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A NOTE ON COST IN ECONOMIC PSYCHOLOGY

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Cost and value are central in economic explanations of behavior. Three general dimensions in cost can be distinguished: outlay versus opportunity, private versus social, and objective versus subjective. On the basis of these dimensions, a number of conceptions of costs are described. Non-monetary from monetary costs are distinguished. It is argued that social psychology, in particular attitude theory, has largely neglected cost, and that much can be gained from including the concept into social psychological theories of behavior. Implications of distinguishing different cost conceptions and types for research on social behavior are formulated.

Introduction

Psychological economics (Katona 1980) or economic psychology studies '... the behavior of consumers/citizens that involves economic decisions, and the determinants and consequences of economic decisions' (Van Raaij 1981: 2). Economic decisions are defined broadly to include money, time, and effort to obtain products, services, work, leisure, the choice between product alternatives, spending versus saving decisions. Economic psychology is not merely another form of applied psychology. Since '... in fact, all decisions that involve a choice or trade-off of some alternative or an investment that will bring future profits or benefits may be called an economic decision' (Van Raaij 1981: 2.). In economic psychology, economic behavior is analyzed using equipment developed in economics and psychology, while many more decisions than lay people would think of are governed by economic considerations (Lea et al. 1987).

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Here, a central issue in economic psychology is briefly introduced, cost and the nature of cost. Cost is a central topic in economic reasoning. Accounting theory was developed to 'account' for it. In mainstream psychology only occasional attention has been given to the costs associated with behavior. Recently, Meyer (1982) argued that social psychological theories of attitudes have generally placed a strong emphasis on the benefits of behavior, without paying much attention to the costs people have to make in order (to be able) to behave. This statement may apply to social psychological theory more in general.

Insight in the nature of costs, in the categories of costs and in the location of costs may help in building better models of human behavior. Insight in the way economics has been dealing with the nature of cost may help to show that economics and psychology are dealing with a common set of questions. It is for these reasons that costs will be focused upon here. Cost is so intertwined with the domain of both psychology and economics, i.e., decision making and behavior, that it may serve as a starting point for further future collaboration of the two disciplines.

First, the relationship between cost and value will be explored. Next, the way cost is treated in social exchange theory and in attitude-behavior models is discussed.

Cost and value

The theory of costs is not one of those parts of economic analysis that has been neglected. It has always occupied a more or less central position, and it has been the subject of a formidable body of work.

Different conceptions of what a cost exactly is, i.e., what constitutes a cost, have appeared and disappeared in economics. Many of the differences in conception depend essentially, as Robbins (1973) states, on differences of objects and assumptions. To present a definition of cost that does not violate any of the assumptions underlying the different conceptions of the nature of cost is difficult. Buchanan (1969) offers a general definition explaining that cost refers to *a loss of value*. He (Buchanan 1969: 7) argues that the elemental meaning of the word 'cost' is that of pain or sacrifice. Asking a person how much a certain behavior did actually cost, is analogous to asking the person how much s/he had to sacrifice, how much pain s/he had to bear.

Three general dimensions in cost conceptions can be distinguished. The dimensions refer to:

- (a) what kind of general value is lost,
- (b) whose value is lost,
- (c) how the value loss is determined.

Outlay cost and opportunity cost

There are two ideas of the 'real' or 'true' nature of cost and value, i.e., of what kind of general value is lost.

The central element in outlay cost is the so-called labor-cost doctrine of value, that focuses on the sacrifice of giving up scarce resources in order to acquire a commodity. The cost of a commodity is defined as the labor needed to acquire the commodity (Smith [1776] 1983). The required labor may involve pain, '... something that can within limits be measured by sweat, muscle fatigue and tears' (Buchanan, 1969: 7). So, cost is associated with the outlays for a commodity, and cost is called pain cost, real cost, out-of-pocket cost or outlay cost (see, e.g., Buchanan 1969; Thaler 1980). The neutral term outlay cost will be used in the sequel.

The central element in opportunity cost is the choice-cost doctrine of value, that focuses on the pain one has to bear when choosing between mutually exclusive alternatives. Smith ([1776] 1983: ch. 6) already employed the choice-cost doctrine when he stated: '... if among a nation of hunters, for example, it costs twice the labour to kill a beaver which it does to kill a deer, one beaver should naturally exchange for, or be worth, two deer'. In this example, the 'real' cost is no longer defined in terms of the amount of labor. Cost is defined in units of another commodity in the market place. So, 'If the choice lies between the production or purchase of two commodities, the value of one is measured by the sacrifice of going without the other' (Davenport 1894: 567–568). This can simply be reformulated as '... the cost of beaver is deer and the cost of deer is beaver' (Knight 1928: 359).

