

**CONSUMER DECISION-MAKING DEPENDENCY ACROSS THE LIFE-SPAN:
A PERCEIVED CONTROL PERSPECTIVE**

BY

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DOCTOR OF PHILOSOPHY

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**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of
Manitoba in partial fulfillment of the requirements for the degree of**

DOCTOR OF PHILOSOPHY

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Abstract

Previous consumer research studies have shown that consumers do not always retain full control over their decisions. Rather, they make some purchases under partial or even full dependence upon some outside source(s) of influence. Results from these studies, as well as other elements of the consumer research literature, the perceived control literature, and aspects of the gerontological literature were integrated in an attempt to provide a previously missing theoretical explanation for this consumer decision dependency. The perceived control and gerontological literatures provide evidence that certain types of control-related decision dependency behaviors, Primary Control and Harmony Control, of younger and older adult consumers might be different. The purpose of this dissertation was to articulate and test a theoretical model of control-related dependency in decision making.

A 3 (age group) x 2 (motivation level) x 2 (ability level) experiment was conducted among young, middle, and older adults. There were 48 subjects per age group. Genders were evenly represented. Expertise and Need for Cognition were covariates.

Subjects preferred Primary control to Harmony control. Decision Motivation and self-perceived decision Ability interacted, in that Primary control scores were higher for high-ability subjects making important decisions. There was also an interaction of Motivation and Need for Cognition: Primary control scores were higher for high Need for Cognition, high-Motivation subjects. Older adults scored higher on Primary control than young or middle-aged adults.

For Harmony control, high levels of Motivation led to increased Harmony control-related decision behavior. Follow-up analysis revealed a marginally significant interaction in that Low-ability subjects faced with an important decision scored highest on Harmony control. There was an interaction of Age and Motivation on Harmony control. The age groups did not differ in the low-motivation condition; however, in the high-Motivation condition, older adults scored significantly lower in Harmony control than the younger groups.

Finally, Age-related differences were found on the four dimensions of Harmony control. Older adults scored lower than their younger peers on the "Rely on Others," "Gain Support and Approval," and "Higher Power" dimensions. They scored higher, however, on the "Wait on Luck" dimension.

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Chapter I

Introduction

One of the most significant demographic trends affecting North American business is that older adults comprise an ever-increasing proportion of many consumer markets. For example, in the United States, in the early 1990s adults over 50 years of age represented 27 per cent of the population, and this percentage will climb to 32 per cent by the year 2010 and to 36 per cent by 2025. Meanwhile, the number of young adults in the 25-to-34 year age group has declined since 1990 (Day, 1996). Members of this growing population of older adults represent an attractive market, and will continue to be active consumers. People over 50 control 75 per cent of the net worth of U.S. households, and personal income peaks between the ages of 55 and 60 years (Day, 1996). For many products and services, older adult Americans spend more per capita than their younger counterparts. Adults in the 65-to-74 year-old category outspend 25-to-34 year-olds on housing, major appliances, personal care, women's clothing, new vehicles, and gifts (Russell, 1997). Marketers in other categories, for example life insurance and financial products, are attempting to change and position their products to meet the needs of this attractive market (Stein, 1996).

There is widespread agreement about the importance of more effectively targeting and communicating with older adult consumers. Attempts in marketing and consumer behavior research to increase understanding of older adults have included cross-disciplinary examinations of age-related cognitive and behavioral change, with an eye to strategy

development (Moschis, 1992), literature reviews (e.g., John and Cole, 1986; Phillips and Sternthal, 1977), research on age-related changes in roles (e.g., Greco, 1989; Tepper, 1994), and studies of cognitive change (e.g., Cole and Gaeth, 1990; Cole and Houston, 1987). More recently, Law, Hawkins, and Craik (1998) assessed older consumers' responsiveness to a marketing variable, repetition, and whether certain types of processing strategies might have a differential effect on that responsiveness. Yoon (1997) has examined age-related differences in consumers' processing strategies from the perspective of life-span developmental theory, an approach in which aging is viewed, in part, as a course of adaptive, qualitative (not simply quantitative) change in processing strategies. The life-span developmental perspective, which derives from the gerontological literature (e.g., Adams, 1991; Adams, Labouvie-Vief, Hobart, and Dorosz, 1990; Adams, Smith, Nyquist and Perlmutter, 1997; Labouvie-Vief and Schell, 1982), holds that information processing strategies do change with age, and suggests that investigation of this change is important to a greater understanding of the older adult consumer market.

One context in which an understanding of processing strategy change seems particularly important is that of consumer decision making. Though consumer decision making has been studied extensively, a question which remains to be addressed by researchers is whether certain types of decision-related behaviors of younger and older adult consumers might be different. One purpose of this study is to examine this possibility.

Consumer Decision-Making Styles

For each purchase, regardless of consumer age, a purchase decision is made, and a variety of associated behaviors can occur. Olshavsky and his colleagues (Formisano, Olshavsky, and Tapp, 1982; Olshavsky and Granbois, 1979; Olshavsky and Rosen, 1985; Rosen and Olshavsky, 1987a, 1987b) demonstrated that certain types of these behaviors evidence varying degrees of dependency on outside sources of influence, and that consumer decisions can be categorized by level of this dependency. Olshavsky and his colleagues demonstrated that consumers may make decisions *autonomously*, while *hybrid* and *subcontracted* decisions are, respectively, decision styles (or types) in which consumers partially or totally give up control over the decision by soliciting help (e.g., from a salesperson, friend, relative, or the published report of a product testing agency). A subcontracted decision, for example, might be one in which the consumer allows a salesperson to make his/her purchase choice. In hybrid decision making, a consumer might confine his or her information search and purchase choice to only those brands recommended by one or more referrers. Though Olshavsky and his colleagues identified a variety of circumstances under which hybrid and subcontracted decision behaviors might be observed, this research represents the first attempt to develop a theoretical explanation for the occurrence of dependency-related decision-making styles.

A Perceived Control Perspective on Decision Types

There are striking parallels between autonomous, hybrid, and subcontracted decision behaviors and similar categories identified by psychologists studying perceived control (see Morling and Fiske, 1999; Rothbaum, Weisz, and Snyder, 1982). First, in achievement situations (such as consumer decisions), people engage in primary, harmony, or combined control-related behaviors. Primary control-related behaviors are those in which the self is the controlling agent. Harmony control-related behaviors, on the other hand, indicate a purposeful transfer of primary control to, that is, dependency upon, an external agent (e.g., an expert, a deity, or even luck). Further, the decision-related behaviors identified by Olshavsky and his colleagues as being indicative of autonomous, hybrid, and subcontracted decision types are, likewise, representative of the different categories of control-related behavior as they are described in the perceived control literature. This dissertation takes the position that perceived control theory may, therefore, be useful for understanding and explaining the occurrence of such different categories of consumer decision behaviors.

