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An Integrative View of How Consumers React to Scarcity*

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ABSTRACT

Scarcity, or the unavailability of goods, plays a central role in economic thinking but has received little attention from economic psychologists. In this paper we summarize a number of views on how consumers react to the unavailability of consumer goods. More specifically, we address the relationship of availability and the evaluation of goods. We discuss psychological theories and recent research findings to come to an enrichment of the traditional, i.e., economic view on how consumers deal with situations in which their demand for a good cannot be met. Our findings are presented in a model that has implications for research on the evaluations of unavailable goods. The results from this review are discussed in the light of their relevance for the enrichment and improvement of our understanding of the behavioral mechanisms underlying the central microeconomic phenomenon of scarcity.

1 INTRODUCTION

Scarcity is the essential concept within neoclassical economics. Lavoie (1992) remarks that "[e]verything of significance in neoclassical economics is scarce. ... Scarcity is the fulcrum of neoclassical economics ... Scarcity justifies the supply and demand analysis. It gives prices their crucial role. It governs the behavior of the economy." Classical economic theory posits that market value or price is enhanced through scarcity, which decreases the demand for a good. However, the theory assumes that s-

scarcity should not affect the psychological value or desirability of a commodity (Lynn, 1992a).

Although neglecting the potential influence of individuals on the economy (Lane, 1991; Lea, Tarpy, & Webley, 1987), Lavoie's (1992) analysis represents the ideas of most economists. Brennan (1991) contrasts this view sharply. In his view, there is no such thing as scarcity. What our world faces is not a situation of scarcity, but one of abundance. Given that we now produce more than what we need from simple ingredients, scarcity is only of interest in academic discussions. The bottom line in his analysis is that we should only worry about scarcity when we have consumed our world.

The present literature review suggests that economists and other social scientists share the view that there is such a thing as scarcity, and that it matters how individuals and organizations react to that. Achterhuis (1988) puts this view into perspective. His views are that modern society has not succeeded in diminishing scarcity. If anything, scarcity has increased in pervasiveness. We may, on a global level, produce enough food to feed all humans, but other scarcities have arisen. Time, well-being, health, clean surface water, and clean air have all become relatively scarce. Dutch law has recognized that silence has become a scarce good (De Volkskrant, 1985, cited in Achterhuis, 1988). Because we face a world with increasing scarcities, it has become more relevant to study how individuals - within organizations or personally - react to scarcity.

How does scarcity enter in the lives of individuals? Considerations of scarcity come into play in four behavioral areas, namely (a) when dealing with variations in natural resources, (b) in the distribution, (c) allocation, and (d) evaluation of scarce resources. It will become evident that the last concept, which is most relevant in the present context, receives the lion's share of the present review.

1.1 Natural Resources

The effects of the availability of resources has mainly been studied from an organizational context. Resources are valued to the extent that they are objectively scarce, and that they are not easily substituted or replaced by other resources. Economists usually employ the concepts of rent and unit costs as measures of the scarcity of nonrenewable resources

How an organization reacts to decreased environmental resources, depends in part on the locus of scarcity. If the locus is within the organization, it is necessary to verify the number and identity of responsible actors. Then, a reactive or proactive response may be invoked. If the locus of resource scarcity is extraorganizational, the response depends on the expected duration of the current period of scarcity and on previous periods (Nottenburg and Fedor, 1983).

The type of product is an essential parameter when dealing with natural resources. For instance, plutonium is an element necessary in various nuclear applications. It is not present in large quantities in the earth, and it is not easily substituted by other materials. Labor in many developing countries is abundantly present, and given the often low level of formal education necessary, one laborer is easily substituted by another. In the present view, plutonium is a scarce and valuable good, labor in developing countries may not be.

Time may be viewed as a natural resource. In a group task, Karan and Kelly (1992) found that group members who worked in a time scarcity condition, focused their interactions on task related activities. Simultaneously, they relatively neglected social and other nontask activities. However, in comparison with their counterparts in the time-abundance condition, they produced written solutions to a problem that were rated lowest in originality, creativity, and adequacy. Those with abundant time engaged in relatively more social and other nontask activities. They produced written solutions that were marginally lower in originality and creativity than those produced by optimal time groups; the solutions were, however, superior on a number of other characteristics.

