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ANTICIPATION AND REALIZATION: ATTITUDES AND BUYING PLANS IN THE FUTURE TIME ORIENTATION OF CONSUMER BEHAVIOR [1]

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This paper deals with the relation between behavioral anticipation and subsequent behavior. Fore more than twenty years G. Katona of the Survey Research Center at the University of Michigan has been using buying plans and attitudes toward situational contingencies to explain and predict fluctuations in consumer behavior and in the general business climate. Even though much research has been devoted to the topic, several basic questions have yet to be resolved. To conceptualize the problem of anticipation, we use J.R. Nuttin's relational theory of human motivation wherein behavioral anticipation is considered to be the cognitive elaboration of motivation on a representational level. Anticipations are made operational by self-rating attitude scales of the economic determinants (income, prices, market conditions, etc.) and by the self-estimate of the probability of buying plans for durables in the near future. The relation between anticipation and behavior is tested on the individual level (cross section analysis) and on the aggregate level (time series analysis). Previous studies have shown that attitudes are more significant than buying plans on the aggregate level, while the reverse is true on the individual level; Adams calls it the *time series – cross-section paradox*. In this study a significant relation was found between both attitudes and plans and buying behavior on the aggregate level (Fig. 2 and Tab. 2). On the individual level, attitudes and buying plans also have a strong relation to subsequent behavior (Tab. 4 and Tab. 6). The role of attitudes on the individual level is clarified by the introduction of a basic optimism-pessimism variable and a future time orientation variable which reduce interpersonal differences (Tab. 5). The quality of the buying plans on the individual level is determined by an intentionality variable (Tab. 8) and the subject's own estimate of the probability of their realization (Tab. 7). The analysis of attitudes and plans is useful for predicting buying behavior on both the individual and the aggregate levels. The explanatory power of anticipation is a strong argument for proving the existence of cognitive elaboration of human motivation.

[1] This article summarizes the main results of the unpublished doctoral dissertation of the author: *Anticipatie en Realisatie. Een onderzoek naar de betekenis van de toekomstgerichtheid in het consumentengedrag*. University of Leuven, 1973, promoted by Professors J. R. Nuttin and G. Vandendriessche. The research was carried out while the author was research assistant at the Centrum voor Economische Studieën, Catholic University of Leuven. The project was sponsored by the Belgische Dienst voor Opvoering van de Produktiviteit (Belgian Productivity Agency).

INTRODUCTION

This article contains the principal results of an interdisciplinary research project on the significance of attitudes and buying plans for the prediction of consumer buying behavior. The project was designed to analyse future time orientation in consumer behavior and to test hypotheses about the relation between anticipation variables – attitudes and plans – and the realization of these variables in subsequent behavior.

At the end of the 1940's, G. Katona and the research staff of the Survey Research Center of the Institute of Social Research of the University of Michigan began to investigate consumer attitudes in a continuous research program (Katona & Mueller, 1953). Measurements have been taken several times each year for over twenty years. Katona has reported what he considers to be definitive results verifying the predictive power of consumer attitudes (Katona, 1960, 1964, 1967). His use of attitudes and plans to predict buying behavior, however, has been contested (for example, Smithies Committee, 1965; Tobin, 1959). This study wants to clarify the controversy about the Katona approach and the anticipation-realization relationship.

In Katona's research and that of his opponents little attention has been given to the nature of attitudes and plans, nor to an adequate theory of the role of motivation in human behavior. To remedy this, this study starts from J.R. Nuttin's theory of future time orientation and cognitive elaboration of motivation in human behavior (Nuttin, 1964, 1966). Several hypotheses will be tested that specify the conditions and circumstances affecting the relation between anticipation and subsequent behavior on the individual and the aggregate level.

PROBLEM DESCRIPTION

Do people have behavioral anticipations in mind that can be measured and is it possible to use these anticipations to predict future behavior? That is the main question of this study.

BEHAVIORAL ANTICIPATIONS

The concepts of anticipation, expectation and attitude overlap in psychological literature and also have different connotations depending on the research tradition in which they are used (Bouwen, 1973, pp. 11-12). Anticipation is taken here to be the mental state of orientation toward future events and future behavior related to these events. Katona uses the terms "anticipation", "expectation" and "attitude" as interchangeably. Basic to Katona's use of anticipatory variables is his hypothesis that, in addition to purchasing power or *ability to buy*, the *willingness to buy* also has to be considered in order to explain consumer behavior (Katona, 1960, pp. 37-38). The behavioral

response is the result of a motivational process that activates and directs learned responses and which also stimulates problem solving behavior, depending on the complexity of the situation and the degree of cognitive development of the subject (Katona, 1951, chap. 4). Willingness to buy is the expression of the motivational process.

To the extent that a situation is experienced as new and to the extent that there is relative freedom to consume due to a discretionary income situation – i.e. more money is available than needed to satisfy vital needs – the consumer will take a problem solving attitude and reorganize his psychological field. This cognitive reorganization of the elements of the situation will be reflected in the anticipations expressed by the consumer. To predict consumer behavior, both the objective description of the situation (e.g. price and income) and the subjective reorganization (i.e. anticipation) have to be considered (Katona, 1960, p. 78).

These theoretical constructs have much in common with gestalt psychology and Lewinian motivation theory. The relational theory on human motivation devised by Nuttin offers a very satisfactory frame of reference within which to consider the *cognitive elaboration of human motivation* (1964). The state of motivation in a subject is characterized not only by observable executive behavior, but also by elaboration of plans and projects about future behavior: anticipation is a striking feature of human behavior. The subject tests, on the cognitive level, means and possibilities in function of the intended goal.

All kinds of human behavior – not just economic behavior – can be located on a continuum ranging from the completely automatic to autonomous and creative behavior responses. When a state of motivation occurs frequently and very concretely, automatic behavior responses are stimulated. When the motivational state is more complex, the subject constructs a new response, using learned behavior patterns. This process of constructing a behavioral response is begun by anticipation, i.e. a tentative exploration of future behavior and related circumstances. Expectations related to situational contingencies are formulated and plans and projects are conceived to establish means-ends relationships (Nuttin, 1961, p. 456, 1964). These expectations and plans are reflected in verbal behavior. The Katona approach is based on descriptions by the consumer of his future expectations and buying plans.

