Abstract

50 years of consumer decision research has resulted in many decision models and decision strategies, yet they appear conflicting and inconsistent. We know that consumers use different strategies in different decision contexts, yet we have insufficient understanding of how they choose and apply these strategies to yield predictability. We know that consumers sometimes trade-off between attributes of products, but at other times they eliminate the product without trade-off. There is empirical support for a multi-phase decision process for complex decision contexts, yet few decision theories go beyond a single-phase, outcome focused approach.

In this paper we examine existing consumer decision theory and propose an approach new to marketing, image theory, as a viable alternative that encompasses the existing theory while adding new insight. The strength of image theory lies in its multi-phase approach that allows, but does not require, trade-off between attributes and its applied data capture capabilities. Existing decision theories can be incorporated within its framework, with the consumer using one or more strategies within each phase and changing their strategy between phases. We believe image theory provides an opportunity for a broader perspective of consumer decision-making across multiple decision contexts.

Introduction

Marketers spend millions of dollars understanding what products or services people buy and the variables that may be included in promotional strategies to influence purchase outcomes. Business is more reluctant to spend money on the potentially more valuable information regarding how those decisions are made and which decision strategies are utilised in the decision process. Conflicting research results, which indicate that seemingly incompatible decision strategies are empirically proven, leave business people with little guidance on which approach is suitable and fuels the reluctance of companies to spend on decision strategies research. At times there appears to be as many decision-making models, choice models or strategies as there are consumers. In this paper we examine the extant literature to reveal why different consumer decision strategies have developed, compare the three types of decision theory, review the single versus multi-phase approaches and then suggest an approach that is both practical and theoretically valid.

Not all consumer actions are based on conscious decisions and intentions (or decisions) do not always lead to action (Arnould et al. 2004). Despite this, understanding how consumers process information and make decisions can assist us...
to understand consumer actions and hence behaviour (Svenson 1979, Bettman et al. 1998). We now realise that consumers actually utilise a repertoire of decision making strategies (Payne et al. 1992a, Solomon 1994) for different decisions – some simple (Simon 1955, Tversky 1972), some complex (Edwards 1954, Kahneman and Tversky 1979); some based primarily on cognitions (Pennington and Hastie 1986, Pennington and Hastie 1988, Shanteau 1988, Hammond 1990), others being ‘feelings’ or emotion based (Garbarino and Edell 1997, Luce et al. 1997). The challenge for researchers is to develop a decision model that encompasses the various decision strategies, while being sufficiently flexible to incorporate the different paths that consumers use when making decisions. Our inability to design such a model is one reason for the apparent contradictory results in published research.

Decision making has been studied in a variety of social science literatures such as marketing (Nowlis and Simonson 1996, Sivakumar and Raj 1997) and organisational behaviour (Connolly and Wagner 1988, Eisenhardt 1989, Beach and Mitchell 1990) for both consumers (Simonson 1989, Tellis and Gaeth 1990, Nelson and Puto 1998, Kivetz and Simonson 2000) and organisational or group-based decision making (Irwin and Davis 1995, Dawes et al. 1997, Weatherly and Beach 1998). Our focus is on consumer decision making and decision making strategies.

**Literature Review**

There are three main groups of consumer decision theory: **normative** decision theory, **behavioural** decision theory and **naturalistic** decision theory. **Normative** decision theory (von Neumann and Morgenstern 1947) imposes an order on the complexity of decision making (Beach 1997; Beach & Mitchell 1998) by assuming an ‘economic’ or ‘rational’ decision maker (Edwards 1954: 381, Simon 1955: 99). This implies complete knowledge about the choices and outcomes, stable preferences and computational skill to calculate expected utilities (Edwards 1954 Simon 1955) for each decision. **Behavioural** decision theory (Edwards 1955) is a modification of normative theory to allow the consumer to use multiple strategies to construct preferences and assess probabilities (Tversky and Kahneman 1974, Tversky et al. 1988, Slovic 1995). Behavioural theory implies “limited preference orderliness” (March 1978: 598) due to limited information, and a lack of ‘consistent and invariant’ decision rules (Payne et al. 1992b: 89). Decision strategies are contingent on the decision being made. Satisficing (Simon 1955, Simon 1956) is one well-known behavioural strategy. **Naturalistic** decision theory (see Klein et al. 1993) was derived from ‘real-world’ research (Orasanu & Connolly 1993) and approaches decision making from both a process and outcome perspective. It begins with a ‘situation assessment’ and offers multiple paths (both comparative and non-comparative) to a decision depending on the consumer’s assessment of that decision situation. Thus it encompasses decision-making in changing conditions, using ambiguous information, with shifting goals and objectives – that is, it is more reflective of the ‘real world’.