1.2 Allocation And Distribution

Resources can be used to perform a certain activity. Individuals can meet with hurdles to take when they want to reach a goal. Allocation reflects active considerations on the part of the individual to attain a certain goal. Behavioral cost theory (Verhallen and Pieters, 1984) argues that an attitude to perform a behavior may not be converted because of too high behavioral costs. Then, the effort to be spent on that behavior is greater than allocated or expected by the individual. This issue of finite behavioral budgets parallels the budget restriction in microeconomic theory.

Resources or goods are distributed from producers or retailers to individuals or organizations. Various mechanisms may take care of this allocation or distribution characteristic. In microeconomic thinking, it is the market that regulates this distribution. The most important economic parameter in this respect is the price of a good or service.

In a different setting, Ross and Ellard (1986) investigated the distribution decisions of university posts among allocators. Allocators constructed a relationship between the availability of a resource and how worthy they found an applicant for a job. Allocators anticipating to make only 2 appointments out of 12 candidates because of external hiring constraints, expressed fewer positive remarks than did allocators who expected to appoint half of the applicants. In addition, after removing the external constraints, those who initially hired only two candidates, continued to employ fewer candidates than those who initially hired more.

The allocation or distribution of public means has been investigated by Skitka and Tetlock (1992). Distributors' actions toward claimants were influenced by scarcity and the source of the need situation. Under scarcity conditions, allocators were more likely to deny aid to claimants who were responsible for their personal difficulties. For those who were not responsible for their problems, their need and perceived efficiency of the aid emerged as joint predictors of allocating aid. The authors' four-stage allocation model starts with determining the appraisal of resource availability (sufficient or insufficient for all); then an attributional analysis follows, securing the locus of the needy situation (internal-controllable or external); next, an appraisal of the claimant's deservingness takes place, sorting out the need level and the expected efficiency of the aid; finally, priorities are set among claimants such that in low scarcity situations more claimants will be helped than under high scarcity. In the latter condition, only those claimants will receive aid whose predicament is not internally-controllably located, and who have a high need that can be efficiently resolved.

Organizations appear to follow similar lines of thoughts. Wayne and Rubinstein (1992) had participants make allocation decisions between two projects within an organization. In the abundance condition, the bulk of the funds was allocated to the candidate who performed in accord with high moral standards. This person of high moral responsibility received on

average about 80% of the nine million dollars set aside for funding. However, in times of scarcity the difference with the rival program decreased. The contesting project leader, of doubtful moral responsibility but with an excellent record on technical competence (i.e., getting a job done), would now receive about 45% of the funds on average (compared to 20% in the abundance condition).

Worchel (1992) found that people are not only concerned with the mere supply of a product, but that they are also influenced by the distribution of that supply. It is not only that individuals want to have what others do not have. They want to assure that they are not the only ones who are not in the possession of what others have now or have had in the past. In this vein, available goods may gain in value because of limited accessibility.

Personal characteristics also have a part to play. Szybillo (1975) found that fashion-opinion leaders, relative to nonleaders, rated fashions with limited distribution as more attractive than fashions with extended distribution.

The above analysis shows that distribution of valued items or services may differ, according to whether one operates under conditions of sufficiency or under conditions of scarcity. The next section considers that aspect of scarcity that is most relevant from the viewpoint of the individual economic agent, namely evaluation. It is therefore also relevant for consumer psychology and marketing.

2 Evaluation: Unavailability Affects Preferences

It is a commonplace in psychology and marketing to say that scarce goods or services are more attractive than abundantly available ones. Scarcity increases value. Even one- and two-year olds are sensitive to conditions of scarcity: when means, in this case toys, are scarce, conflicts arise (Caplan et al., 1991). Commodity theory has been used widely to investigate the effects of scarcity on the evaluation of goods.

2.1 Commodity Theory

Brock (1968) argued that the valuation of a commodity jointly depended on intrinsic, functional product attributes, and on supply and demand charac-

teristics. The main premise of the theory is that any commodity will be valued to the extent that the more unavailable a good is, the higher it will be valued. Recently, Brock and Brannon (1992) reformulated commodity theory. Three enhancements liberated the theory from identified shortcomings. First, the theory is extended to encompass personal traits and skills. This was a logical extension of the original formulation since much commodity-theory driven research focused on 'real objects and experiences.' Second, commodity theory now includes positively and negatively valenced objects. The theory extends to negative objects that are not sought to be possessed but to be avoided. Finally, because of the inclusion of negatively valenced objects, it is postulated that factors like scarcity lead to a polarization of the initial valence of the object. Evaluations thus become more extreme under the influence of commodifying factors like scarcity. Hence, Brock and Brannon prefer to refer to the scarcity-polarization relationship.