ANTICIPATION IN CONSUMER BEHAVIOR

"Expectations are subjective notions about things to come" (Katona, 1958), and can be called *ex ante*-variables because they precede criterion variables and can be measured before criterion variables are available.

Two categories of expectations can be distinguished: contingent and intentional (Leenknecht, 1964). Contingent expectations are subjective judgments of circumstances and situations over which the subject has no influence. These expectations can be called attitudes

toward the situation. Intentional expectations are intentions, projects and concrete plans about future buying behavior. Both categories can reflect tendency or willingness to buy. Because of the nature of the economic situation and the role of the consumer, it is reasonable to expect that the impact of anticipation in buying behavior will be most significant in the decisions to purchase expensive items (Deblaere & Bouwen, 1968).

Cognitive elaboration of human motivation will be expressed most clearly in plans to purchase household durables, automobiles, vacations, home furnishing and housing. These categories, and particularly automobiles, are very sensitive to short term fluctuations (Maynes, 1965, table 13). Using all information available to him and considering his motivational and economic situation, the consumer makes – in interaction with other consumers – a cognitive reorganization of his psychological field. Thus, he makes creative responses that cannot be fully explained by extrapolating the past evolution. Understanding consumer anticipations may be important in explaining the turning points in economic fluctuations. With these considerations in mind, Katona sets out to measure willingness to buy (Katona, 1960, pp. 37-38). Willingness to buy can be measured, first of all by using the consumer's contingent expectations or attitudes toward factors in his economic environment: the business situation, employment, income, prices, buying conditions and his evaluation of recent changes in these factors. Katona uses self-evaluating scales to measure these attitudes (Katona, 1960-70, appendices), e.g.:

"Now looking ahead – do you think that a year from now your people will be better off financially, or worse off, or just about the same as now?"

☐ Better ☐ Same ☐ Worse ☐ Uncertain

"Turning to business conditions in the country as a whole – do you think that during the next twelve months we'll have good times financially, or bad times or what?"

☐ Good times ☐ Good, with qualifications ☐ pro-con
☐ Bad, with qualifications ☐ Bad times ☐ Uncertain

About twenty of these attitude statements are administered to representative samples of consumers. On an empirical basis, Katona selects six of these items to construct a *consumer sentiment index* for each observation period to predict consumer expenditures in the near future. Data are collected at every four months.

The second operational form of the willingness to buy is the intention to buy or the buying plan. The concrete question to the respondent is: «Do you expect to buy a car during the next 6 (12, 24) months or so? (If "yes"): How much do you expect to pay for your car?".

The same question is asked for several categories of important expenditures. Buying plans are then correlated with subsequent buying behavior.

STATUS QUAESTIONIS: THE ANTICIPATION-BEHAVIOR RELATIONSHIP

The long-standing controversy between the Katona School and its opponents led by Juster and Ferber has been reviewed elsewhere (Deblaere & Bouwen, 1968; Maynes, 1967). The state of the question may be summarized as follows.

Two methodologies are used to test the relation between anticipation (i.e. expectation or attitude and buying plans) and realization (i.e. buying behavior): cross section analysis and time series analysis. In cross section analysis, attitude and plan measures are correlated with buying behavior measures on the level of the individual consumer. In time series analysis, attitude or plan indexes for the whole population at a given moment are correlated with aggregate consumption six months later. The Katona theory and also the human motivation theory assume a significant correlation for both attitudes and plans on both levels of analysis.

The results of Katona's research show correlations between plans and behavior on the individual level between .19 to .28 (Pearson simple correlation) depending on the items purchased (Mueller, 1960). Correlations between attitudes and behavior on the individual level range from .11 to .14. Later research failed to develop statistically significant correlations. On the aggregate level the influence of attitudes is clear. Buying plans can also explain a significant portion of the variation in aggregate purchasing behavior, but this influence is insignificant in combination with the attitudinal variables (Ferber, 1966; Katona, 1967). Ferber (1966, p. 21) concludes his review of the problem as follows: "Hence buying plans are more sensitive for discriminating probable purchasers from non-purchasers on a cross section basis, but attitudes are more likely to anticipate shifts in aggregate purchases over time". He goes on to say: "If one thing is clear about this subject it is that the recent work on attitudes and buying plans has produced a wide state of befuddlement".

The predictive power of attitudes in aggregate is rejected as an artifact by the opponents of Katona because attitudes fail to have a significant correlation with buying behavior on the individual level. They do not accept the argument that the influence of the attitudes on the individual level is masked by the influence of all other determinants of individual buying behavior, e.g., personal situation, personality characteristics, income, a.o. Specific hypotheses on these points will be tested in this study. It is precisely aggregate analysis which randomizes the influence of these variables, thereby showing the importance of attitudes on the aggregate level. Because this explanation is not accepted by most researchers, the controversy on the use of anticipatory variables is still alive. Adams (1965) calls this

problem "the time series-cross-section paradox" because of the predictive power of buying plans on the individual level and the predictive power of attitudes on the aggregate level.

Mueller (1963) and Katona (1967) give the complete results of the aggregate test of attitudes and plans with and without the income factor, in the following equations: for 22 surveys from 1952 to 1961 (Mueller, 1963):

$$D_{+1} = \underset{(.04)}{0.13\ Y_{-1}} + 3.74 \qquad \bar{R}^2 = 0.29 \qquad <1>$$

$$D_{+1} = \underset{(.11)}{0.25\ A} + 10.33 \qquad \bar{R}^2 = 0.16 \qquad <2>$$

$$D_{+1} = \underset{(.03)}{0.18\ Y_{-1}} + \underset{(.06)}{0.40\ A} - 48.00 \qquad \bar{R}^2 = 0.76 \qquad <3>$$

$$D_{+1} = \underset{(.03)}{0.12\ Y_{-1}} + \underset{(.04)}{0.12\ B} - 4.65 \qquad \bar{R}^2 = 0.50 \qquad <4>$$

$$D_{+1} = \underset{(.03)}{0.17\ Y} + \underset{(.08)}{0.34\ A} + \underset{(.03)}{0.04\ B} - 43.07 \qquad \bar{R}^2 = 0.75 \qquad <5>$$

D_{+1} = expenditures for durables in the 6 months following the survey
Y_{-1} = personal income in the 6 months preceding the survey
A = SRC-index of attitudes
B = SRC-index of buying plans.