Within each of these theories are multiple models that provide insight into the decision making process. The conference paper limitations preclude us from a comparison of the decision models, however we have provided a summary in Appendix 1.
Our understanding of decision-making is clouded as the literature shows that consumer decision processes involve contingent usage of multiple decision strategies (Payne 1976, Beach and Mitchell 1978, Christensen-Szalanski 1978, Payne 1982) to achieve an outcome. The result is a large number of consumer decision-making strategies being identified and documented in the marketing literature but, unfortunately, the context of the decision strategy is not always easy to identify from the published material. The wide range of decision-making strategies may indicate that consumers are adaptive decision makers (Payne et al. 1993) who respond and adapt to their environment based on their values and goals to achieve certain outcomes (Beach and Mitchell 1987, Montgomery 1987, Beach 1990, Beach and Mitchell 1990, Montgomery 1993, Beach 1997, Beach 1998). The alternate explanation is that the models are developed within one context (or a few contexts) rather than the wider consumer decision-making framework. This paper presents an approach to examine that wider decision framework.

Classification of decision strategies
An important perspective of decision theory is that compensatory or non-compensatory decision processes are used by consumers during that decision process. Based on these two decision processes, single-phase decision models have evolved in different ways. Table 1 classifies different decision strategies by relating two factors: compensatory versus non-compensatory and alternative based versus attribute-based decisions. Compensatory strategies require consumers to make a trade-off between a high value on one attribute and a low value on another attribute (Stevenson and Naylor 1990). Compensatory strategies require extensive information processing because substantial detail is gathered to analyse the trade-offs. Non-compensatory strategies do not involve any trade-off, but focus on whether or not an attribute meets a predetermined cutoff level (Stevenson and Naylor 1990). Non-compensatory strategies are selective, that is, consumers restrict attention to only part of the available information (Beach and Mitchell 1978) and eliminate options that do meet the users’ requirements.

Alternative and attribute based strategies represent two comparison options used by consumers when making decisions. Alternative based processing refers to a consumer selecting a product/brand and examining all of its attributes before considering the next product. Attribute based processing refers to a consumer identifying one particular attribute and comparing attribute perceptions for several product/brands on that attribute before moving to the next attribute.

Table 1 presents a comparative summary of normative and behavioural decision theories based on how consumers make decisions within that theory. All these decision theories are based upon single-phase decision models. Naturalistic decision models do not fit within this classification structure because naturalistic decision models ‘depict decision-making as a sequence of activities’ (Lipshitz 1993: 104), and incorporate multiphase models where different decision strategies can be utilised.
### Table 1: Classification of decision strategies.

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Compensatory</th>
<th>Non-compensatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additive model</td>
<td>- Expected utility</td>
<td>Equal weighting model</td>
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<tr>
<td>- Subjective expected utility</td>
<td>- Conjunctive strategy</td>
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<tr>
<td>- Prospect theory</td>
<td>- Satisficing strategy</td>
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<tr>
<td>- Weighted adding strategy</td>
<td>- Disjunctive strategy</td>
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<tr>
<td>- Equal weight strategy</td>
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<table>
<thead>
<tr>
<th>Attribute</th>
<th>Compensatory</th>
<th>Non-compensatory</th>
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<tbody>
<tr>
<td>Additive difference model</td>
<td>- Majority of confirming dimensions strategy</td>
<td>Differential weighting model</td>
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<tr>
<td>-</td>
<td>- Lexographic strategy</td>
<td></td>
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<td></td>
<td>- Elimination by aspects strategy</td>
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</table>

### Single-phase versus two-phase decision process

The majority of existing decision theories/strategies involve one phase, that is, the consumer arrives at the final choice at the conclusion of the decision process. All normative decision models and the majority of behavioural models are single-phase choice focused models. A strength of the single-phase model is that it focuses on the final outcome of the consumer decision, that is, the choice the consumer makes. The major weakness is that one-phase theories do not adequately capture the ‘cradle to grave’ aspects of complex decisions processes, involving larger volumes of information (Payne 1976). Nor do single-phase models allow for a decision not to purchase. Single-phase models do not allow for multiple strategies to be utilised within a single decision process. To accommodate the complexity of the consumer decision process within a single-phase model, most theories impose constraints or assumptions on the model, for example, the economic or rational decision maker of normative and behavioural decision theory.