Older Adults and Decision-Making Behavior

The perceived control and gerontological literatures both indicate that younger and older adults may differ in the degree to which they employ primary and harmony control-related behavior and, therefore, in their decision-making styles. According to the life-span developmental perspective, these differences do not arise due to losses in the capacity for exercising primary control, but may instead be a manifestation of adaptive changes that

occur in the composition of older adults' repertoires of control-related behaviors. The perceived control literature provides evidence that older adults continue to value and employ primary control; however, they seem also to have developed a greater capacity for the use of harmony control tactics (see Brantstadter and Rothermund, 1994).

The purpose of this dissertation is to propose and test a model of control-related decision styles. In Chapter II, a theoretical model that attempts to explain the occurrence of control-related decision behaviors, as well as the hypotheses to be tested, is presented. The data collection methodology used is presented in Chapter III. Analyses and results are described in Chapter IV. Finally, implications for managers and directions for future research will be discussed in Chapter V.

Chapter II

Theory Development

The purpose of this Chapter is three-fold. First, a theoretical model will be developed which attempts to explain qualitative differences in purchasing behavior like those observed by Olshavsky and his colleagues. Model development will entail a review of relevant consumer behavior literature, a review of the perceived control literature that is applicable to decision making, and a review of the psychological and gerontological literatures that espouse a life-span view on human development and behavior. Following this will be identification of the aspects of the model that will be the focus of the research presented here. Third will be the presentation of the hypotheses to be tested.

Dependence and Independence in Consumer Decisions

A number of studies have investigated a variety of topics associated with consumer decision making. Much of this research concerns issues relevant to commonly accepted consumer decision models, e.g., Engel, Kollat, and Blackwell's five-stage model (1968; see also Engel, Blackwell, and Kollat, 1978). Decision research topics have included information search (as described by degree, direction, and sequence of search activities; e.g., Furse, Punj, and Stewart, 1984; Midgley, 1983), evaluation of alternatives (according to attributes of the alternatives on salient criteria; e.g., Bettman and Sujan, 1987; Dodd, Monroe, and Grewal, 1991), and choice (made according to preferred decision rules; see

Bettman, 1979, Ch. 7 for a detailed discussion of decision rules). In this and similar literature, the consumer is considered to be an independent thinker, who makes his/her purchases after a problem solving/choice process (i.e., a decision process) which may be described as ranging between habitual (limited) and extended in nature (Engel, Blackwell, and Miniard, 1993; Howard and Sheth, 1969).

In his presidential address to the Association for Consumer Research, Kassarian (1978) challenged the assumption that such choice processes precede all consumer purchases. Olshavsky and Granbois (1979) echoed Kassarian, presenting evidence that there may be purchases for which no prepurchase decision process exists. Olshavsky and Granbois did not simply reiterate that choices may be made habitually (i.e., based upon relevant information stored in memory). Nor did they focus on trivial examples of such “no-decision” purchases, wherein the lack of a pre-purchase decision process results simply from a lack of alternative choices (e.g., purchases of service provided by an electrical or cable television company granted a monopoly). Instead they showed (a) that consumers do not always conduct comprehensive search or evaluation processes even when alternatives are available and the individual does not, a priori, possess full information, and (b) that consumers do not always act independently in decision making, i.e., consumers may allow others to fully or partially make their purchase decisions for them. Kassarian’s address and Olshavsky’s work together suggested that, while decision-making processes (e.g., search, evaluation, choice) represented important topics for study, researchers may have inadvertently ignored the possibility that there may be fundamentally different types of purchase decisions.

Decision behavior such as that in (a) above may be accounted for by considering the influence of decision heuristics, such as the availability and representativeness heuristics, and the conjunction fallacy (see Kahneman and Tversky, 1982; Tversky and Kahneman, 1973). These heuristics can have an abbreviating effect on search and evaluation processes via the mediating role of reduced risk perceptions (Folkes, 1988; Lutz and Reilly 1974; Roselius 1971; Sheth and Venkatesan 1968; Taylor 1974). These heuristics are not, however, helpful in explaining dependent decisions such as those suggested in (b) above, in which the issue is not simply the degree to which a decision process is or is not *conducted*, but the degree to which it is or is not *controlled* by the consumer him/herself.

In their subsequent research, Olshavsky and his colleagues (Formisano, Olshavsky, and Tapp, 1982; Olshavsky and Rosen, 1985; Rosen and Olshavsky, 1987a, 1987b) directed their focus away from degree of search and evaluation, and articulated additional empirical evidence that many decision processes are not self-directed. They showed that consumers make some purchases under partial or even full reliance upon some outside source of influence. Such reliance may take the form of advice, or an informational or (social) normative recommendation for choice, as opposed to utilization of the referrer simply as a source of information to be used in a self-directed decision process (see Olshavsky and Rosen, 1985, p. 120). Thus, these decision processes are not different by degree, but by type (cf. Furse, Punj, and Stewart, 1984, for a typology of search strategies). Olshavsky and his colleagues coined the terms “hybrid” and “subcontracted” (as contrasted with “autonomous”) decision making to describe decision processes wherein a consumer exhibits, respectively, partial or complete dependency upon some outside source(s) (e.g.,

friends, social groups or group leaders, salespersons, a product testing agency) for advice, search, evaluation, or choice. Hybrid and subcontracted decision making became the primary focus of Olshavsky's research stream.

Exploratory investigation proceeded on a variety of issues associated with such behavior, such as what contextual factors might be associated with hybrid or subcontracted decision making, who consumers choose as referrers, and whether there might be different forms of the hybrid strategy. For example, Formisano et al. (1982) studied choice strategy in what they termed a "difficult task environment," which they defined as one that is characterized by (a) a large number of alternatives, (b) information on a large number of attributes about each alternative presented in a format that does not lend itself to easy use, and (c) a product or service that is inherently complex (see Olshavsky and Smith, 1980, for a taxonomy of choice environments). They found that seventy-one per cent of their sample of life insurance purchasers had "bought the life-insurance policy that the salesperson recommended...." (Formisano et al., p. 477), supporting their hypotheses of decision dependency. Other referrers included parents, friends, and other sources, such as accountants, bank officers, and relatives. This study also revealed that, in terms of consumer attributes, "older, lower income life insurance buyers with little training in the area, who are approached by life-insurance salespeople initially are predictably non-decision makers (p. 477)."