Cost in this conception is called opportunity cost, alternative-product cost or alternativity cost (e.g. Stigler 1966). Opportunity cost is not an attribute of a commodity but an attribute of the choice between alternatives. It is defined as '... the value of the best alternative necessarily forsaken' (Alchian 1969).

Private cost and social cost

A second relevant distinction in cost conceptions concerns the bearer of the costs. Private cost (sometimes called commercial cost) is the cost borne by the decision maker, i.e., by the unit that chooses between alternatives. Social cost is the cost borne by society at large (see, e. g. Klein 1977). An analogous distinction in benefits can be made.

The difference between private and social cost are so-called 'spillover' or external effects. Private cost equals social cost if all positive and negative consequences of a choice between alternatives are borne by the decision-making unit. This would be the case if (a) the choice had consequences for the decision-making unit only, or (b) the decision-making unit received a full compensation for the positive or favorable spillover effects, and if the decision-making unit would fully compensate society for the negative or unfavorable spillover effects. In option (a) all effects are internal, while in option (b) the external effects of a choice are internalized, i.e. 'priced' for the decision-making unit.

Unfavorable spillover effects arise when the net social cost (social cost minus social benefit) exceeds the net private cost. Mishan (1970) argues that such a situation arises in the case of the automobile. He conjectures that by far the greater part of its cost is borne by the public at large and not by the owner (driver). The public at large is confronted with motor noise, exhaust gases, accident risks, less space and so on. The owner (driver) does not fully compensate the public at large for these costs, so, his/her private cost is lower than the social cost.

Favorable spillover effects arise when the net private cost exceeds the net social cost. This is the case when a certain decision has benefits for the public at large exceeding the costs for the public at large, next to the benefits to the decision making unit. E.g., wood growing for the furniture industry may have a positive effect on the air quality. If this positive, non-marketed, effect exceeds the social costs (resource depletion, noise and so on), the net private cost of wood growing exceeds the social cost.

Objective cost and subjective cost

In the objective cost conception (Buchanan 1969: 47), cost is extra- or interindividual. It can be measured objectively by an outside ob-

server, or consensus among a group of outside observers about the cost can be reached.

In the subjective cost conception, cost is an intra-individual quality. It is associated with the experienced value loss by the decision-making unit, and is viewed as the result of a more or less complex process in which a decision maker transforms expected or experienced attributes of a commodity or choice situation into subjective evaluations. Evaluations of a certain commodity or choice situation may differ between individuals due to differences in the valuation process, and thus can not be determined extra- or interindividually. In this view costs are always subjective cost.

The difference between objective and subjective cost is a matter of conceptualization, not of (unit of) measurement. Objective cost is measured in some common agreed unit, e.g., money, time or, if appropriate, beaver. Subjective cost can be converted into the same units. For instance, a person can be asked to attach a money price to the annoyance that is caused by the heavy trucks that pass his house all day long (a form of 'shadow pricing'). Then, money is used as a convenient measuring rod to assess the value of a subjective experience. However, the extent of value loss is still treated as subjective, i.e., intra-individual.

General conceptions of cost

Combining the three dimensions, eight specific cost conceptions could be construed, e.g., objective private outlay cost, and subjective social opportunity cost. In practice, the social cost conception is only applied in formal cost-benefit analyses concerned with the welfare of society at large (Mishan 1982), usually as objective opportunity cost. When decisions of individuals or organizations are concerned a private cost conception is most relevant. The four general private cost conceptions are introduced.

Objective outlay cost is a central element in the classical and neoclassical schools of financial accounting (hence the term 'accountant cost' Thirlby 1946), where objective past outlays are used as the appropriate basis to value commodities (Belkaoui 1981: 138). Commod-

ities are valued at their market price at the date of acquisition and are shown in the financial statements at that value or an amortized portion of it. Objective outlay cost is sometimes called historical cost, or sunk cost, to stress that it refers to past outlays. Valuation on the basis of historical cost may produce incorrect figures of the present value of commodities if value changes over time are ignored. For example, the present value of Manhattan Island is probably somewhat higher than the \$24 that the Dutch paid for it to the members of a native tribe some centuries ago (see, e.g., Stigler (1966: 104) for this example). At the Erasmus University Library, the value of a book is determined on the basis of past financial outlays. The fine when not returning a book equals the price the book was originally bought for.