Since normative decision theory offers an idealised model (Orasanu and Connolly 1993), decision researchers (Edwards 1955, Kahneman and Tversky 1979, Tversky and Kahneman 1992) have modified the constructs of normative theory based on empirical data and produced a descriptive theory of decision making called behavioural decision theory (Beach and Mitchell 1998). Behavioural decision theorists found that consumer preferences are not invariant across procedures and descriptions, that is, they are constructed during the process (Bettman 1979, Bettman et al. 1998) and are contingent on the decision maker and decision task (Payne 1976, Beach and Mitchell 1978, Payne 1982, Bettman et al. 1998). This constructive view of decision-making is the major difference between behavioural and normative decision theory (Payne et al. 1992b). Although there are many decision models within these two decision theory groups, the decision process remains constrained by each theory’s underlying assumptions.

In response to the acknowledged weaknesses with a single-phase model Payne (1976) proposed a two-phase decision process. When faced with a large number of alternatives, the decision maker first uses less cognitively demanding decision strategies (e.g.: elimination by aspects) to eliminate unacceptable alternatives, thereby reducing the number of alternatives remaining in the choice decision. In the second phase, the decision maker may use more cognitively demanding decision strategies (e.g.: additive or additive difference) to choose between the remaining alternatives.
The two-phase decision model is more descriptive of actual decision behaviour than the one-phase decision model. It is less cognitively demanding and overcomes issues with other models in that it allows the use of different strategies at different times (Wright and Barbour 1977, Olshavsky 1979, Svenson 1979, Bettman and Park 1980, Corbin 1980, Montgomery 1989, Montgomery and Svenson 1989, Lopes 1995). One example of a two-phase decision-making model is ‘image theory’ (Beach and Mitchell 1987, Beach 1990, Beach and Mitchell 1990, Beach 1993, Beach 1998), an approach not yet used in marketing.

**Image theory and two-phase decision-making:**
Like behavioural decision theory, naturalistic decision theory has evolved as a result of researchers’ attempts to predict and describe actual decision behaviour. Unlike behavioural decision theory, naturalistic decision theory was built from observed decisions and does not retain normative constructs and assumptions. Researchers constructed naturalistic decision theory as a theory ‘less rooted in normative ideas and more rooted in observed decision behavior’ (Beach and Mitchell 1998: 4). Table 2 presents key differences between the three groups of decision theories to aid comparison.

**Table 2: Differences between normative, behavioural, and naturalistic decision theories.**

<table>
<thead>
<tr>
<th>Decision theory</th>
<th>Example</th>
<th>Normative constructs</th>
<th>Decision maker</th>
<th>Preferences</th>
<th>Decision process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normative</td>
<td>Expected utility theory</td>
<td>Retained</td>
<td>Rational</td>
<td>Constructed preferences</td>
<td>Single-phase</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Prospect theory</td>
<td>Retained &amp; Modified</td>
<td>Bounded Rationality</td>
<td>Constructive strategies</td>
<td>Contingent &amp; Phased</td>
</tr>
<tr>
<td>Naturalistic</td>
<td>Image theory</td>
<td>Not retained</td>
<td></td>
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</table>

Image theory is the most comprehensively and thoroughly developed naturalistic decision theory (Klein et al. 1993). Image theory proposes that decision makers have limited cognitive capacity (Simon 1955) and decisions are made within a decision frame (Beach 1993). Decision makers will limit their decision deliberations to that portion of knowledge that is stored and considered relevant to the current decision. According to image theory, this knowledge structure consists of three images: value image, trajectory image, and strategic image.

