of course, have different priorities. Bearing in mind the degree of complexity of the problems, we wish to warn against any great optimism with respect to the rate at which the increase in knowledge of the factors responsible for individual

[53] It is, however, apparent that market research commissioned by saving institutions is quickly developing, both internationally and in Sweden; see, for example, Lars Pichl [224] and Weiss [284].

saving will advance. This warning is justified, we think, even if extensive research projects are undertaken. It is, nevertheless, clear that considerably increased behavioral research within the field is inescapable if our understanding of the mechanisms which control saving behavior is to be greater than it is at present. There is simply no other way.

The methods whereby this research can be conducted are manifold. In conclusion, we should like to concur with Tobin and Dolbear [271] and plead in favor of, at least to some extent, replacing nationwide interview studies with representative samples with a kind of research which seems to be of greater importance at the present stage of knowledge. Studies which we feel should be given priority are those which permit detailed comparisons of different conceptualizations and measurement techniques and which aim primarily at the testing of hypotheses rather than at description. At an introductory stage, the requirement of large samples and the representativeness of those samples will not infrequently have to yield to the demands for accurate control and manipulation of other experimental conditions.

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