For 40 observations taken between 1952 and 1965 (Katona, 1967):

$$D_{+1} = \underset{(.13)}{.74\ A} - 27.5 \qquad R^2 = .48 \qquad <6>$$

$$D_{+1} = \underset{(.01)}{.15\ Y_{-1}} + \underset{(.06)}{.47\ A} - 51.6 \qquad R^2 = 91 \qquad <7>$$

On the aggregate level consumer attitudes (A) do have considerable explanatory power when used alone (equations 2 and 6) or combined with income (equations 3 and 7) and with plans (equation 5). Buying plans are significant in combination with income (equation 4) but not significant when in combination with attitudes (equation 5).

In the present study, further evidence is assembled regarding the crucial relations between anticipatory variables and subsequent buying behavior for the Belgian population. It continues the work of the American researchers and it is also an attempt to resolve the so-called "time series cross section" paradox. Further, by introducing intervening variables in the anticipation-realization relationship, specific hypotheses are tested.

A PILOT STUDY

Before starting a nation-wide panel research, the feasibility of the project and some characteristics of the research variables were explored

in four medium-sized cities. In each, nearly 300 respondents were interviewed three times at four month intervals.

The main conclusions of this preliminary project are (Deblaere & Bouwen, 1968):

- The Belgian consumer is able and willing to express his attitude toward economic contingencies and can reliably project buying plans for the near future.
- Consumer attitudes have content validity, and characteristics of these attitudes demonstrate the reliability of the measurement.
- There is some evidence for predictive validity of consumer attitude on the aggregate level and for predictive validity of buying plans on the individual level.

HYPOTHESES

The present study is designed to retest the main hypotheses regarding the anticipation-buying behavior relationship. Also tested are hypotheses regarding intervening variables mediating the anticipation-behavior relationship.

Hypothesis 1: Consumer attitudes toward contingencies (economic situation, income, prices, employment, etc.) contribute significantly to the explanation of aggregate consumer behavior, even when socio-economic variables are taken into account.

Hypothesis 2: Buying plans do not have specific explanatory power on the aggregate level when attitudes are considered. They are, however, significant in combination with income.

To have a reliable aggregate test, at least 15 observations over a period of time are needed. This was impossible in the research project for practical reasons. Therefore, the results of the aggregate tests are tentative.

Hypothesis 3a: Attitudes toward contingencies are not related to individual buying behavior.

Mueller (1960) and Katona (1967) argue that this is due to individual differences in situational and personality characteristics. One way to reveal the attitude-behavior relationship on the individual level is to introduce a measurement of personality characteristics related to future time orientation. These personality characteristics function as mediator variables. The need for self-consistency gives rise to a tendency to search for correspondence between the self-image and the evaluation of contingencies. By this process attitudes toward future events can be influenced by personality variables. Two variables are important: the basic optimism or pessimism of the individual and the intensity of future time orientation. Optimism or pessimism refer to trust and the absence of trust that good things will happen (Nuttin, 1961, p. 148-157).

Hypothesis 3b: In groups that are homogeneous regarding optimism and pessimism there is a correlation between attitudes and behavior on the individual level.

Future time orientation is related to the extension of time perspective (Brim e.o., 1962). People with a clearly elaborated perspective of the future can be expected to be inclined to work with explicite expectations.

Hypothesis 3c: There is a relation between attitudes and behavior on the individual level for people with a high score on future time orientation.

Hypothesis 4a: Buying plans are strongly related to behavior on the individual level.

Different methods to measure buying plans were tried. According to motivation theory and to progressive cognitive elaboration of human needs, buying plans are not a dichotomous variable. A buying plan can grow from vagueness or low probability of implementation to concreteness and high probability. This subjective probability of actual implementation of a buying plan can be ranked by the subject on a probability scale, ranging from 0 to 100. In the social learning theory of Rotter (1960) and in several attitude theories (Rosenberg, Fishbein, Dulany) the probability of occurrence of the expected reinforcement is used to predict behavior. Therefore an hypothesis may be as follows.

Hypothesis 4b: The use of a subjective probability measure could increase the plan-behavior relationship.

Rotter's theory on "internal versus external control of reinforcement" suggests intentionality as the intervening variable (Rotter, 1966). Nuttin's motivation theory (1959) also refers to an intentionality variable. As subjects will differ in the tendency to make use of plans and projects, it seems reasonable to expect stable differences of intentionality.

Hypothesis 4c: Subjects with a high intentionality score will realize their plans to a greater extent than subjects with a low score.

These four hypotheses about the anticipation-realization relationship were tested in our study.

METHODOLOGY

During 1969 and 1970, national representative samples, ranging from 1.000 to 2.000 respondents per sample, were interviewed six times at four month intervals by means of a structured questionnaire. One sample was reinterviewed after 12 months, and another after four and again after eight months. The reinterview data were used in the cross section analysis.

In the aggregate analysis, the six observations of the extended project and the three observations of the pilot study were combined for time series analysis. For each spending unit of persons living together, the family head was questioned.

The samples were checked for representativeness by the region and by the most significant socio-economic variables (income, age, profes-

sion). Respondent withdrawal was higher in urban areas and among the self-employed. The rate of withdrawal was not sufficient to prevent an accurate interpretation of the results.