In an experimental study, Olshavsky and Rosen (1985) pointed out that previous laboratory research had been based upon the traditional decision-making model and, thus, had not incorporated procedures that allow the observation of subcontracted or hybrid

decision strategies (e.g., Bettman and Jacoby, 1976; Jacoby, Chestnut, and Fisher, 1976; Jacoby, Chestnut, Weigl, and Fisher, 1976; Jacoby, Speller, and Berning, 1974; Moore and Lehmann, 1980; Olshavsky, 1979; all cited in Olshavsky and Rosen, 1985). In their laboratory study, Olshavsky and Rosen (1985) found that recommendation-type information is used by some subjects to simplify the choice process. Of the alternative sources they included in the study, subjects most commonly acquired recommendations from friends, *Consumer Reports*, and salespersons. These recommendations served to reduce the number of brands evaluated and to reduce the amount of attribute-value information acquired, consistent with a hybrid form of decision making.

In similar experimental studies, Rosen and Olshavsky (1987a, 1987b) utilized process-tracing and protocol analysis techniques (respectively) to identify different forms of the hybrid strategy. Two such strategies are "Recommendation Forms Evoked Set" and "Recommendation Forms Standard" (RFES and RFS, respectively; Rosen and Olshavsky, 1987b). RFES subjects solicit brand name recommendations, which then form the consideration set, and confine their evaluative activities and choice selection to those brands. RFS subjects, on the other hand, solicit a single recommendation. This brand becomes the standard against which all additionally considered brands are compared. Rosen and Olshavsky found that RFES subjects acquired significantly less information than "own-based subjects" (i.e., autonomous decision makers); however, those utilizing an RFS strategy needed to acquire considerable information in their efforts to find a better alternative than the standard.

Research conducted by Olshavsky and his colleagues provides substantial evidence that fundamentally different decision-making styles exist. Their research program called attention to the fact that then-current decision-making theory did not extend to dependent decision types. To date, despite Olshavsky et al.'s work, the fundamental issues associated with decision-making dependency remain largely unresolved. Recent research investigating such topics as the relationship between search activity and prior brand experience (e.g., Moorthy, Ratchford, and Talukdar, 1997), choice preference for an incumbent brand (e.g., Muthukrishnan, 1995), and preference for a no-choice option (e.g., Dhar, 1997; Luce, 1998) evidences a continued commitment on the part of researchers to the notion of a self-directed (i.e., autonomous) decision process. Dhar (1997), for example, found increases in the no-choice option with increasing similarity in attractiveness between alternatives. His design offered subjects the opportunity to (a) make a choice between alternatives based upon the information provided, (b) collect more information, or (c) look for new alternatives. Options (b) and (c) were interpreted as "no-choice" behavior. There was, however, no option to acquire recommendation information.

Olshavsky's research results strongly suggest that a significant number of Dhar's (1997) subjects may have opted away from "no-choice," and toward subcontracting or hybrid options, had such options been available. It may be, however, that current choice research does not include subcontracting or hybrid options because no theory exists to adequately describe and explain dependent decision behavior. Though we know consumers sometimes succumb to or seek out external influence in their decisions, and we have evidence regarding factors and contexts that might predict such behavior, we have yet to

account, in a theoretical sense, for consumers' tendency to relinquish a degree of control to others in decision making. To presume that such behavior is simply an attempt to reduce risk is too simplistic (i.e., that high perceived risk leads to hybrid or subcontracted decision making); there are multiple ways to reduce risk perceptions, one of them being to personally conduct a more comprehensive search and evaluation process (see Folkes, 1988). Nor is it reasonable to presume that hybrid or subcontracted decisions occur only for unimportant purchases; Formisano et al. (1982; p. 476) noted that, on average, their sample of insurance buyers rated "the purchase of life insurance higher in importance than the purchase of either cars or dental checkups."

Instead, this dissertation takes a position consistent with Punj and Stewart (1983), who advocate that behavior is a function of situational variables, task-related variables, individual variables, and their interaction. In particular, it asserts that a primary consumer objective in important purchase decision situations is to maintain perceptions of control (see following section) by achieving a good decision. This assertion is consistent with Festinger's (1950) statement that people are motivated to hold correct attitudes (see also Petty and Cacioppo, 1986a). The means by which different consumers attempt to achieve a perception of control vary, however, according to an interaction of situational (e.g., time available for search and evaluation), task-related (e.g., product complexity), and individual variables (e.g., perceptions of decision-making self-efficacy). These "means" represent different decision-making types or styles, which Olshavsky and his colleagues termed autonomous, hybrid, or subcontracted decisions - the behavioral indicants of which are also indicators of categories of control-related behaviors. Thus, to explain dependency in

decision making, it may be useful to develop a theoretical model of control-related decision behavior that encompasses the variety of variable categories identified above.

This dissertation takes, as a point of departure, Olshavsky's demonstration that consumer decisions vary by the degree to which the self is the controlling decision agent. While ensuing sections establish a conceptual connection between consumer decision and control-related behaviors, the focus is not on these behaviors but on the explanation of decision-making dependency itself. As such, it is an examination of control-related purchase decision types, and represents an attempt to identify and model variables that might explain the occurrence of these different types of decisions.

The sections that follow attempt to "lay the groundwork" for a theoretical model of control-related dependency in decision making. They begin with a presentation of the perceived control construct, the importance of control perceptions in human functioning, a discussion of the variety of behaviors that can lead to a perception of control, and an examination of perceived control over the life-span. They go on to show how both the hybrid and subcontracting behaviors observed by Olshavsky and his colleagues, as well as control-related behaviors in consumer decision making, have as their focus the issues of dependency and independence. Subsequent sections go on to more fully describe the conditions under which dependency in decision making can be expected to occur.