Image theory “recognizes that many decisions are best understood as expressive behavior, that is, actions taken not as means towards desired ends but to express or actualize cherished values and ideals” (Lipshitz 1993: 117). These values and ideals are represented in the three images of image theory. The three images guide decision making by proposing the notion of compatibility between the decision outcome and the decision maker’s relevant images, which are an expression of the characteristics of that decision maker. The decision maker’s values and principles (value image), that is, the established standards for decisions, relate to the decision goals being pursued (trajectory image) and the acceptable ways of pursuing these goals (strategic image), as illustrated in Figure 1 (Beach and Mitchell 1998). In turn, the decision maker’s
plan for actions (strategic image) is to realize the existing goals (trajectory image) and the realization of goals reinforce the decision maker’s central values and principles (value image) (Beach and Mitchell 1998). Thus, we have an interactive model with each image influencing the other two.

**Figure 1: The three images and decision-making.**

![Diagram of three images and decision-making](image)

Simply put, image theory uses a two-phase decision process incorporating a screening process to eliminate alternatives and a choice phase to select between those alternatives surviving the screening process. The screening process uses heuristics to eliminate those alternatives incompatible with the deciders ‘relevant images’, that is, those images that influence that decision. As illustrated in Figure 2, alternatives that are eliminated from the choice set have more mismatches to the relevant images than the decision maker can tolerate – they exceed the decision ‘rejection threshold’ (Beach and Mitchell 1998: 15). Alternatives that have fewer violations than the rejection threshold are included in the decision maker’s choice set for further consideration, probably using a different decision strategy. When the choice set contains only one alternative, this alternative will be automatically chosen. Thus image theory views the choice decision as a tiebreaker when more than one alternative survives screening (Beach 1998). This theory more closely represents the two-phase decision behaviour observed by Payne (1976) when he initially proposed the multi-phase model.

**Figure 2: Image theory and two-phase decision-making.**

![Diagram of image theory and two-phase decision-making](image)

Researchers argue that the decision makers’ own preferences are not well defined, as they lack the ability to identify the underlying drivers of their own preferences (West et al. 1996). An inexperienced consumer may fail to differentiate physically identical brands, by assuming that higher price means better quality and pay a higher price (van Osselaer and Alba 2000). A weakness is that since image theory research has focused on values, to date it has not incorporated the lack of decision maker’s expertise (Lipshitz 1993). To more fully reflect the actual decision process, the decision maker’s expertise must be built into image theory structure.
Why Image Theory for Understanding Consumer Decision Making?

Why are we proposing image theory for understanding consumer decision making when image theory has not, to our knowledge, been used in marketing previously? Do we need another theory? We contend that image theory will assist researchers to more accurately reflect the actual decision process that consumers use when choosing between product or service alternatives. If this is true, image theory will provide a valuable step forward in providing practicing marketers with a tool to reach and influence consumers. We contend that it will provide marketers with new insight into their customers’ decision processes and, thus, may encourage additional corporate funding of research. Our argument for image theory as a consumer decision theory can be summarised as follows:

Naturalistic decision theory studies decisions as they are made in real world settings and image theory is the most comprehensive and thoroughly developed naturalistic approach (Klein et al. 1993). Image theory is multi-phased, incorporating screening and choice processes while allowing for different strategies within and between phases, that is, a contingent selection of strategies (Beach and Mitchell 1978).

Image theory reflects the underlying values and ‘images’ that influence decision making, while allowing for varying influence of those images in different decision contexts. Image theory recognizes that in a complex decision environment the consumer must reduce complexity by eliminating some of the alternatives using heuristics. Choosing the heuristic to eliminate unimportant information is selective, based on the individual’s core values, as reflected in their specific set of images. The choice phase reflects the selection of one alternative from amongst those that survive the screening process. It may be simple or quite analytical, depending on the importance of the decision, the number of alternatives surviving the screening process and the complexity of the available information.