THE QUESTIONNAIRE

The questionnaires were virtually identical for the successive interviews and covered the following areas:

1. *Personal characteristics*: profession, age, income, education, family composition, social class, occupation.
2. *Attitudes*: the attitudinal objects were stated in a sentence that was used by the interviewees for self-evaluation by rating on one of the 3 or 5 response alternatives. These attitude statements were very similar to the Katona questionnaire, mentioned earlier. The attitudinal objects were: general business conditions, financial situation of the family, family income, prices, employment, general market conditions. For each of these objects, the present state was rated and the expectations for the coming 6 or 12 months and for 5 years.
3. *Behavior situation*: a short description was made of these situational factors which could motivate the consumer to buy: e.g. inventory of appliances, consumer habits, changes in family constellation, a.o.
4. *Buying plans* for travel, automobiles and durables were described. For each plan the probability of realization, the felt necessity to buy, the planning period, the amount of money available and other characteristics of the intended items were described.
5. *Plan realization*: in the reinterviews, the extent to which buying plans were realized was indicated.
6. *Special events*: characteristics related to the interview period were inventoried to explain attitude change.
7. *Optimism-pessimism*, *future time orientation*, *intentionality*: these variables were rated by several Likert-items on a 5 point scale. The items were selected on the basis of factor analysis and reliability tests (Bouwen, 1973, p. 125-146). Detailed characteristics of questionnaire and samples are not described here.

RESULTS

AGGREGATE ANALYSIS

Hypothesis 1 expects a clear positive relationship between attitudes and aggregate buying behavior. Buying plans would only be related to behavior when attitudes are not taken into account.

Four aggregate attitude-indexes were constructed, each index being the average of another combination of attitude questions. For the population as a whole, the percentage of optimistic answers to each attitude question were decreased by the percentage of pessimistic answers (% opt. – % pess. + 100 = index of consumer attitude).

The first index is the Katona index, the second index concerns six attitude questions with the highest factor loadings on different dimensions after factor analysis. The third index is primarily based on income expectation; and the fourth index concerns only expectation of the future prescinding evaluation of the present situation. Figure 1 shows

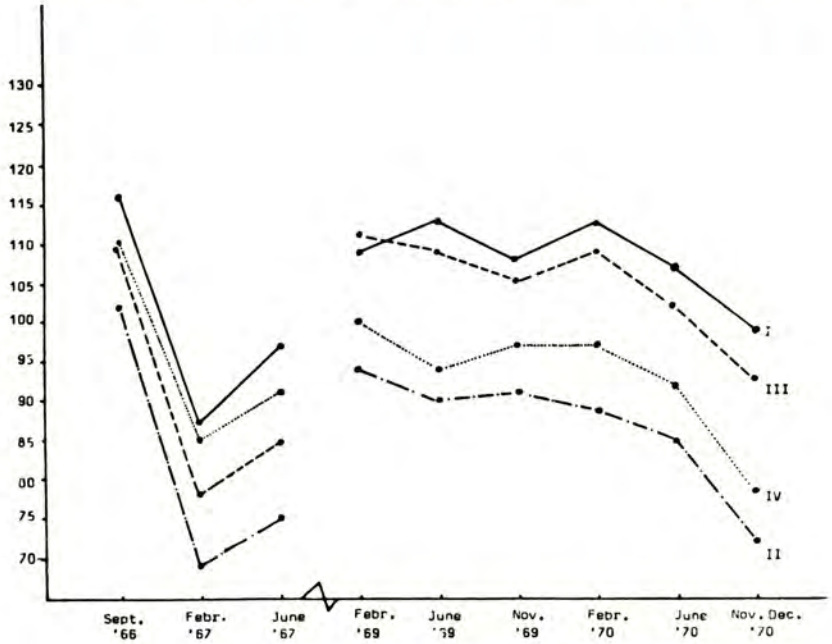

FIG. 1. VARIABILITY IN TIME OF FOUR ATTITUDE INDEXES

——————— (I) Katona index
—·—·—·— (II) index after factor analysis
— — — — (III) a priori index
..... (IV) index of expectations

the variability in time of these four indexes for nine observations. The regularity of the data is an indication of the reliability. Table 1 presents the variability in time of the number of those who plan to buy automobiles and durable goods. There is a clear variability in the time series of attitudes and buying plans. The evolution of both variables goes in the same direction.

Belgian consumers have a differentiated view of their economic and financial situation and are able to express themselves on several aspects of it by using self-rating scales. They also have plans for buying behavior and these plans can be revealed by the plan rating questions. Thus a clear argument is formed that cognitive elaborations of motivational states are used to direct behavior.

Several qualities of these plans – concreteness, time perspective, subjective necessity of realization, etc. – have been described in this study. Plans evolve: there is a growth from vagueness and indecision to concreteness and clear intentionality. In the discussion of the fourth hypothesis, we will present data regarding the rate of realization for

	Sept. '66	Febr. '67	June '67	Febr. '69	June '69	Nov. '69	Febr. '70	June '70	Nov. '70
plans to purchase automobiles	3.6	4.0	7.9	10.9	10.1	8.7	6.2	6.3	8.8
plans to purchase durables	37.4	35.6	35.2	45.3	44.3	34.8	36.3	32.5	24.5

TAB. 1. PERCENTAGES OF RESPONDENTS PLANNING TO BUY DURABLES AND AUTOMOBILES

different kinds of plans. Besides plans, also the attitudes toward contingencies in the environment reflect the cognitive elaboration of the behavioral situation; definite changes can be measured.

Two methods are used to analyze the relation between anticipation variables and behavior: a descriptive method using a graphic analysis and a quantitative method using a regression analysis. Figure 2 is a graphic representation of the evolution of the most important expenditure variables. The variability in time of the Katona attitude-index can be compared with the criterion variables. There is a clear evidence that the two declines in the Katona-index (February 1967 and during the second half of 1970) are followed by or are accompanied by a clear decline in all expenditure indexes.

The attitude index shows a sharp decline in February 1967. While expenditures (household durables, automobiles) are at a peak at that time, in the second and third quarters of 1967 there is a sharp decline. Therefore, it can be concluded that a decline in the attitude index is followed by a decline in expenditures for household durables and automobiles several months later.