Perceived Control and Control-Related Behavior Across the Life-Span

Perceived control theory supports an extensive body of literature spanning a variety of disciplines. Perceived control is defined here as *the judgment* that outcomes of important events in one's life are or can be regulated or predicted, either by the self or by some social, spiritual, or cosmic force (see Morling and Fiske, 1996, 1999; Perry, 1991; Rothbaum, Weisz, and Snyder, 1982; see also Skinner, 1996 for an extensive review of the perceived control construct). An underlying commonality across studies has been confirmation that people strongly desire the perception of control in achievement situations, and can be expected to respond with behaviors they believe will enable them to gain or maintain a perception of control. Favorable effects of having a perception of control in such situations have been shown in a variety of domains, including (among others) aging (e.g., Burns and Seligman, 1989; Menec and Chipperfield, 1997a, 1997b; Rodin, Timko, and Harris, 1985), academic achievement (e.g., Covington, 1993; Covington and Omelich, 1979, 1985; Menec et al., 1994; Perry, 1991), stress, health, and health maintenance (e.g., Helgeson, 1992; Schiaffino and Revenson, 1992; Taylor, 1990; Thompson et al., 1993), and search for and use of information in job hunting (e.g., Friedrich, 1987).

As implied above, it is important to emphasize the term "perceived," because the perception of control is a cognitive judgment about a focal situation, rather than simply an activity directed toward it. In fact, the conceptual separation of the perception of control from antecedent behaviors which cause it has led psychologists to study and attempt to classify those behaviors (e.g., Averill, 1973). Most widely accepted and confirmed is

Rothbaum, Weisz, and Snyder's (1982) proposal that there are two such broad classes of behavioral contributors to the perception of control: *primary* control-related behaviors and *secondary* control-related behaviors. A recent addition to this behavioral literature is Morling and Fiske's (1996, 1999) *harmony control* (HC), a construct that both encompasses and adds to the scope of the secondary control construct. These forms of control-related behaviors will be examined in turn below. The section will conclude with a review of relevant age-related issues in perceived control and control-related behavior.

Primary Control-Related Behaviors

Primary control-related behaviors are attempts to change salient aspects of the world to fit the needs and desires of the individual (Rothbaum et al., 1982). As such, they indicate independence and autonomy in goal-oriented situations. When people engage in primary control-related behaviors, they act for themselves in an attempt to alter realities to get what they want. People may change things outside of themselves, such as when they turn off a loud noise, or they may actively try to engage in or change their self-determined behavior, such as when a person makes a decision to control his/her eating (see Morling and Fiske, 1999). Consequently, primary control-related behaviors indicate a person's exercise of direction (i.e., "control") over some object, where "object" can refer to a tangible thing, such as a volume control knob, or an intangible thing, such as a decision or decision process. It is to this class of behaviors common usage of the term "control" refers, and it is to this class that marketing researchers have limited themselves in their use of the perceived control construct. Hui and Bateson (1991) found that increasing decisional

control for banking customers led to higher levels of client satisfaction, perceptions of greater service quality, and strengthened client loyalty. Rather than examine customers' personal control perceptions, S. Taylor (1995, see also S. Taylor, 1994) studied effects of their control attributions. She found that clients reacted less negatively to long waiting times when they perceived that the service provider's control over those waiting times was low.

Secondary Control-Related Behaviors

Secondary control-related behaviors are defined as attempts to change the self to fit with perceived realities of the environment. They are activities designed to enable maintenance of control perceptions in circumstances wherein primary control is unattractive, or, is judged desirable but impossible. As such, they indicate a perceived lack of capacity for independent, autonomous action on a focal situation. Four categories of secondary control-related behaviors were originally described (Rothbaum et al., 1982): predictive control, vicarious control, illusory control, and interpretive control.

Predictive Control. A desire for predictive control evidences an expectation of personal failure in primary control attempts and implies the attribution of such expected failure to limited ability (Rothbaum et al., pp. 12-16). A desire for predictive control can result in behavior of two types. First, there may be an active attempt to avoid disappointment. The person attempts to maintain a perception of control by (a) both predicting and explaining his/her inability to bring about the desired outcome, and (b) altering his/her plans or aspirations to fit with possible outcomes. Such behavior might

manifest itself as “preparing for the worst,” as could occur, for example, as a parent awaits news about the results of their child’s surgical procedure. Second, perceptions of control can also be bolstered when individuals are able to “know what to expect.” In this case, predictive control behavior takes the form of a search for information regarding possible outcomes for the focal situation. As might be expected, these behaviors frequently occur together. For example, persons often attempt to predict the likelihood of best and worst-case scenarios, and construct contingency plans.

Vicarious Control. Vicarious control behavior refers to alignment with or submission to a “powerful other,” for example, a powerful leader, a group, or a deity. This alignment or submission enables the person to “join in their power” (Rothbaum et al., pp. 20-21). Rothbaum et al. did not intend identification with a powerful other to be construed as instrumental in goal attainment, for example, as would occur when a person asks for help with a task he or she cannot personally accomplish. Their belief was that such behavior represents a primary control attempt. Rather, identification is desired for its own sake, as is illustrated by the sports fan whose perceptions of personal power ride up and down with the fortunes of the team, or the child whose self-worth is enhanced by asserting “my daddy is stronger than your daddy.” Subsequent research has indicated, however, that requesting the aid of a powerful other should indeed be considered a form of secondary (and not primary) control-related behavior, for at least two reasons. First, the individual introspectively recognizes that s/he cannot personally orchestrate an appropriate primary control response. Second, s/he then (to some degree) relinquishes primary control, but *maintains the perception of control* (see Heckhausen and Schulz, 1994, 1995; Morling and Fiske, 1999;

Schulz and Heckhausen, 1996; Thompson et al., 1993). Thus, vicarious control behaviors can indicate a lack of independence, the presence of dependence, or both with respect to achieving a desired outcome.

Illusory Control. Illusory control behaviors evidence the perception that chance is a personal characteristic akin to ability (Rothbaum et al., pp. 16-20). Individuals who make attributions to chance may exhibit passivity and withdrawal in achievement situations. They channel their emotional investment in such situations into beliefs in their perceived strength - being lucky. "Lucky" individuals prefer to view goals that are actually best achieved through reasoned and purposeful action as, instead, determined by fate, and thus might proceed through achievement situations flippantly. In this regard, lucky individuals consider themselves to be "aligned" with fate or luck (as a supernatural entity), so that they can trust that a desirable outcome will be orchestrated on their behalf. Thus, illusory control can be considered a special form of (dependent) vicarious control.