Thus, we argue that image theory has a valuable contribution to make to the marketing literature in that it brings together the divergent theories of decision making and applies them where and when appropriate. It does not supersede other theory, rather it incorporates them and allows those theories freedom to operate where and when they reflect the actual decision behaviour of consumers. Image theory adds value by reflecting consumers’ varying strategies for the same decision in different contexts and times, without violating the underlying theoretical assumptions and invalidating the results. As image theory has been developed from observing actual consumer decisions it more closely reflects the reality of our marketplace. Thus, we believe image theory can add value to our understanding of consumer decision-making.
Future Directions for Research

It is very important for marketers and researchers to develop an understanding of consumers in different decision contexts. We need to utilise broader based methodologies to enable us to break out of a single-context focus and examine the consumer decision process across decision environments. While single-context theories have value and may be considered the building blocks for a more comprehensive theory, it is time, after 50 years, to begin to build that broader understanding. This paper provides one approach to building a comprehensive understanding of consumer decision theory.

Since image theory proposed the relationship between images and decision-making, empirical research has been based in organization behaviour literature and has focused primarily on testing the screening mechanism – the compatibility test (Beach and Strom 1989, van Zee et al. 1992, Potter and Beach 1994a, Potter and Beach 1994b, Beach et al. 1996, Benson and Beach 1996). More recently, research has extended into investigation of how images guide organizational and individual decision-making (Nelson and Puto 1998, Stevens 1998, Weatherly and Beach 1998). One study in socially responsible consumer decision making has been identified (Nelson and Puto 1998). We believe image theory can make a valuable contribution to our understanding of consumer decision theory from a marketing perspective and encourage researchers to pursue decision research using image theory models.

Image theory adopts a cognitive perspective of decision making using images as models of the outside world that consumers create within their minds (Hastie and Pennington, 1995). Because mental models are mediators of environment-behaviour relationships, we must study the images in order to predict and explain consumer behaviour (Hastie and Pennington, 1995). In the same way, future research needs to address how images are interconnected and organized in the mind of a competent decision maker, how this hypothesized network of the images is built up over time, and whether or not the network is empirically supported (Connolly and Beach 1995). We also need to expand that research to incorporate different levels of competency in decision-making (inexperienced to experienced) and how that affects the hypothesized network of images.

Image theory research (Beach and Strom 1989, van Zee et al. 1992, Potter and Beach 1994a, Potter and Beach 1994b, Benson and Beach 1996) has assumed a hypothetical person, whose relevant images are well established, to be able to identify the relevant attributes and to determine whether a relevant attribute fails to meet a pre-determined standard. Results from these studies supported the prediction that decision makers have a consistent rejection threshold in order to obtain a choice set compatible with their relevant images. Since images are knowledge structures, with low product familiarity, the decision maker may not have his/her relevant images fully developed for the decision at hand and may not have established their pre-determined standard. Thus we need further research into how knowledge (images) and search behaviour interact to produce a decision process for experienced and inexperienced decision makers in different contexts. We also need to understand how that knowledge carries through to the choice process and the selection of strategies for choice decisions.
Further, do screening strategies influence the selection of choice strategies and what is the influence of different context-derived screening strategy selection on the subsequent choice strategy? This is a rich area for future research.

Beach (1998) also pointed out that the decision maker may not have a clear definition about what constitutes a violation or a non-violation for a continuous attribute. So far, there has been no research to determine how decision makers, with varying degrees of prior knowledge, conduct the screening process. The validity of a consistent rejection threshold has not yet been tested across multiple decision situations due to the recent development of image theory. To date, artificially holding constant the decision threshold of a hypothetical decision maker has yielded valuable results. What happens to that knowledge when we relax the artificial constraint to more accurately reflect the ‘real world’ decision environment? We believe that the rejection threshold is not constant across contexts, time or product categories – this is yet to be empirically tested.

The newness of image theory to marketing, the complexity of the consumer decision process and the desire for our models to more accurately reflect how people make decisions provides a rich arena for future marketing research. We look forward to the journey.

Conclusions

There is a great need for researchers to develop a broader understanding of the consumer decision making process to provide greater understanding of actual decisions that face consumers, in a variety of decision contexts, on a daily basis. We do not need more insular theory, explored in ever-increasing depth. We need a broader understanding of the scope of consumer decision-making and an understanding of which strategy consumers utilise in different decision contexts. This requires a broad methodology that allows for empirical research across decision settings, while identifying which decision strategy is being employed in each context. It also requires a clear set of guidelines for capturing the decision context for future across study comparability.