During 1970 there is a progressive deterioration of the attitude climate in the third and the last quarters as is shown in Figure 1. All the expenditure variables rate lower than in the preceding year. While there seems to be a correlation between attitudes and buying behavior, it is difficult to identify the anticipatory character of attitudes. Therefore there should be a time lag between the decrease in the attitude-index and the decrease in expenditures. During 1970, attitudes and behavior seem to be synchronic. Attitude changes accompany the changes in buying behavior during this period.

It must be noted that 1969 and 1970 were rather turbulent for Belgium as far as expenditures for durable goods are concerned. In the middle of 1969, the introduction of a new tax system (value added taxes) was announced for January 1, 1970. This prospect caused a very strong anticipatory demand for automobiles and durable goods as can be seen in Figure 2. Because of this strong anticipatory demand as

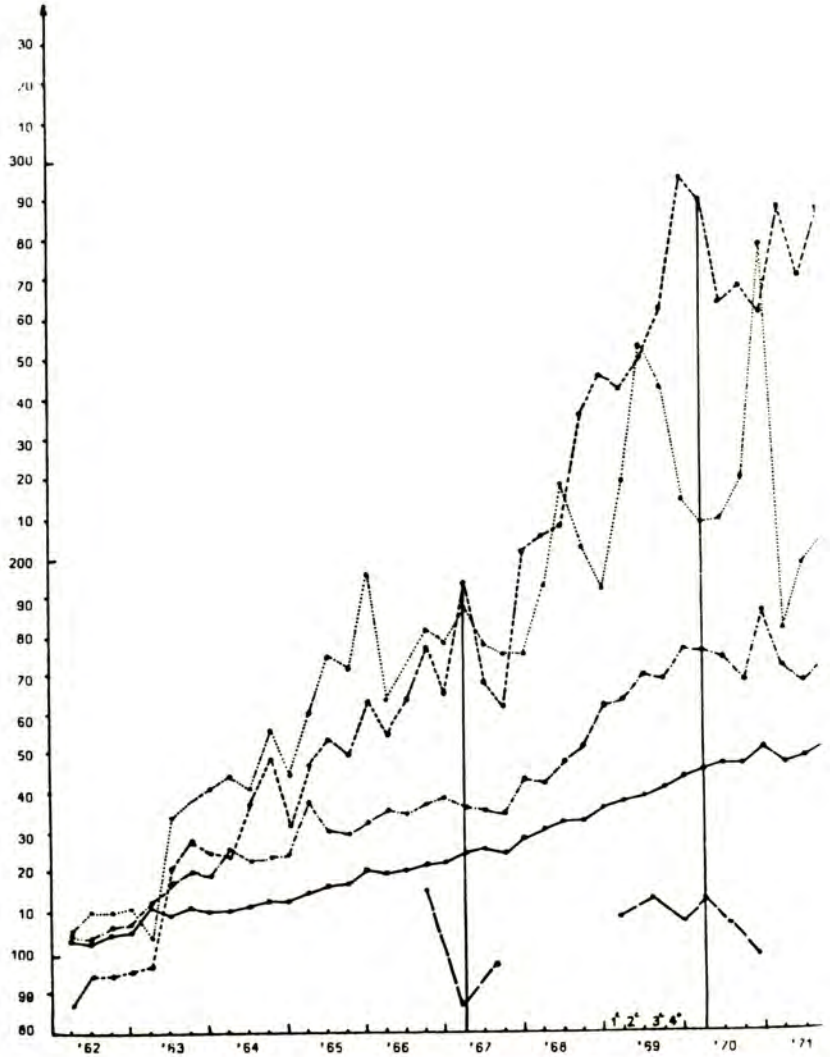

FIG. 2. GRAPHIC PRESENTATION OF EXPENDITURE INDEXES FOR TOTAL PRIVATE CONSUMPTION, DURABLES, ELECTRIC HOUSEHOLD APPLIANCES, AND AUTOMOBILES PER TRIMESTER IN THE PERIOD 1962-1971 (1961 = 100) (constant prices and with season adjustment) (source: Dulbea), COMPARED WITH THE EVOLUTION OF THE ATTITUDE INDEX ON THE AGGREGATE LEVEL

---------- electric household appliances
..... automobiles
—·—·—·— household durables
———— total private consumption
— — — — — Katona attitude-index

well as a deteriorating economic climate, however, the government decided in September 1969 to postpone the introduction of the value added tax. A sharp decrease in the demand for automobiles and durable goods resulted. As the system was introduced on 1 January 1971, the strong anticipatory demand reoccurred at the end of 1970. The sharp fluctuations in expenditures in 1969 and 1970 reflect the two periods of anticipatory buying. The evolution of the general business situation is, therefore, very difficult to isolate, and the testing of the hypotheses gives only tentative results for this period. In any event, one can see an overall decrease for several categories of expenditures for 1971. Economic reports mention the bad business conditions of 1971 and of the first half of 1972. Ignoring the anticipatory buying due to the introduction of the new tax system, one can say that the economic decline in 1971 and 1972 was anticipated by the attitude index decline in June 1970 and a further deterioration in November 1970. Because of these special circumstances the same restrictions must be made for the quantitative testing of the hypotheses. Another constraint for the quantitative test is that the time series are composed of only nine observations because of practical and financial reasons.

In testing hypothesis 1 and 2, several prediction models of regression equations were calculated. The dependent variable is always the buying behavior of the total population in the period following the measurement of attitudes or plans. A time lag of 6 months is introduced, following the theoretical assumptions about the nature of anticipatory variables.

The following general multiple regression was used :

$$C_{t+1} = \alpha + \beta_1 Y_{t-1} + \beta_2 A_t + \beta_3 P_t$$

C_{t+1} = consumption of automobiles or durables 6 months after the measurement of plans and attitudes
Y_{t-1} = disposable income, 6 months before the anticipation measurement
A_t = attitudinal index for period t
P_t = index of plans for period t

In Table 2 the relations between different combinations of the three independent variables of this model and several categories of expenditures are compared. Because of the low number of observations most regression-coefficients are not significant. Nevertheless, it is possible to test the hypotheses by inspecting the direction of the differences.