A problem raised by several researchers is why and how the unavailability factors distinguished by commodity theory affect the valuation of a good (Fromkin, 1970; Worchel et al., 1975; Verhallen, 1982). The liberalized version of commodity theory assumes that scarcity leads to an increased message and cognitive response elaboration. In turn, this elaboration leads to valuation polarization through central-route elaborative processing (Petty and Cacioppo, 1986). This cognitive elaboration explanation rivals with the following explanations.

2.1.1 Need for Uniqueness

Unavailability implies that few people possess a certain resource, thus evoking a sense of self-uniqueness (Snyder, 1992; Snyder and Fromkin, 1980), downward comparison processes with those do not possess a resource, and a sense of power over those who want to possess the unavailable source (Emerson, 1962). This unicity motive should explain the value increasing effect of unavailability. Individuals have a desire to perceive themselves as unique members of society. One way of acquiring or maintaining this sense of uniqueness is by possessing scarce objects. In this vein, people differentiate themselves from others (Belk, 1988) by the possession and display of scarce objects. Fromkin et al. (1971) showed that a good only available at restricted periods in time is valued more highly than a good

of unrestricted availability; compare *limited edition* advertising strategies. Lynn's (1991) analysis showed that the enhancement of a commodity's value was stronger the greater individuals' need for uniqueness. This finding suggests that tactics aimed at inducing scarcity effects will be more effective when addressed to individuals displaying a higher than average need for uniqueness. It is, however, hard to explain the effect of scarcity due to popularity or the effects of effort and delay on the valuation of a good with a unicity motive. The unicity motive is only one out of several possible that can be aroused by limited availability.

2.1.2 Personal Costs and Energization

Unavailability implies that obtaining a resource is costly in terms of time, effort, or money. Such resources may be seen as status symbols (Veblen, 1965). Given that people believe that costly things should be worth more, they assimilate their perceptions of value to this normative standard (Seta and Seta, 1982, 1992). The apparent or perceived costs to attain such resources represent barriers to possession; those barriers are physiologically arousing, and this arousal increases the desire for the unavailable commodity (Brehm et al., 1983; Wright, 1992).

Wright (1992) distinguishes motivation and potential motivation in discussing scarcity's effect on the evaluation of commodities. Potential motivation equates with what individuals would be willing to do to attain an unavailable object. The individual's perception of outcome value should affect directly only their willingness to act. The difficulty of attaining or avoiding the outcomes should determine energization and subjective aspects of motivation. Therefore, Wright proposes that the difficulty of the instrumental behavior determines the actual effort exerted and the motivational arousal. In this view, there is a difference between what people are willing to do to satisfy a need, and what they actually do. Where Wright suggests that it is motivation that should be studied, he views potential motivation as dependent on the need, the incentive value of the behavior, the need for uniqueness, reactance, and scarcity.

In personal equity-comparison theory (Seta and Seta, 1982), cost is an index of value. A product's availability corresponds to the cost associated with its attainment. Scarce products and products that are difficult to attain imply more costs than more readily available products. Costs can

be imaginary (or anticipatory) or actual (present costs). If individuals anticipate a moderate level of costs associated with the attainment of a good, they think they should receive a higher valued outcome in compensation. To the extent that scarcity implies cost incurrence, scarce products should be more valuable than less scarce products. To maintain a personally equitable relationship with a scarce commodity and the value of the commodity, individuals are motivated to discover positive properties of the product which can effectively increase its perceived value. If a good is perceived as very scarce, and thus as very costly, the individual may not be able to identify any positive properties of the product that justify these costs. Such a scenario may lead to a contrasting process invoking value decrements. The effects of scarcity depend on the level of scarcity, and whether the product is assimilated or contrasted with the individual's expectations about or ability to discover product properties that match the expectation (Seta and Seta, 1992).