Interpretive Control. Finally, any or all of the previous three can foster interpretive control, a control behavior in which the individual seeks to understand and derive meaning from otherwise uncontrollable events, and their outcomes, in order to accept them (Rothbaum et al., pp. 24-27). People derive a sense of control from the achievement of meaning and from the freedom to choose to accept or reject a particular meaning. Interpretive control can be illustrated by our desire to explain our failures, for example, the conclusion that "it was just not meant to be." This sort of inference evidences an attribution of primary control to some powerful other, such as God or fate. Alternatively, we might

choose to reevaluate an unfavorable outcome in a positive light (Rothbaum et al., p. 25), for example, concluding that making a bad choice will help us to “know better next time.”

Relationship Between Primary and Secondary Control-Related Behaviors

Traditionally, the terms “primary” and “secondary” have been understood to indicate the order in which these two categories of control-related behaviors are preferred (see Heckhausen and Schulz, 1995; Rothbaum et al. 1982). According to this view, secondary control-related behaviors become important when primary attempts have failed or are expected to fail, and are particularly important in maintaining a sense of control *in* a situation when control *over* the situation is judged to be impossible or impractical.

Following this reasoning, an implicit assumption in the perceived control literature has been that primary and secondary control-related behaviors vary inversely with one another. According to this view, increases in secondary control behaviors should occur only in conjunction with reduced primary control behavior. However, as is described in the following paragraphs, the evidence against the universality of this presumption exists within the perceived control literature itself, and suggests the necessity of reconsidering our understanding of these different control-related behaviors and their relationship. Morling and Fiske (1999) have taken an important first step in their research investigating harmony control, a construct that encompasses and adds to the scope of secondary control.

Harmony Control-Related Behaviors

Harmony control (HC) refers to the purposeful transfer of (autonomous/primary) control and agency from oneself to some external context of social, spiritual, or cosmic forces due to cultural, personal, or situational reasons (Morling and Fiske, 1999). Morling and Fiske make explicit (and demonstrate) the fact that dependent behavior can lead to a perception of control, and that such behavior may be preferred over primary, autonomous, behavior. Based upon empirical evidence to the contrary, they dispense with the requirement that failed primary efforts have occurred. Harmony control-related behaviors can indeed be engaged after or in anticipation of failed primary control attempts (i.e., in a “secondary,” or compensatory, sense). They may, however, also occur in conjunction with or even instead of primary control attempts, without failure experiences, and are equally instrumental in the maintenance of control perceptions (for examples of each of these possible outcomes, see Heckhausen and Schulz, 1995; Schulz and Heckhausen, 1996; Schulz, Heckhausen, and Locher, 1991; Thompson, Collins, Newcomb, and Hunt, 1996; Thompson, Nanni, and Levine, 1994). In sum, these research results point toward an independent, rather than an inverse, relationship between the two categories of control-related behavior. Morling and Fiske’s (1996, 1999) research strongly supports this prediction of independence, showing in three of four samples that measures of Harmony control are uncorrelated with two different measures of primary control (a subsample of the fourth sample evinced a moderate negative relationship with one of the primary control measures).

Morling and Fiske's overall results, from over 2,300 community and student participants in seven samples, show that the HC scale meets traditional psychometric standards for reliability as well as for predictive, discriminant, and convergent (construct) validity (see Morling and Fiske, 1999, for details of scale development, reduction, and purification). Exploratory and confirmatory factor analyses reveal that the final scale of 22 items is made up of five factors. "Higher Power" includes six items that refer to the influence of some higher power, including a deity or fate. "Friends Care" is a factor comprised of six items capturing perceptions of trust in interested others for instrumental support in decisions or need fulfillment. The "Anticipate Others" factor includes four items capturing perceptions of social advantage in proactively meeting others' needs. "Merge with Others" includes two items that pertain to becoming absorbed in others to the point of forgetting one's own wants. Finally, the four items of the "Wait on Luck" factor captures perceptions of the importance of good fortune in determining outcomes. The collection of items and their confirmed factor structure suggests that the Harmony control construct captures the intentional tendency of individuals to transfer responsibility, agency, and control over choices to forces outside of themselves (such as spiritual forces, friends, trusted advisors, or luck). In addition, persons may actively align with social forces by anticipating others' needs and by merging with other people. However, the observation that harmony control and primary control behaviors are statistically independent clearly evidences the common-sense notion that transfer of influence need not be an all-or-nothing act. In the decision context, high levels of autonomy do not necessarily imply conversely

low levels of dependency (or vice-versa). Rather, it is likely that people believe internal and external influences can be employed either in isolation or in tandem.

Older Adults and Control-Related Behaviors

Perceived control researchers have devoted a great deal of attention to the issue of aging. Traditionally, advancing age has been assumed to be associated with a decline in overall control perceptions, ostensibly due both to older adults' reduced opportunity and perceived capacity for primary control. However, more recent research calls this view into question. While it may be true that older adults experience fewer opportunities for primary control, as well as reduced ability perceptions, they still value primary control opportunities. Moreover, there is evidence that older adults have developed both an increased capacity and preference for harmony control behaviors. The following paragraphs address these issues.

Older Adults and Primary Control. Rodin et al. (1985) observed that older people are likely to be faced with situations wherein primary control opportunities are limited. As they age, adults seem to be increasingly faced with events over which they have little primary control, such as an increasing number of health problems, loss of spouses, and so forth (see Menec and Chipperfield, 1997b; Rodin et al., 1985). Many researchers believe that such losses in opportunity for primary control can be internalized, so that older adults perceive themselves to lack primary control capacity. There are, however, contradictory research results regarding this issue. Many studies have indeed shown that older adults are more external in their locus, reflecting a decreased sense of primary control capacity. Yet these studies are partially offset by others that indicate that older adults are more internal in

their locus, and still others that specifically show that perceptions of primary control capacity do not change with age (see Rodin et al., 1985, for a review of these studies). This mixed body of evidence prompted Brandtstadter and Rothermund (1994) to conclude that overall control perceptions likely do not decline with age, though older adults may perceive reduced capacity for primary control.

Studies have shown that adults of all ages value primary control when it is available, though striving for primary control has been noted to wane among the oldest-old (varyingly defined as those greater than (a) 75 years, (b) 80 years, or (c) 85 years of age [see Menec and Chipperfield, 1997b]). Field experiments showing both acceptance and benefits of primary control-enhancing interventions for the elderly include those conducted by Langer and Rodin (1976), Reich and Zautra (1989, 1990, 1991), Rodin and Langer (1978, 1980), and Schulz and Hanusa (1978, 1980). Survey and observational studies showing that disabled elderly persons living at home and in long-term care institutions prefer and benefit from environments that provide high levels of primary control include those by Bowsher and Gerlach (1990), Timko and Moos (1990), and Wahl (1991).