Subjective outlay cost refers to the experienced and/or expected loss of value when giving up scarce resources to acquire a commodity. In this conception, cost is sometimes called choice-influenced cost or 'ex post' cost, to distinguish it from opportunity cost that is viewed as choice-influencing or 'ex ante' cost (Buchanan 1969). Decisions have a number of consequences. After a commitment to an action, the individual (and sometimes others as well) bears the consequences. Although the person may not regret the decision, the 'pain' or 'sacrifice' of giving up scarce resources may still be experienced. Subjective outlay cost may be experienced both after, while, or before the actual outlays are made. As the coward may experience the pain caused by the needle even before the nurse gives the shot.

Objective opportunity cost deals with the objective value of the best alternative forgone. This conception is the basis of modern price theory in economics. Stigler (1966) illustrates the conception arguing that the cost of an acre of land to agricultural uses is the amount the land could yield in nonagricultural uses, and that the cost of the acre of land to wheat growing farmer *X* is the amount the land would yield to other wheat farmers, as well as all other non-wheat uses. If the value of the best alternative changes, so does the opportunity cost of the acre of land.

Subjective opportunity cost refers to the opportunity cost as experienced by the decision maker. Forgone value, it is argued in this conception, can not be determined by anyone else than by the decision maker. In this conception, cost can be called choice-influencing cost or ex ante cost.

Is cost only financial in nature?

Traditionally economic models of decision making do not include other than monetary cost (implying either that the 'total value loss' is incorporated in the monetary cost, or that the former is not the case but that the non-monetary cost does not exist, can not be measured, or is too small to make a difference).

In order to behave, an individual has to make use of his/her monetary and behavioral resources (Verhallen and Pieters 1984). The behavioral resources comprise time (Becker 1976), physical and mental energy (Marks 1977). Physical energy refers to labor and strength. Mental energy refers to the general and situation-specific cognitive capacity of individuals. When behavioral resources are sacrificed, behavioral costs are made.

When attempting to build a cost-accounting framework in social psychology, all cost conceptions treated in the preceding section are needed. Objective cost indicates the price of alternatives. The monetary price can be distinguished from the behavioral price (time demand, demand on thinking capacity and strength and so on). Second, the social cost conception has its place. It is relevant to analyze the extent to which people have internalized externalities (compare research on altruism, environmental concern and the like). For a descriptive theory of decision making the subjective private outlay and opportunity cost concepts are central.

How is cost treated in social psychological theories of human functioning? In the next sections, social exchange theory and attitude theory will be focused upon.

Social exchange theory and cost

The concept of cost is present in several theories and models of social behavior. Yet, only in social exchange theory does cost receive more than superficial attention.

Social exchange theory is concerned with the general processes and principles that govern the provision, trade or transfer of more or less valued psychological, social, and material commodities or resources.

Social exchange theory is not a homogeneous theory, in fact it is more a collection of theories that share a number of characteristics (McClin-
tock et al. 1984).

In social exchange theory both outlay cost and opportunity cost are treated. Homans (1961: 58–60) explicitly defines cost as opportunity cost. A central element in the social exchange theory of Thibaut and Kelley (1959) is the exchange of valued resources between members of dyadic and more complex relationships. Interactions between persons in dyads are treated as exchange relationships. Interactions lead to outcomes that are valued by the participants in the interaction. Two general criteria are used in this valuation process:

- (a) the Comparison Level (CL), and
- (b) the Comparison Level for Alternatives (CLalt).

The Comparison Level (CL) is a standard to judge the value of the outcomes in terms of what the person feels s/he deserves. If the outcomes fall below the CL, the interaction is valued negatively, if they fall above the CL, the interaction is valued positively. The CL is influenced by one's personal history, and by expectations of attaining certain outcomes. The CL refers to the rewards, benefits, of a relationship relative to the outlays.

The Comparison Level for Alternatives (CLalt) is '... the standard the member uses in deciding whether to remain in or leave the relationship' (Thibaut and Kelley 1959: 21). CLalt is defined informally as the lowest level of outcomes a member will accept in the light of available alternatives. In Thibaut and Kelley's words (1959: 22) '... The height of the CLalt will depend mainly on the quality of the best of the members available alternatives'. The Comparison Level for Alternatives is the opportunity cost.