Used independently, the income variable has the most explaining power in the four categories of expenditure. Buying plans are more important than attitudes in explaining expenditures for automobiles, but attitudes are more important than buying plans for explaining aggregate expenditures for durables. The combination of income and attitude performs better in predicting expenditures for automobiles than the combination of income and plans. Buying behavior for

electric household appliances and other durables is better explained by the income-plans combination than by the income-attitudes combination. Even when three variables are used there is still a clear increase of the coefficients of determination. This increase is highest

dependant variables	coefficients of partial correlation: income	attitudes	plans	R^2	$R^2_{\bar{c}}$
C_{AUN}	$(.717)Y_1$*			.515	.446
		$(.494)A_{KAT}$		.244	.136
number of automobiles			$(.557)P_{AU}$	.310	.212
	$(.723)Y_1$*	$(.505)A_{KAT}$		.639	.518
	$(.569)Y_1$		$(.469)P_{AU}$	.534	.379
	$(.655)Y_1$	$(.453)A_{KAT}$	$(.288)P_{AU}$	.668	.469
C_{AU}	$(.558)Y_1$			.312	.213
		$(.496)A_{KAT}$		.246	.139
total expenditure for automobiles			$(.555)P_{AU}$	.303	.209
	$(.535)Y_1$	$(.467)A_{KAT}$		.462	.283
	$(.414)Y_1$		$(.409)P_{AU}$	.427	.236
	$(.421)Y_1$	$(.407)A_{KAT}$	$(.333)P_{AU}$	.522	.235
C_{EM}	(.873)**			.762	.728
		$(.486)A_{KAT}$		.236	.127
			$(.053)P_{DUR}$	.003	-.139
electric household appliances	$(.917)Y_1$**	$(.662)A_{KAT}$		.879	.839
	$(.984)Y_1$**		$(.924)P_{DUR}$**	.969	.958
	$(.984)Y_1$**	$(.493)A_{KAT}$	$(.897)P_{DUR}$**	.976	.962
C_{MDUR}	$(.890)Y_1$**			.793	.764
		$(.434)A_{KAT}$		.188	.072
all expenditures for durables			$(.045)P_{DUR}$	.002	-.140
	$(.908)Y_1$**	$(.557)A_{KAT}$		.857	.809
	$(.986)Y_1$**		$(.929)P_{DUR}$**	.972	.962
	$(.982)Y_1$**	$(.160)A_{KAT}$	$(.898)P_{DUR}$**	.972	.956

TAB. 2. COMPARISON OF DIFFERENT REGRESSION MODELS FOR THE PREDICTION OF SEVERAL CATEGORIES OF EXPENDITURE ON THE AGGREGATE LEVEL. The coefficient of determination, R^2, is corrected for degrees of freedom, $R^2_{\bar{c}} = 1 - (1 - R^2)\left(\frac{N-1}{N-m}\right)$. * Significant on the 5% level; ** significant on the 1% level.

for durables when plans are used as the third variable. In the explanation of the expenditures for automobiles, buying plans are less important than attitudes.

The first hypothesis can be retained : attitudes toward contingencies have a specific explanatory power for buying behavior on the aggregate level. Hypothesis 2 assumes no specific role for buying plans when attitudes are taken into account. This hypothesis must be rejected.

The role of buying plans in combination with attitudes is unclear for purchases of automobiles but is clearly specific for purchases of durables. The reader should remember that, because of the small number of observations, the quantitative tests in the aggregate analysis are not decisive.

In general both attitudes and buying plans have explanatory power on the aggregate level. But, then, why was the specific role of buying plans not demonstrated in other research? It is possible that buying plans are more apt to reflect specific situational changes of the consumer (e.g. changes in family income or market conditions), while attitudes are related to more permanent dispositions in the population as a whole. The introduction of the new tax system in Belgium during the research period created a strong anticipatory demand. This particular event is probably reflected in buying plans without influencing the general business climate.

ANALYSIS ON THE INDIVIDUAL LEVEL

Hypothesis 3 assumes no relation between attitudes and buying behavior on the individual level. To test this hypothesis indexes of attitudes and buying behavior were constructed and correlated. The results of most of the tests are decisive. Even on the individual level, there is a significant relation between attitudes and buying behavior. Table 3 shows the p-values of the chi-square tests.

buying behavior during 12 months for	attitudes measured in the beginning of the reference period		attitudes measured at the end of the reference period	
	Febr. 1969	June 1969	Febr. 1970	June 1970
automobiles	.139	.016	.190	.101
traveling	.000	.000	.000	.000
number of durables	.000	.000	.000	.000
amount of expenditures for durables	.000	.000	.000	.000

TAB. 3. OVERVIEW OF THE P-VALUES OF CHI-SQUARE TESTS ON THE RELATION BETWEEN ATTITUDE AND BUYING BEHAVIOR ON THE INDIVIDUAL LEVEL

Both the attitudes at the beginning and at the end of the 12-month reference period correlate significantly with the buying behavior during these months. One can therefore ask if attitudes have an anticipatory value or if they are synchronic with buying behavior. An analysis of of attitude changes (Table 4) gives interesting information on this point. There are very strong differences between the o-o groups and the p-p groups. The p → o progression results in more buying than does o → p. Attitudes at the beginning of the reference period are most important for traveling, which is characterized by specific planning

buying behavior during period		direction of attitude changes				tot.
		P → P	P → O	O → P	O → O	
June '69-Nov. '69	autom.	8.8	7.1	6.1	10.5	8.6
(4 months)	durables	18.2	25.7	24.2	37.2	26.7
	N =	(170)	(85)	(99)	(172)	(526)
Nov. '69-June '70	autom.	13.8	18.2	15.6	17.4	16.0
(8 months)	durables	22.1	46.6	35.4	50.3	37.2
	N =	(181)	(88)	(96)	(161)	(526)
Febr. '69-Febr. '70	autom.	12.8	16.8	19.8	19.5	16.9
(12 months)	durables	34.2	45.4	41.4	58.9	45.8
	travel.	23.6	30.1	35.8	44.1	33.7
	N =	(313)	(196)	(162)	(338)	(1009)
June '69-June '70	autom.	10.1	14.2	13.7	17.7	13.9
(12 months)	durables	27.1	45.3	37.9	54.4	40.9
	travel.	19.1	26.3	32.2	34.9	28.3
	N =	(365)	(190)	(248)	(372)	(1175)