We need to be able to connect to the business world’s need for guidance and predictability in consumer behaviour, to enable them to utilise our consumer decision-making theory in the real world. Marketers must make resource allocation and promotion decisions to influence consumer decision-making. Unless we, as academics, provide understanding and guidance to marketers, we will become increasingly irrelevant to the business world. This would be a missed opportunity as researchers are becoming more reliant on business to fund their activities in an era when government funding is decreasing.

From a marketer’s perspective, when consumers use a non-compensatory strategy, a negative attribute can eliminate a brand during the screening process and it will not survive to be a candidate for choice by the consumer. Marketing managers need to understand the decision strategies and attributes that are important to customers in different decision contexts and phases, then they need to benchmark the consumer perceptions of the performance on these attributes against competitors to ensure their
product/brand is not eliminated prior to the choice being made. This approach will provide additional insight into consumer perceptions and the product’s positioning relative to its competition.

We believe that image theory provides a broad, robust approach to understanding the different decision strategies of consumers and that it will assist us in understanding how the divergent theories have developed and where they fit within the ‘bigger picture’.
References


Weatherly, K. A. and Beach, L. R. (1998) Organizational culture and decision making, In *Image theory: theoretical and empirical foundations* (Ed,


### Appendix 1: Characteristics of Decision Strategies

<table>
<thead>
<tr>
<th>Decision Theory</th>
<th>Model Type</th>
<th>Decision strategy</th>
<th>Extensive/Limited</th>
<th>Consistent/Selective</th>
<th>Alternative/Attribute</th>
<th>Compensatory/Non-compensatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normative Choice Models under Risk</td>
<td>Expected utility</td>
<td>Extensive</td>
<td>Consistent</td>
<td>Alternative</td>
<td>Compensatory</td>
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<tr>
<td></td>
<td>Subjective expected utility</td>
<td>Extensive</td>
<td>Consistent</td>
<td>Alternative</td>
<td>Compensatory</td>
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</tr>
<tr>
<td></td>
<td>Prospect theory</td>
<td>Extensive</td>
<td>Consistent</td>
<td>Alternative</td>
<td>Compensatory</td>
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<tr>
<td></td>
<td>Weighted adding strategy</td>
<td>Extensive</td>
<td>Consistent</td>
<td>Alternative</td>
<td>Compensatory</td>
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<td></td>
<td>Equal weight strategy</td>
<td>Extensive</td>
<td>Consistent</td>
<td>Alternative</td>
<td>Compensatory</td>
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<tr>
<td></td>
<td>Majority of confirming dimensions strategy</td>
<td>Extensive</td>
<td>Consistent</td>
<td>Alternative</td>
<td>Compensatory</td>
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<tr>
<td></td>
<td>Lexicographic strategy</td>
<td>Limited</td>
<td>Selective</td>
<td>Attribute</td>
<td>Non-compensatory</td>
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<td></td>
<td>Satisficing strategy</td>
<td>Variable</td>
<td>Selective</td>
<td>Alternative</td>
<td>Non-compensatory</td>
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<tr>
<td></td>
<td>Elimination by aspects strategy</td>
<td>Variable</td>
<td>Selective</td>
<td>Attribute</td>
<td>Non-compensatory</td>
<td></td>
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<tr>
<td></td>
<td>Conjunctive strategy</td>
<td>Extensive</td>
<td>Selective</td>
<td>Alternative</td>
<td>Non-compensatory</td>
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<tr>
<td></td>
<td>Disjunctive strategy</td>
<td>Extensive</td>
<td>Selective</td>
<td>Alternative</td>
<td>Non-compensatory</td>
<td></td>
</tr>
<tr>
<td>Behavioural Riskless Choice Models</td>
<td>Situation assessment model</td>
<td>Decision timeframe</td>
<td>Selective</td>
<td>Both</td>
<td>Both</td>
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<td></td>
<td>Recognition-primed decisions</td>
<td>Changes in different contexts</td>
<td>Selective</td>
<td>Both</td>
<td>Both</td>
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<td></td>
<td>Explanation-based decisions</td>
<td></td>
<td>Selective</td>
<td>Both</td>
<td>Both</td>
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<td></td>
<td>Dominance search model</td>
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<td>Both</td>
<td>Both</td>
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<tr>
<td></td>
<td>Image theory</td>
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These models do not utilize this theoretical construct.