Recently, Rusbult (1980) has extended the work of Thibaut and Kelley by specifying an investment model of romantic associations. The primary goal of the investment model is to predict the degree of commitment to, and satisfaction with a variety of forms of ongoing associations (e.g., romantic, friendship, business) with wide ranging duration. The relevant aspects of the investment model can be ex-

pressed simply as:

$$Com_X = O_X + I_X - O_Y, \quad (1)$$

$$I_X = \sum_{i=1}^n w_i \times r_i, \quad (2)$$

$$O_X = \sum_{j=1}^m w_j \times a_j, \quad (3)$$

where Com_X is the commitment to action X , O_X is the outcome value of action X , I_X is the investment value of action X , O_Y is the outcome value of action Y , assuming Y is the best available alternative to X , r_i is the size of the investment of resource j in relationship X , a_j is the individual's subjective estimate of the value of attribute i available in relationship X , and w is the subjective importance of the resources and attributes.

The investment model of ongoing relationships specifies that the commitment to remain in a certain relationship X is a simple function of the subjective benefits of X , the subjective historical outlay cost of X , and the subjective opportunity cost of X . In two studies Rusbult (1980) tested and found support for the investment model.

Rusbult's study is one of the few recent studies that treat the costs and benefits of interpersonal relationships as a central topic. Hays (1985) studying friendship development argues that although notions of costs and benefits are at the core of a number of models of friendship development, '... little data exist on individuals' perceptions of the various costs and benefits accruing from their relationships or possible changes in the types of costs and benefits that emerge at different stages of relationship development' (Hays 1985: 909).

Social exchange theory is one of the few attempts to infuse economic concepts and models in social psychological theory. These attempts do not seem to have had a considerable impact on social psychological theorizing.

Attitude-behavior models and cost

Attitude is by far the most frequently studied concept in social psychology. Studies on attitude formation and change, and on atti-

tude–behavior relationships are so numerous, that any review of the literature either is deemed to be incomplete or takes more pages than an average dictionary. In particular the literature on attitude–behavior relationships is relevant for the present purpose, as for economics cost and choice are fully intertwined, so are attitude and behavior, for social psychology.

The utility of the attitude concept largely derives from its assumed property to direct behavior. The model that has dominated research on attitude–behavior relationships in recent years is the well-known Fishbein and Ajzen (1975) model of Reasoned Action.

The question is how cost is treated in attitude theory, in particular in the Fishbein and Ajzen type of attitude model. The general form of the Fishbein and Ajzen model can be summarized as:

$$B \approx BI = w_1 A_{\text{act}} + w_2 SN, \quad (4)$$

B stands for ‘behavior’, BI is the behavioral intention, A_{act} is the attitude towards the act, and SN is the subjective norm. The model specifies that behavior that is under volitional control is determined by two general factors, a personal factor, the attitude, and a social factor, the subjective norm.

Attitude is a positive or negative affect with respect to the act. The attitude is determined by the summed expected consequences of the behavior, called beliefs (b), weighted by the evaluation (e) of these consequences. The subjective norm is the generalized pressure from relevant others. It is determined by the social norms of salient referents (nb), weighted by the motivation to comply (mc) with these social norms. The relevant equations are well known and are presented by, e.g., Fishbein and Azen (1975).

Recent research with the model has focused on whether (a) the specified direct and indirect relationships in the model are empirically retrieved, (b) other variables than the ones included in the model influence behavior, and whether (c) factors may moderate relationships between constructs in the model (see Pieters 1988).

In the literature on attitude–behavior relationships hardly any mention is made of the cost of behavior. The conclusion of Meyer (1982) that attitude does not seem to capture the non-zero opportunity cost of behavior is repeated and extended.

Subjective outlays, revenues and attitudes

Verhallen and Pieters (1984) argue that the subjective outlays and revenues of a behavior are to be found in the beliefs–times–evaluation expression. A typical belief statement in research on, e.g., residential energy saving might be:

‘In order to save electricity in the home ... I have to spend time’.

This belief-statement represents the time-demand of ‘saving electricity in the home’, it refers to the outlays in time one has to make. Other belief-statements represent revenues, e.g., the psychic revenue of ‘being a good citizen when saving energy’, or the monetary revenue, when paying a lower electricity bill.

In the Reasoned Action Model, the belief is multiplied by an evaluation of the expected outcome. An evaluation of a belief indicates whether an expected consequence of behavior is liked or disliked by the person, i.e., whether a consequence is perceived as an outlay or whether it is perceived as a revenue. Negatively evaluated consequences constitute costs, positively evaluated consequences constitute benefits. In other words, a combination of a belief and an evaluation forms a subjective cost or benefit element.