2.1.3 Reactance Theory

Individuals may perceive unavailability as a threat to their freedom to possess the commodity. This perceived threat increases the desirability of the object, because individuals will try to reestablish threatened freedoms (Brehm, 1966; Worchel, 1992). Scarce commodities limit individuals' freedom to possess these commodities and consequently cause reactance. This reactance manifests itself through increased attraction to and enhanced evaluation of scarce commodities.

Worchel et al. (1975) investigated the effect of availability change and the cause of unavailability on the valuation of cookies. They showed that scarce cookies, especially when due to popularity, were rated highest on liking and attraction. The interpretation of the findings given by the experiments was based on reactance theory (Brehm, 1966). Reactance theory hypothesizes that when a choice alternative is removed from a given set this is perceived by individuals as threatening their decision freedom. This threat is reacted upon by increasing the perceived value of the removed alternative. In the condition in which an abundantly available cookie becomes scarce due to popularity, the threat is assumed to be most pronounced. Therefore, the highest value rating is obtained in accordance with predictions based on reactance theory. This result confirms

the 'forbidden fruit is sweet' explanation (Elster, 1982).

Worchel (1992) argues that the scarcity-value relationship only holds for those commodities to which individuals think they should have access to. So only if they perceive that a previously existing freedom of access has been violated, does this relationship occur. A moderator of this relationship is the number of others possessing the commodity. Reasons for inaccessibility that are aimed at the individual have a stronger impact than those aimed at the product. When individuals cannot access a commodity that others have access to, their desire for the product is positively related to the number of others possessing the commodity, and the degree of personalism in the cause for the unavailability. In his second study, Worchel found that the desire to hear a withheld, prerecorded message increased when the censorship of the withheld communication was aimed specifically at certain participants, namely those who showed a certain profile on an attitude questionnaire. Participants' endorsement of the statement in the communication increased when compared to the uncensored communication conditions.

2.1.4 The Scarcity Heuristic

Unavailability may serve as a heuristic cue. In this sense, it resembles the price-quality relationship (Rao and Monroe, 1989). Ditto and Jemmott (1989) state that 'if all that is known about some object or characteristics that it is rare, people may rely on a *scarcity principle* to infer an extreme evaluation.' Confronted with the information that a certain health disorder is rare, people will infer that it is serious. In that vein, if consumers learn that a commodity is rare, they will assume that it is valuable. The idea is that because scarcity affects availability, less common goods are more valuable. This relationship between supply and demand has probably been reinforced many times during consumer socialization. It therefore is reasonable to assume that people associate scarcity with value (Cialdini, 1987). For Lynn (1989), assumed expensiveness mediates the enhancement of value by scarcity. Starting from the assumption that 'it is plausible that people have learned to associate scarcity with expensiveness,' Lynn (1992a) concludes that individuals desire expensive things more than inexpensive things. This desire may be driven by an attribution of higher quality to the more expensive commodity, or by an increase in

perceived status by possessing scarce objects.

Ditto and Jemmott (1989) believe that the mechanism of *evaluative extremity* operates here. The perceived prevalence of a good, or a piece of information, drives the evaluation to an extreme both for desirable and undesirable objects. People have learned that prevalence information is a reliable indicator of evaluative extremity. Scarcity does not simply lead to more positive evaluations; it leads to extreme evaluations. The general principle is that an evaluation will be more positive if the object of evaluation is positive or desirable. It will be more negative if the object under evaluation is seen as negative or undesirable. They suggest a hierarchical effect: first, the scarcity heuristic directs individuals' initial evaluations to a good, and second, other mechanisms like need for uniqueness come into play.

Folger (1992) states that unavailability may act as a cue, a signal of some property associated with unavailability. This cue-based approach acts prominently in naive economic theories. He contrasts this signaling approach with a cognitive accessibility approach to scarcity. Goods become more salient because of unavailability, rareness, or uniqueness. So it is plausible that those features enhance the probability that people think about such goods; next, the more often it comes to mind, the more it might prompt active consideration and rehearsal. Similar effects may be obtained by characteristics like rarity, costs, effort, and unicity (Folger, 1992). They enhance the motivation to process relevant information (Bozzolo and Brock, 1992).