An intriguing possibility is that lifelong exposure to cultural beliefs about older adults' primary control capacity may contribute to a self-fulfilling prophecy of reduced self-efficacy perceptions. Levy (1996) and Levy and Langer (1994) demonstrated that cultural beliefs about aging play a role in determining the memory loss people may experience in old age. Levy and Langer (1994) show that two groups of older adults who have not experienced negative stereotyping about aging over their life-span (deaf Americans and mainland Chinese) do not exhibit age-related memory loss. Levy (1996) utilized an

experimental procedure to activate both negative (e.g., “because of my age I am forgetful”) and positive stereotypes of aging (e.g., “because of my age I have acquired wisdom,”). She found that activating positive stereotypes improved memory task performance, memory self-efficacy, and views of aging in old individuals, while activating negative stereotypes tended to worsen memory task performance, memory self-efficacy, and views of aging in old individuals. These results suggest that the frequent observations of low perceptions of primary control capacity in older adults could be due to cultural influences, to which individual adults may vary in their susceptibility.

Older Adults and Harmony Control. A research result that has recently begun to attract attention is that adults of different ages differ in their preferences for primary and harmony control (Heckhausen and Schulz, 1995; see also Tangsrud and Smith, 2000). Heckhausen and Schulz (1995) present a life-span theory of control in which they review an extensive body of literature that suggests older adults have both a greater capacity and propensity to employ harmony control tactics than younger adults. In terms of capacity for harmony control, researchers have discovered that when older adults are faced with limited opportunity for primary control, control-related activities are then likely to be focused on harmony control behaviors. When under stress, older adults are better able to engage in coping behaviors, such as regulating cognition and emotion (e.g., distancing, acceptance, or positive reappraisal) or identifying an object of trust, rather than action on the environment (Folkman et al. 1987).

Older adults’ propensity to maintain overall control perceptions through the employment of HC strategies also apparently increases (Heckhausen and Schulz 1995); in

fact, such increases have been observed in conjunction with high levels of primary control behavior. Though largely cross-sectional (but see Burns and Seligman 1989), supporting evidence is nevertheless quite persuasive. Peng and Lachman (1993) and Peng (1993) report that primary control efforts did not differ by age for adults 18 to 84, while harmony control was highest for the oldest respondents (aged 60+), next highest for middle-aged respondents (aged 40 to 59), and lowest for young respondents. Heckhausen and Schulz (1994) found that tenaciousness in goal striving (a primary control activity) was stable throughout adulthood for their sample of 20 to 85 year-olds. Flexibility, an indicator of capacity to engage in harmony control strategies, increased from young to old age.

Life-Span Developmental Theory and Increases in HC Behavior. This apparent age-related increase in the capacity for harmony control could be a result of one of at least two different processes. Both fall under the rubric of life-span developmental theory, an emerging view in the psychological and gerontological literatures, which challenges the traditional perspective in cognitive psychology that aging is purely a period of physical and cognitive decline. Advocates of the first of these processes (e.g., P. Baltes, 1987; M. Baltes and P. Baltes, 1986; P. Baltes and M. Baltes, 1990; P. Baltes, Dittmann-Kohli, and Dixon, 1984; P. Baltes and Kliegl, 1986), would take the position that such increases in harmony control capacity reflect a process of *compensation* for losses in primary control capacity. In adulthood, cognitive development is believed to encompass both gains and losses, and occurs as a process of adaptation that can be characterized in terms of a gain/loss relation. New abilities may emerge which may be requirements for adaptation to the individual's social and intellectual environments, and there may be a loss of abilities if they become

dysfunctional in this new environment (see Smith, 1994). The sum total of an individual's cognitive capabilities, however, is portrayed as being of (at best) stable size. Though change with age is inevitable, gains (that is, new or increased capabilities) may only occur in conjunction with losses of other capabilities. No developmental change during the life course is pure gain (P. Baltes, 1987).

The life-span counterargument to the compensation model is found in the gerontology literature, and is exemplified by works such as those of Adams (1991); Adams, Labouvie-Vief, Hobart, and Dorosz (1990); Adams, Smith, Nyquist and Perlmutter, 1997; Gould, Trevithick and Dixon (1991); Labouvie-Vief (1982, 1985); and Labouvie-Vief and Schell (1982). It is distinguished from the compensation model advocated by P. Baltes and his colleagues in that (a) growth and decline can occur independently (i.e., change in cognitive abilities is not by necessity a zero-sum game), and (b) qualitative (i.e., not merely quantitative) changes can emerge in cognitive functioning (Adams, 1991; Labouvie-Vief, 1982, 1985; Labouvie-Vief and Schell, 1982; cf. P. Baltes, 1987). Accordingly, these researchers would advocate that age-related changes in cognitive functioning should be considered *accommodative* rather than compensatory. Not only might new abilities emerge in response to perceived changes in environmental conditions, there is no necessity that there has been a loss of other abilities. The resolution of the compensation versus accommodation debate is beyond the scope of this study, though it is likely to attract considerable interest into the foreseeable future.

In total, the age-related perceived control literature paints a picture of older adulthood as a period of declining opportunity for many forms of primary control-related

activity. However, there is no conclusive evidence to suggest that older adults (a) do not value primary control and, more importantly (b) have lost the capacity to exercise primary control in everyday activities. However, if Levy's (1996) and Levy and Langer's (1994) work in memory self-efficacy can be applied to control-related perceptions, it may be the case that older adults consider themselves to be less capable of primary control. Recent evidence also suggests that older adults are more capable and more likely than their younger counterparts to engage in harmony control-related behavior. As has been discussed in the preceding pages, this evidence from the perceived control literature is supported in theory and data from both the psychological and gerontological life-span developmental literatures.

Perceived Control and Decision Dependency

Several observations may be made concerning the preceding sections. First, because consumer decisions are achievement situations, control-related decision behavior like that described by Olshavsky and his colleagues should be expected to occur. Second, the behaviors themselves (e.g., asking or not asking for advice, conducting a self-reliant search for information vs. asking for a brand recommendation) are indicators of broader categories of behavior. These categories, which Olshavsky called autonomous, subcontracted, and hybrid decisions, and which psychologists would call primary and harmony control, have as their focal point the issue of dependency and independence in decision making. Third, because of its rich underlying theory, perceived control may represent a potentially valuable perspective from which to examine independence and

dependence in a decision-making context. Finally, younger and older adult consumers are likely to differ in their control-related decision behaviors.