Cost and benefit elements are not distinguished in the Reasoned Action model. As a consequence, most research with the model does not provide much insight into the structure of the subjective costs and benefits and how this relates to behavior. How do people weigh the costs and benefits in decisions about some specific behavior. Are certain people more cost-sensitive and others more benefit-sensitive? (compare Kahneman and Tversky (1979) on risk-proneness and risk-aversiveness). Are costs weighed more heavily than benefits, when and by who? How do the experienced costs and benefits of behavior change in the course of time?

Analogous to the investment model of Rusbult (1980), the costs and benefits of behavior (subjective outlays and revenues) can be treated as separate constructs (see Pieters and Verhallen 1986; Pieters 1987).

Subjective opportunity cost and attitudes

The opportunity cost of a certain action is not represented in the Reasoned Action model and similar attitude models. Usually the

attitude toward one specific act (or object) is determined. To represent the opportunity cost of performing this act, the attitude towards performing the best alternative should be taken into account. If behavior involves a choice between alternatives, one should determine (a) the alternatives in the subjective choice set of individuals, (b) the alternative valued highest next to the target action.

Behavior is crucially determined by the set of possibilities open to an individual. Individuals act on the basis of their personal knowledge about the choice set, which may often differ systematically from the actual choice set (Frey and Foppa 1986). Frey (1983) argues that in, e.g., political decision making the opportunity cost of behavior often receives a low weight. Thaler (1980) found in his research that compared to outlay cost, opportunity cost is often underweighted (referred to as the endowment effect).

More research is needed concerning the factors influencing the size and content of the individual's choice set, and the role opportunity cost plays in determining behavior. The opportunity cost of behavior can be incorporated in attitude models analogously as it has been done in the investment model.

Conclusion

Cost and value bridge economic and psychological theories of human functioning. The concepts may provide the common ground for an intensive joint research programme in the disciplines of psychology and economics.

Many economic issues need joint study. Entrepreneurial decision making is just one of such issues. The list of interesting research questions that Hayes (1950) provided 40 years ago includes decisions to establish an enterprise, to buy into a going enterprise, to increase investment in an enterprise, to sell a portion of the enterprise, to invest in certain projects and not in others, to take a loan, to hire certain professionals and so on. Consumer decision making has been studied extensively in the last decades, mainly from a purely psychological point of view. More intense cooperation between social psychology and economics in this domain may prove quite rewarding.

There are also several traditionally non-economic issues where collaboration between economics and psychology might be fruitful. Re-

search on altruism and moral behavior might be such an issue. Both psychologists and economist have been working in this domain, with a more common focus than they might expect at first sight (see Becker (1976) on interdependent utility functions and Dovidio (1984) on personal norms of aiding and fairness, and on cost and reward considerations in helping). Among the other issues intimate relationships, marriage and romantic associations might also be fruitfully studied in cooperation (Frey and Foppa 1986).

At the level of model and theory building, more cooperation is possible as well. In economics, value and cost have been central constructs. The utility of commodities and alternatives, and the way (subjective expected) utility relates to choice have been studied in depth. In social psychology, attitude, and attitude-behavior models have dominated research. Analysis of the relationships between values, cost and choice should attract more joint research. Combining the theories and methods developed in economics and social psychology is needed here (see also Antonides 1989).

In *Behavior Cost Accounting* the expected and experienced consequences of a behavior are analyzed from a cost perspective. Analyzing behavior from such a perspective does not imply that individuals are highly involved and rationally adding and subtracting costs and benefits when deciding about alternative courses of action. The contrary may be the rule. The present approach is descriptive in nature. Costs are distinguished from benefits, outlay costs from opportunity costs. Consequences that directly affect the individual (private) can be distinguished from all other consequences. It can be determined to what extent individuals have internalized consequences of their behavior for others (other people, the environment and so on), i.e., to what extent they have internalized externalities. It can be analyzed when individuals rely on opportunity cost in choosing between alternatives, and when they rely on outlay cost, and when on both.

In the past, interest from economics in psychology mainly focused at the descriptive models and theories of motivation and choice that psychology could offer. Psychology has been most interested in the domain, the topics, of economics. The study of economic behavior has long been treated as merely a new domain to apply the general psychological theories to. Although this has been a profitable operation, even more might be gained for Economic Psychology when attention is paid to the concepts, models and theories developed in

economics. Cost is a valuable concept when trying to understand and predict human behavior.

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