2.2 Reasons For Unavailability

The analysis above shows that unavailable commodities may increase in value. It is necessary to describe the conditions that potentially evoke situations of scarcity. Table 1 contains three different types of limited availability, namely restricted availability, conditional availability, and limited availability due to market circumstances, and their relationships with preference effects, the associated behavioral mechanisms, and initiating conditions.

Table 1 Limited availability and preference

| If unavailability is due to: | condition | behavioral mechanism | preference effect |
|---|---|---|-------------------|
| restrictions (i.e., a commodity is available only for certain individuals) | group belongingness | arousal of unity or other social motives (e.g., prestige, altruism) | increase depends |
| conditions (i.e., a commodity is available only if specific conditions are met) | behavioral: time delay psychic effort physical effort financial: price social: service | cost evaluation | increase |
| market circumstances | demand supply demand & supply | cost evaluation arousal of social motives | increase |
| nonmarket or accidental circumstances | accidental | none | none |

Restricted availability refers to availability dependent on membership of a specific group, e.g., a professional organization like IAREP. *Only for* individuals belonging to such a group a good is available. Unavailable goods that are easily substituted by alternatives will probably not lead to an enhancement of value. Therefore, product category and product need may mediate the scarcity-value relationship. *Conditional availability* means that a good becomes available *only if* certain conditions or task require-

ments are met, for instance, a lecture becoming available after taking place in an auditorium. Such requirements include Brock's categories 'effort to be spent', 'time to wait', a financial price to be paid and a service to be rendered. Verhallen and Pieters (1984) developed their behavioral cost theory to organize these task requirements to explain individual agents' allocation decisions. The central idea is not substitutability of products, but the relationship between the size of the task requirements and the sizes of the behavioral and social budgets set. Given these budgets, an individual allocates parts of these budgets to attain a certain goal. Unavailability arouses a cost perception through the ratio between task requirements or prices to be paid and the behavioral budgets. This perception of costs drives the evaluation or preference for a certain good. The third type of limited availability refers to *market circumstances*, or factors concerning demand and supply that lead to the limited availability. Several studies have shown that scarcity induced through market factors has a stronger impact on the desirability of goods than scarcity due to nonmarket factors.

The following sections discuss the effects of these three types of limited availability on behavioral reactions and on the preference for goods.

2.2.1 Restricted Availability: Social Values and Norms

Fromkin et al. (1971) suggest that in some situations not a unicity motive but other social motives occur. The valuation of positional or socially scarce goods, as discussed by Hirsch (1976), might be based on the social prestige that is perceived to be associated with such a good. Verhallen (1982) hypothesized that an altruism motive was aroused in some participants who were not interested in the experimental books. This altruism motive could have caused the participants not to choose the alternatives of limited availability. Therefore, restrictions on the availability of goods may lead to an attribution of social value, e.g., unicity or prestige, to the commodity or to the elicitation of social norms like altruism and equity (Lerner, 1981) that inhibit the overt choice. Attitude theory (Ajzen and Fishbein, 1980) views a behavioral or a buying intention as influenced by two factors, namely the attitude toward an object or act and the social norms that may inhibit or facilitate the expression of personal preferences

in overt behavior. Both social effects of restricted availability (social prestige and altruism) on the valuation of goods and the effect of social norm elicitation on overt choice need further exploration.

2.2.2 Conditional Availability: Delay, Effort, Service, And Price As Cost Factors In Availability

Commodity theory distinguishes four groups of factors that convey unavailability: restriction, delay, effort, and scarcity. A review of experimental research based on commodity theory showed that only the effect of restrictions on the valuation of commodities received extensive empirical attention (Fromkin and Brock, 1971). Since then, the effect of scarcity on the valuation of goods has received more attention (Lynn, 1991, 1992a, 1992b; Verhallen, 1982; Verhallen and Robben, 1994a). Wright (1992) investigated the role of effort in this sense, but delay has been relatively neglected.

Delay and effort are a combination of a price element (delay equals time price), and a cost sort, with effort as relative task difficulty. For instance, a decision task requires both psychic and physical activities. The effort associated with the task depends on the person's abilities. Other factors related with sacrifice and opportunities relevant for the difference between a behavioral price and behavioral costs have been elaborated by Verhallen and Pieters (1984). They emphasize the importance of nonfinancial costs for the explanation of reasoned action. Financial costs are extended with behavioral and social costs. Behavioral costs include psychic, physical and time demands. Commodity theory's delay and effort, divided in psychic and physical effort, are in fact behavioral costs. Social costs such as compliance, instrumental services and acceptance (see, e.g., Blau, 1964) can also be distinguished. Apart from a financial price, a behavioral or a social price may have to be paid in given situations to obtain a good.