TAB. 4. PERCENTAGES OF BUYERS IN DIFFERENT GROUPS OF ATTITUDE CHANGE (O : optimistic, P : pessimistic)

attitudes	unfavourable			medium			favourable			tot.
pess-opt	0-31p	32-37	38-54	0-31	32-37	38-54	0-31	32-37	38-54	
N	(165)	(91)	(66)	(154)	(134)	(166)	(109)	(115)	(175)	(1175)
buying autom.	7.3	8.8	22.7	5.8	13.4	19.3	12.8	15.6	21.7	14.0
dur.	21.5	41.7	39.7	26.6	32.1	39.1	49.5	55.7	56.6	40.9
trav.	15.1	27.5	27.3	19.3	25.4	39.8	22.9	26.1	48.6	28.3

attitudes future time orientation	unfavourable			medium			favourable			tot.
	0-8p	9-11	12-15	0-8	9-11	12-15	0-8	9-11	12-15	
N	(129)	(102)	(91)	(179)	(147)	(128)	(135)	(129)	(135)	(1175)
buying autom.	8.5	9.8	15.4	10.1	14.3	15.6	11.1	19.4	22.4	14.0
dur.	30.2	38.2	40.7	32.9	30.6	35.1	43.7	55.0	64.4	40.9
trav.	17.8	22.5	25.3	17.3	28.6	39.1	22.9	33.3	48.1	28.3

TAB. 5. PERCENTAGES OF BUYERS IN DIFFERENT ATTITUDE GROUPS, SPLIT UP IN DIFFERENT BASIC ATTITUDE GROUPS (basic optimism-pessimism, future time orientation)

behavior. Hypothesis 3a has to be rejected. There is a relation between attitudes and buying behavior on the individual level although it is very complex.

To control the variability of attitudes for interpersonal differences, a basic optimism-pessimism variable and a future time orientation variable are introduced (hypotheses 3b and 3c). Within each attitude group there are sharp differences among the different basic optimism-pessimism groups (Table 5). This is most explicit for automobiles and traveling, but there is also a clear differentation regarding durables. The future time orientation variable is also able to differentiate different categories of expenditures within homogeneous attitude groups. One can conclude that a significant part of the interindividual differences in attitude is related to more basic attitudes in consumers: i.e. taking an optimistic or pessimistic view of things to come and elaborating the future as something already present. Future time orientation and optimism-pessimism are useful variables for further research.

Hypothesis 4a concerns the significance of the intention variable on the individual level. The differences between columns (3) and (4) in Table 6 illustrate the relevance of buying plans in explaining buying behavior. Although there is a great difference between planners and non-planners in buying behavior (especially automobiles and traveling, and to some extent for durables), there is still a large proportion of non-planned purchases (column 5). For a 4-month period the difference is also very large for durables. Traveling and automobiles seem to be associated with a longer planning period than durables. Column (4) in Table 6 shows that more than half of the planners do not implement their intentions. It ought to be possible to differentiate the plans for their probability of realization. Hypothesis 4b is illustrated in Table 7. The various probability categories used by the respondents to qualify their intentions are listed on the top of Table 7. In general, there is a clear difference between the realization of plans in the 10/20/30 categories and in the 99 category. The 0/1 category was considered equivalent to no plans at all and was not included in the comparison for testing hypothesis 4b. There is a continuous increase in the percentages of realization from the left to right. For automobiles, 70% of the plans for the 99 category were realized. Consumers can describe quite well the nature of their plans, and they are aware of the impact of plans on the realization. After 4 months there is a sharp differentiation for the 99 category. After 8 months there is an increase for the middle categories (40 to 90), and after 12 months the lower categories (10 to 30) are also increased. It seems that a plan goes through different stages of evolution, depending on the time perspective of its realization. There is an evolution from vagueness and low probability to concreteness and high probability. This is a very clear illustration of cognitive elaboration of human motivation in the conception of plans or intentions. Therefore probability of realization is a valid operationalization of buying plans.

Another attempt to differentiate plans for probability of realization is the introduction of the personality variable: intentionality. This variable is measured by a 5-item Likert-type attitude scale which was

		% of planners (1)	% of buyers (2)	% planners buying (3)	%% non-planners buying (4)	% planned purchases (5)	N (6)
4 months	June '69-Nov. '69						
	automobiles	9.6	8.8	31.3	6.4	34.2	836
		(80)*	(73)	(25)	(48)	(25)	
	durables	45.6	28.3	41.9	16.9	67.5	836
		(381)	(237)	(160)	(77)	(160)	
8 months	Nov. '69-June '70						
	automobiles	8.4	16.0	45.5	13.3	23.8	526
		(44)	(84)	(20)	(64)	(20)	
	durables	32.3	37.3	52.9	29.8	45.9	526
		(170)	(196)	(90)	(106)	(90)	
12 months	Febr. '69-Febr. '70						
	automobiles	10.0	17.0	46.6	13.7	27.5	1009
		(101)	(171)	(47)	(124)	(47)	
	durables	44.9	45.7	57.6	36.1	56.5	1009
		(453)	(462)	(261)	(201)	(261)	
	traveling	41.3	33.7	64.3	12.2	78.8	1009
		(417)	(340)	(268)	(72)	(268)	
12 months	June '69-June '70						
	automobiles	9.2	14.0	40.8	11.3	26.8	1175
		(108)	(164)	(44)	(120)	(44)	
	durables	43.3	40.9	54.0	30.9	57.2	1175
		(509)	(481)	(275)	(206)	(275)	
	traveling	27.7	28.3	69.1	12.7	67.8	1175
		(326)	(332)	(225)	(107)	(225)	