The first purpose of this section is to explicitly illustrate the similarities between the primary and harmony categories of control-related behavior, as described in the psychological literature, and the behaviors Olshavsky and his colleagues considered to be indicators of dependent and independent decision styles. A secondary objective is to illustrate the pervasiveness of control-related behaviors in decision making. Third, the section will highlight benefits associated with examining decision-making dependency from a perceived control perspective.

Primary Control-Related and Autonomous Decision Behaviors

In a study of primary control in health care, S.E. Taylor (1990) observed that patients desire both autonomous and shared control over many aspects of their care. For example, she found that patients who were allowed to make choices about their exercise and pain relief regimens not only valued the autonomy, but also tended to exercise more, use less pain relief medication, and recover faster. Burger and Cooper (1979) identify assertiveness, decisiveness, and goal-directed activity as being indicative of a high desire for autonomous (primary) control. In the context of job search and employment decisions, seeking out and utilizing more sources of information are primary control-related activities (Friedrich, 1987). Perry's (1991) results suggest that university students who perceived themselves capable of primary control exhibit more focused attention and effortful utilization of memory capacity. All of these observations from the psychological literature

are representative of behavior that occurs in the context of autonomous decision making (Olshavsky and Rosen, 1985).

Harmony Control-Related and Hybrid/Subcontracted Decision Behaviors

Harmony control, as already noted, complements and adds to the scope of secondary control (secondary control-related behaviors will, therefore, be implicit in subsequent references to harmony control in this dissertation). A variety of observations from the psychological literature provide examples consistent with hybrid or subcontracted, i.e., dependent, decision behavior. For example, Heckhausen and Schulz (1995) describe numerous examples of harmony control-related behavior that are manifested as dependency upon another (e.g., a salesperson or physician) as a decision making guide or as a surrogate decision maker (cf. Solomon, 1986). These are behaviors Olshavsky and his colleagues have described as indicative of hybrid or subcontracted (respectively) decision making. Other observations from the psychological literature are more broadly indicative of the “no-decision” form of purchase behavior that had been Olshavsky’s original topic of interest. Morling and Fiske (1999) describe such activities as making decisions flippantly or without sufficient information (thereby relying upon luck, fate, or some higher power for a favorable outcome (see also Rothbaum et al., 1982). Covington (1993) observes that people attempt to avoid risk, often by engaging in habituated behavior (an attempt to achieve predictability and thus the perception of order and control).

Benefits of A Perceived Control Perspective on Decision Dependency

As was stated previously, the focus of this study is on the issue of decision-making dependency; specifically, it is an examination of control-related purchase decision types as indicated by primary and harmony control - related decision behaviors. The issue of whether specific decision-making behaviors are simply special cases, or manifestations of, control-related behavior is an empirical question, one that is beyond the scope of this study. Nonetheless, evidence for such a view is compelling. Table 1 identifies specific behaviors Olshavsky and his colleagues regarded as being indicative of hybrid or subcontracted decision making, and associates them with their harmony control corollaries from the perceived control literature. The last entry in Table 1 exemplifies the kind of limited decision making process that Olshavsky and his colleagues did not call hybrid or subcontracted decision making, but which may reflect dependency upon some intangible object of hope or trust, such as luck, fate, or some higher power, as suggested above.

Table 1. Hybrid and subcontracting decision behaviors as exemplars of the HC-related behavior type.

Purchase Decision Behavior Exemplar	Harmony Control Corollary(s)
Consumptive decisions to initially engage in objectively self-destructive behaviors due to influence of others (e.g., smoking, excessive use of drugs or alcohol; Olshavsky and Granbois, 1979, p. 95)	Vicarious Control (Rothbaum et al., 1982; pp. 20-21); submissive alignment with powerful others to share in their power; see Merge With Others factor, Morling and Fiske, 1999)

Table 1 (continued).

Purchase Decision Behavior Exemplar	Harmony Control Corollary(s)
Purchase decisions made partly or wholly according to the <i>normative</i> influence of social referent group members (e.g., purchases that conform to social group norms of style or brand, purchases made in imitation of others; Olshavsky and Granbois, 1979, p. 98)	As above.
Later adopters seek less information about innovations than early adopters; explained partly by the "diffusion effect," i.e., increasing social pressure on non adopters (Olshavsky and Granbois, 1979, p. 96)	As above; implies early adopters' satisfaction holds no informational value; see following table entry
Purchase decisions made partly or wholly according to the <i>informational</i> (i.e., recommendation) influence of referent personal or impersonal sources (e.g., friends, expert acquaintances, product testing associations or specialty magazine reports; Formisano, Olshavsky, and Tapp, 1982; Olshavsky and Rosen, 1985; Rosen and Olshavsky, 1987a; 1987b)	Trust (Morling and Fiske, 1999; see also Friends Care factor; factor includes personal and impersonal objects of trust regarding decision support, help in need fulfillment (Morling and Fiske, 1999)
Purchase decisions made partly or wholly according to the influence of salespersons (Formisano, Olshavsky, and Tapp, 1982 p. 477; client perceptions about salesperson personality, competence, knowledge relative to other salespersons, level of prior acquaintance, and degree of liking toward salesperson were predictive of "recommendation following")	(Ambiguous; multiple potential HC associations): Trust, Merge With Others, Friends Care, Vicarious Control
Purchase decisions made partly or wholly by surrogate consumers (e.g., interior decorators, stockbrokers; Rosen and Olshavsky 1987b, p. 440; see also Solomon, 1986)	Trust, Friends Care.; see also importance of ability to predict outcomes in achievement situations (Perry, 1991)

Table 1 (continued).