Following Scitovsky (1945), the possible dependency of value as expressed in product preference and price has been considered: price may serve as an indicator of quality. Gabor and Granger (1966), for instance, confirmed this hypothesis on the price-quality relationship. In a similar vein we may extend this relationship to a *total price*, which indicates the value of a commodity to an individual. If in a choice situation an

alternative is increased in total price (its financial price, time price or delay, effort, social services to be rendered), its attractiveness, and consequently the preference for that commodity increase. To explain the effect of conditional availability information such as delay, effort, service and price on preferences a total cost perception may be at work. A stronger availability requirement leads to a higher perceived total price that within a given choice situation leads to a higher cost evaluation. There is empirical evidence for the financial form of this cost-value relationship (see, e.g., Olson, 1977; Monroe and Pretroshius, 1981). The behavioral and social cost-value relationship also received support (Robben and Verhallen, 1994; Verhallen and Robben, 1994a).

2.2.3 Limited Availability Due To Market Circumstances

Commodity theory states that scarcity is a way to convey unavailability. The number of corecipients and the number of suppliers of a good influence the valuation of that good. Brock (1968) provided empirical evidence concerning the effect of increased demand on the valuation of messages. With respect to tangible goods or communications, Worchel et al. (1975), Verhallen (1982), and Verhallen and Robben (1994a) show the effect of scarcity on the evaluation of goods to be stronger when scarcity is due to an increased demand than when due to accidental circumstances. For nontangible commodities, the persuasiveness of a communication did not increase when it was unavailable due to accidental circumstances (Worchel, 1992).

The effect of scarcity due to limited supply on the valuation of tangible goods has hardly been experimentally addressed. Verhallen (1982: 305-312) reports an effect of limited supply on choice behavior in the expected direction: goods of limited availability were chosen more often. The aforementioned studies have shown that accidentally scarce goods were not more highly valued than abundantly available goods. It is not the mere limited availability but the attribution to the cause of unavailability that produces the preference increasing effect. Market cues may cause an impression of being harder to get, more costly or giving the recipient a unique commodity. The effect of limited availability due to market causes on preference is hypothesized to be mediated by both a cost and a uniqueness evaluation (Verhallen and Robben, 1994a).

Verhallen (1982: 313-320) had female homemakers choose between three recipe-books in a simulated product test situation. Three levels of availability (available, unavailable, unavailable changed to available) varied across the three books. One out of four reasons for unavailability was given: accidental circumstances, popularity, limited supply and both popularity and limited supply. The hypothesis based on reactance theory was rejected: The unavailable book was not valued highest over all conditions but valued lowest, especially when having a market induced reason for its unavailability. The unavailable book that changed to become available was not rated lowest but highest. These findings were most clear-cut for participants who indicated an interest in the product and under the market cause conditions.

For the unavailable good an explanation based on the occurrence of frustration in the experimental situation was given. The elimination of a choice alternative, which would have been evaluated as most positive, could be interpreted by individuals as blocking a desirable alternative. The induction of frustration will then, according to the frustration-aggression hypothesis (Dollard et al., 1939), make subjects prone to devalue the unavailable alternative. The 'sour grape' explanation (Elster, 1982) is consistent with this view rooted in frustration.

Blocking or removing alternatives in a choice task has stimulated a separate field of research. Removing a choice object results in a phantom object. A phantom object is an object that is made unavailable in a decision making context (Pratkanis and Farquhar, 1992). Typically, phantom objects represent the superior alternative in decision tasks. Phantoms also affect other concepts than desirability, like perception, evaluation, and final choice among alternatives. For instance, the mere 'presence' of a phantom object decreases the attractiveness of other alternatives. The characteristic that makes the phantom object most desirable, becomes the most important aspect in the final choice of individuals.