TAB. 6. REALIZATION OF BUYING PLANS; PLANNED AND NON-PLANNED PURCHASES AFTER 4, 8 AND 12 MONTHS. * Number of observations.

selected after factor analysis (Bouwen, 1973, p. 134). Intentionality is taken to mean the consciousness of future behavior and the use of plans to structure it. People with a high intentionality score are expected to have a higher rate of realization of plans than those with a low score. Table 8 shows that this is true for all categories of expenditures, for all time periods, and for both planners and non-planners. The differences are most explicit for automobiles after a period of

4 months. Therefore, people who live conscious in the future and make use of plans to structure that future, realize their plans to a greater

		probabilities					tot.	N
		0/1	10/20/30	40/50/60	70/80/90	99		
after 4 months	June '69-Nov. '69							
	automobiles	6.7	17.2	18.2	25.0	40.8	8.8	836
		(49)*	(5)	(4)	(5)	(11)	(73)	
	durables	18.3	39.6	50.8	35.6	60.2	28.3	836
		(101)	(21)	(33)	(26)	(56)	(237)	
after 8 months	Nov. '69-June '70							
	automobiles	13.0	18.8	42.9	35.3	68.8	16.0	526
		(61)	(3)	(3)	(6)	(11)	(84)	
	durables	30.3	52.4	53.8	64.0	54.1	37.3	526
		(119)	(11)	(14)	(32)	(20)	(196)	
after 12 months	Febr. '69-Febr. '70							
	automobiles	12.2	35.0	47.3	47.9	69.6	17.0	1009
		(105)	(22)	(17)	(11)	(16)	(171)	
	durables	35.6	63.4	61.3	55.3	62.7	45.7	1009
		(213)	(33)	(65)	(62)	(89)	(462)	
	traveling	11.4	31.3	31.7	68.3	78.1	33.7	1009
		(65)	(20)	(19)	(58)	(178)	(340)	
after 12 months	June '69-Febr. '70							
	automobiles	11.1	21.9	38.3	33.4	52.7	14.0	1175
		(116)	(7)	(13)	(8)	(20)	(164)	
	durables	31.8	45.5	67.3	69.8	55.5	40.9	1175
		(254)	(31)	(68)	(58)	(70)	(481)	
	traveling	12.0	38.9	32.5	51.9	81.3	28.3	1175
		(99)	(14)	(13)	(28)	(178)	(332)	

TAB. 7. REALIZATION OF PLANS FOR DIFFERENT PROBABILITIES AFTER 4, 8 OR 12 MONTHS.
* Number of observations.

extent than people with a low degree of intentionality. The measurement of intentionality seems to be a useful indicator for the qualification of plans for future behavior.

CONCLUSION

Attitudes toward contingencies in the situation and plans to buy automobiles or durable goods in the near future are clearly and positively

related to buying behavior a few months later. Our investigation illustrates the significance of future time orientation and cognitive elaboration of human motivation by relating them to subsequent behavior. The results are positive and decisive.

The predictive power of attitudes and plans is of practical interest for economists. For psychologists these results form an argument for the existence of cognitive elaboration in motivational process of human

intentionality	no plans			have plans to buy			total
	0-15 p	16-18 p	19-25 p	0-15 p	16-18 p	19-25 p	
June 1969 – June 1970 (N = 1175)							
buying automobiles	6.3	13.7	15.2	37.9	36.6	47.4	14.0
N	(416)	(342)	(309)	(29)	(41)	(38)	(1175)
buying durables	21.9	29.5	48.8	44.4	53.2	62.8	40.9
N	(292)	(210)	(164)	(153)	(173)	(183)	(1175)
buying traveling	10.4	11.6	17.5	59.6	69.2	75.4	28.3
N	(356)	(276)	(217)	(89)	(107)	(130)	(1175)
June 1969 – Nov. 1969 (N = 526)							
buying automobiles	6.7	7.6	5.7	12.5	31.3	37.5	8.6
N	(193)	(144)	(141)	(16)	(16)	(16)	(526)
buying durables	11.4	17.1	25.7	32.1	39.7	43.4	26.2
N	(131)	(82)	(74)	(78)	(78)	(83)	(526)
Nov. 1969 – June 1970 (N = 526)							
buying automobiles	7.2	17.3	17.6	35.7	53.3	46.7	16.0
N	(195)	(145)	(142)	(14)	(15)	(15)	(526)
buying durables	21.9	30.3	43.0	46.7	49.2	60.9	27.2
N	(164)	(99)	(93)	(45)	(61)	(64)	(526)

TAB. 8. PERCENTAGES OF BUYERS FOR GROUPS WITH DIFFERENT SCORES ON INTENTIONALITY, AFTER REFERENCE PERIODS OF 4, 8 AND 12 MONTHS

behavior. The time series/cross section paradox (Adams 1965), regarding the significance of attitudes on aggregate level and buying plans on the individual level is resolved in the direction suggested by Adams. But buying plans have also specific explanatory power on the aggregate level. While the expected tax raise during the observation period may have created a turbulence in anticipation and thereby overemphasized the importance of buying plans, this event indicates the possible influence of the buying plans. On the individual level, attitudes also have a specific explanatory role in this study and attitude changes on the individual level do influence buying behavior.

Measurement of basic optimism-pessimism in the consumer can make the role of the attitudes more clear. The introduction of a general

future time orientation measure can further differentiate the attitude-behavior relation. A subjective estimation of the probability of realization is a very significant operationalization for buying plans. The quality of buying plans can be differentiated by using a general intentionality variable.

The general conclusion of this study is that there is a significant relation between attitude and buying plans on the one hand, and behavior on the other. The use of the future time orientation variable, the optimism-pessimism and the intentionality variable can isolate even more clearly the role of anticipation in human behavior.

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