The comparison of the experiments by Worchel et al. (1975) and Verhallen (1982) may suggest the conditions that lead to either theoretical explanation. If, as in Worchel et al., a choice alternative is first offered and subsequently removed (made unavailable or threatened to be made unavailable) a reactance effect occurs and the alternative increases in value. However if, as in Verhallen's experiment, an attractive choice

alternative is offered as unavailable or blocked from the beginning, a frustration effect might be hypothesized, and the alternative decreases in value. Thus, the specific preceding conditions are relevant for predicting the effect of unavailability on preference formation.

From an economic standpoint a completely unavailable good is irrelevant, as it cannot be exchanged. However, if a nonexistent good is valued highly by prospective buyers, this desire may stimulate product development or enhancement. A good that has been unavailable in the past but has become available now, or a good of limited availability are obviously relevant.

Verhallen (1982) found that an unavailable book that became available was rated significantly more attractive than an always available one. This finding suggests a new point of view, as frustration and reactance theory do not apply. The increase in attractiveness does not occur because a choice alternative is blocked (frustration), taken away (reactance) or unavailable (scarcity heuristic). In contrast, the reverse has happened by *adding* an alternative to the existing ones. A reversal of a reactance effect was hypothesized but not supported, given the higher preference for the added alternative. In addition, the value increase of the alternative that became available was significantly higher than in the condition in which an accidental reason was offered. Therefore, it is not the change in availability as such but the *perceived* cause of this change which determines the preference increase.

3 Towards A More Comprehensive View

This literature review shows that there is no straightforward prediction of what the effect of scarcity on the evaluation of an tangible or intangible object will be. The scarcity concept as traditionally used in microeconomics, namely the scarcity of goods or means as expressed in prices, and the scarcity of means as expressed in a financial budget restriction, is inadequate and needs to be extended with behavioral aspects. First, the reasons of the unavailability have to be identified. Second, within each cause, one should establish the behavioral mechanism that drives the evaluation.

As has been put forward earlier, there is no consensus on a particular behavioral mechanism within commodity theory that explains how unavailability cues affect the evaluation of goods. Unicity and other motives, reactance and frustration theory, personal equity-comparison theory, energization theory, the scarcity heuristic, and an cognitive elaboration perspective have been discussed as potential and mutually nonexclusive mechanisms. Brock and Brannon (1992) have liberated commodity theory, and explain the reactions of individuals to scarcity through a cognitive elaboration perspective. However, the problem about why and how those reactions take place is still a valid one, given that there has been no empirical test to support this elaboration perspective. Verhallen and Robben (1994a) report a more systematic effort to investigate the effect of different types of limited availability and related situational characteristics on the valuation of goods. As some of these unavailability conditions have not been investigated in great detail their effect remains hypothetical.

In contrast to Brock and Brannon's (1992) opinion, there is evidence that a good of limited availability is only valued more than an alternative of unlimited availability when the limitations are not due to accidental circumstances (Lynn 1992b; Verhallen and Robben, 1994a). The causes for the limited availability determine the attributions people will make. The hypothesis that has been posed and partially tested in experiments (Robben and Verhallen, 1994; Verhallen, 1984; Verhallen and Robben, 1994a, 1994b) is that a behavioral cost evaluation mediates the effect of task conditions such as delay and effort, or the effect of market circumstances on the valuation of goods (compare the price-quality relationship). The availability conditions delay, effort, and market circumstances are hypothesized to affect the valuation of goods by arousing a cost assessment by the choosing individual. Figure 1 depicts this hypothesis.

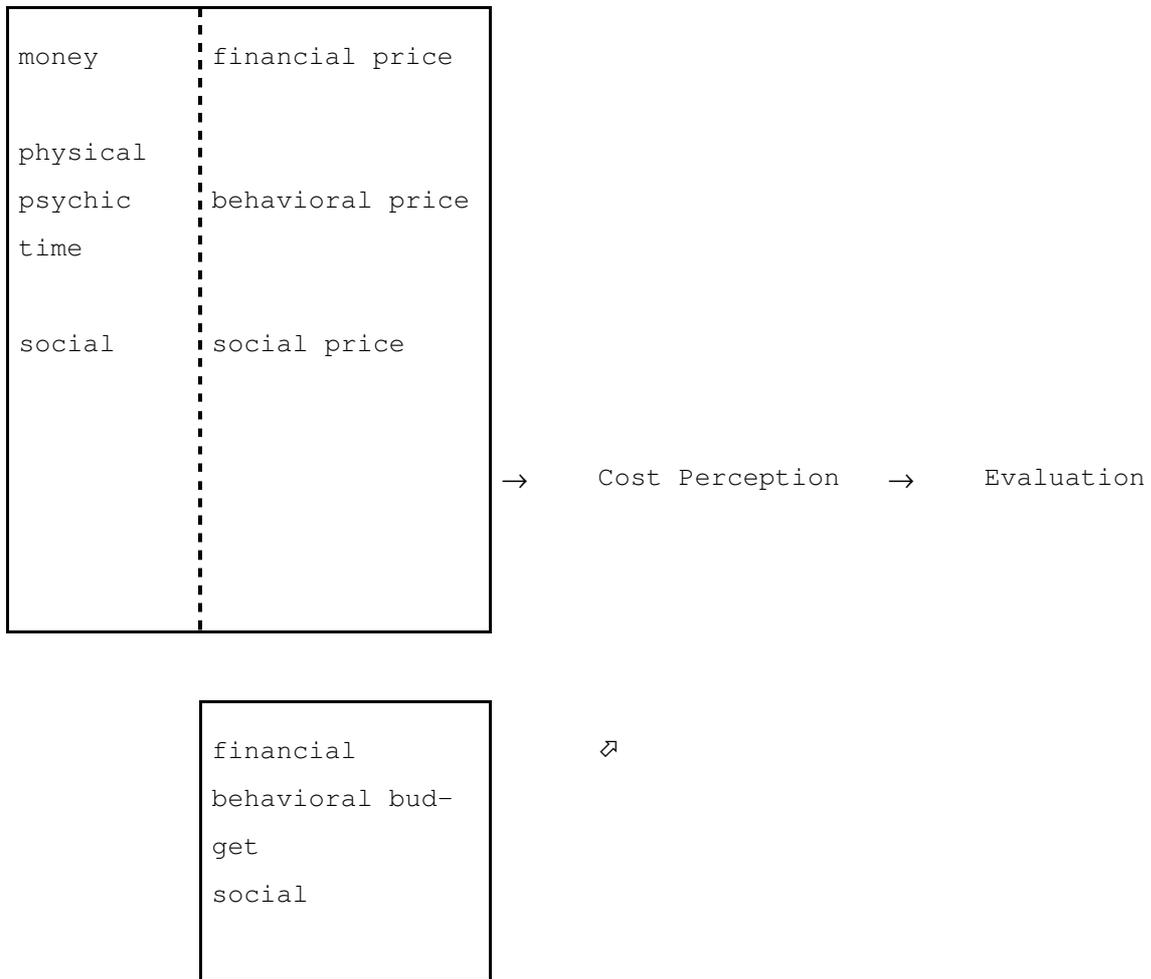


Figure 1 The total price-value relationship

To attain a good, one or more task demands or prices to be paid have to be fulfilled. Budget characteristics and situational and personal factors influence the salience and perception of these cost factors. As a result, a corresponding valuation effect for the higher priced choice alternative occurs. The more explicit the behavioral price information is in the test situation, the higher the goods are valued. This additional extrinsic value can be added to functional value such as value in use. As the different choice alternatives are offered within a given setting, the budgets which

depend on the individual's goal importance, are constant. This hypothesis generalizes the price-quality relationship by including other than pure financial prices and specifying the condition that only if a price increase leads to a perceived cost increase, a value increase will occur.

Preferences are not always converted into overt choices even when financial constraints are absent. Verhallen and Robben (1994a) have shown the effect of social circumstances, when participants did not choose the most preferred alternative. The occurrence of social norms inhibiting preferences to be expressed in overt choice may even be more important than financial budget constraints (Lindenberg, 1983).

Summarizing, the behavioral interpretation of scarcity raises several points. First, scarcity implies that goods have financial, behavioral and social prices to be paid to make the good available. Second, restricted and limited availability may convey social and behavioral costs that influence the valuation of goods. Third, the valuation of goods does not only depend on functional intrinsic factors but also on perceived costs associated with them. Fourth, scarce means do not only encompass financial but also behavioral and social means. Finally, the size of a budget in consumer choice settings depends both on the goal importance of the behavioral field (e.g., the product class) and on a person's financial, behavioral and social stock (see Verhallen and Pieters, 1984).

Note:

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