Purchase Decision Behavior Exemplar	Harmony Control Corollary(s)
Purchase decisions made based upon surrogate indices of quality (e.g., manufacturer or brand reputation, price, packaging; Olshavsky and Granbois, 1979, p. 98)	Predictability (Perry, 1991); see also selectivity function of HC, wherein capacity for primary control of other pursuits is maintained by utilizing HC (Heckhausen and Schulz, 1995, p. 286)
Patronage, purchase, or investment decisions made in the partial or total absence of external search when internally stored information is insufficient (e.g., impulse purchases of durable goods and clothing; purchase of durable goods after a single store visit; new residents choosing a grocery store, physician, or hair stylist without exhaustive search and evaluation of alternatives, Olshavsky and Granbois, 1979, pp. 96-97)	(Ambiguous; multiple potential HC associations): Luck (Rothbaum et al., 1982); Wait on Luck, Higher Power, (Morling and Fiske, 1999)

Identifying Objects and Objectives of Dependency. This dissertation asserts that it is advantageous to examine consumer decision making in terms of decision-maker dependence and independence. Just as the concept of harmony control complements and enriches the secondary control construct, the concept of dependency in decision making (as understood from a perceived control perspective) may encompass and add to the scope of decision autonomy, hybridization, and subcontracting. Olshavsky et al.'s contribution was the demonstration that decision-making dependency exists. The perceived control perspective, however, not only allows consideration (and quantification, using established measures) of the degree to which decision making dependency exists. It also helps, via the

harmony control construct and its established factor structure, to suggest well-defined classes of influences upon which a consumer might depend (e.g., powerful others, luck, social normative forces, etc.).

For example, Rosen and Olshavsky (1987a) differentiated between normative and informational social influence. They confined their studies to recommendations reflective of the latter, however, because dependence upon normative influence does not fit the traditional view of the consumer as a rational decision maker (see Rosen and Olshavsky, 1987a, p. 125). An examination of hybrid and subcontracted decision making from a perceived control perspective, however, enables the consideration of both. In fact, each seems to be a behavioral instance of specific harmony control factors, the difference between the two defined by the personal objectives of the consumer. When the individual solicits and/or succumbs to a normative recommendation, his/her objectives may be alignment and merging to achieve social acceptance. Thus, a “good decision” is one that protects the individual from potential social sanction. When the individual decides based upon an informational recommendation, it is because his/her objective is to make a “good decision” in the objective, rational sense.

This normative/informational distinction is consistent with established research results that suggest conformity pressures do impact buying decision processes (LaTour and Manrai, 1989; Miniard and Cohen, 1983; Venkatesan, 1966), especially when the product is conspicuous in purchase and use and when group social acceptance is a strong motivator (Bearden and Etzel, 1982). Because of harmony control’s ability to tap both normative and informational elements of interpersonal influence (e.g., “Merge with Others” and “Trust,”

respectively), use of the harmony control construct in examining hybrid and subcontracted behavior enables the researcher to assess both of these important influences within the context of a single purchase decision. This is a multifaceted approach to the study of decision recommendations that is not supported by current decision theory. Indeed, it is likely that normative and informational elements of advice coexist within any given recommendation.

Identifying Intangible Objects of Dependency. Similarly, the perceived control perspective adds to our understanding of decision processes that do not involve recommendations per se, but still do not include “adequate” search for information. While inadequate search may indeed indicate the use of decision heuristics (as discussed earlier), dependency may also play a role in contributing to the abbreviation of decision processes. Consumers may depend upon surrogate indicators of quality, such as price, packaging, or manufacturer/brand reputation (Olshavsky and Granbois, 1979), that they perceive to be predictive of adequate performance. Alternatively, consumers may align with luck and literally or figuratively “flip a coin,” trusting what fate brings and attempting to be at peace with it (Morling and Fiske, 1999; Weisz, Rothbaum, and Blackburn, 1984). Even though this type of decision making represents a form of dependency, it does not conveniently fall into the traditional hybrid or subcontracted framework because such intangibles as luck or fate are typically not considered to be objects to which one can subcontract a part or all of a decision.

Expanding the Scope of Hybrid Forms of Decision Making. Consistent with the above definitions of primary and harmony control, it is argued that persons who strive to

maintain independent, authoritative influence over their purchase decision processes are exhibiting control-related behaviors that are primary-dominant. Dependency, as exemplified by hybrid and subcontracted purchase decision behaviors, indicates utilization of harmony control tactics. Hence, purchase decision process behaviors could be conceptualized as locating on a continuum featuring end-points that represent (a) exclusive use of primary control tactics (i.e., Olshavsky's autonomous decision making) and (b) exclusive use of harmony control tactics (i.e., Olshavsky's subcontracted decision making). The various forms of hybrid decision making, as discussed immediately below, may indicate some combination of primary and harmony control-related decision behavior.

Rosen and Olshavsky's (1987b) distinction between the RFES and RFS forms of the hybrid strategy is consistent with this notion of a continuum. In particular, RFES subjects, who confined their evaluative activities to the set of alternatives recommended to them by others, would appear to be exhibiting relatively high levels of harmony control-related behavior, and low levels of primary control-related behavior. On the other hand, RFS subjects acquired a single recommendation, and then proceeded to search out (and evaluate) a significant number of additional alternatives in an attempt to find a brand better than the one recommended. For these subjects, harmony control-related behavior (soliciting aid in establishing the standard) is clearly evident, but seems overshadowed by primary control-related search and evaluative behavior.

The independence of primary and harmony control-related behaviors suggests, however, that there may be forms of hybrid decision making that extend beyond those that would exist on a simple continuum. While some consumers may evince harmony control-

related behaviors but be primary dominant, and others show an opposite pattern (RFS and RFES, respectively), still others may exhibit high levels of both types of control-related behaviors. These consumers could be called Comprehensive Decision-Makers. They might solicit considerable advice and many recommendations, but concurrently engage in a significant degree of self-directed search and evaluation, perhaps reserving the final choice for themselves. Alternatively, some may display little control-related behavior of either kind; such consumers might be considered Purchase Decision Avoiders. These consumers might be product users, but rely on others not only for decision making, but for actual purchase as well. These latter two forms of control-related decision behavior could not be predicted or observed based upon our previous understanding of hybrid decision making, and without apprehending the independence of primary and harmony control-related behaviors. Together, these four forms of decision behavior can be presented on a two-dimensional decision-style matrix (see Figure 1).

Identifying Explanatory Variables. Finally, perceived control theory plays an integral part in theoretically accounting for decision-making dependency. The perceived control literature is rich in its description of factors that lead to control-related behavior. Specifically, as will be elaborated in ensuing sections, personal perceptions of ability to make good decisions (e.g., as might be determined by self-efficacy perceptions, an important aspect of the perceived control literature) may influence the type of decision behavior chosen. Ability perceptions function as a part of a more comprehensive theoretical framework, termed the Motivation, Opportunity, and Ability model, which will be described below.

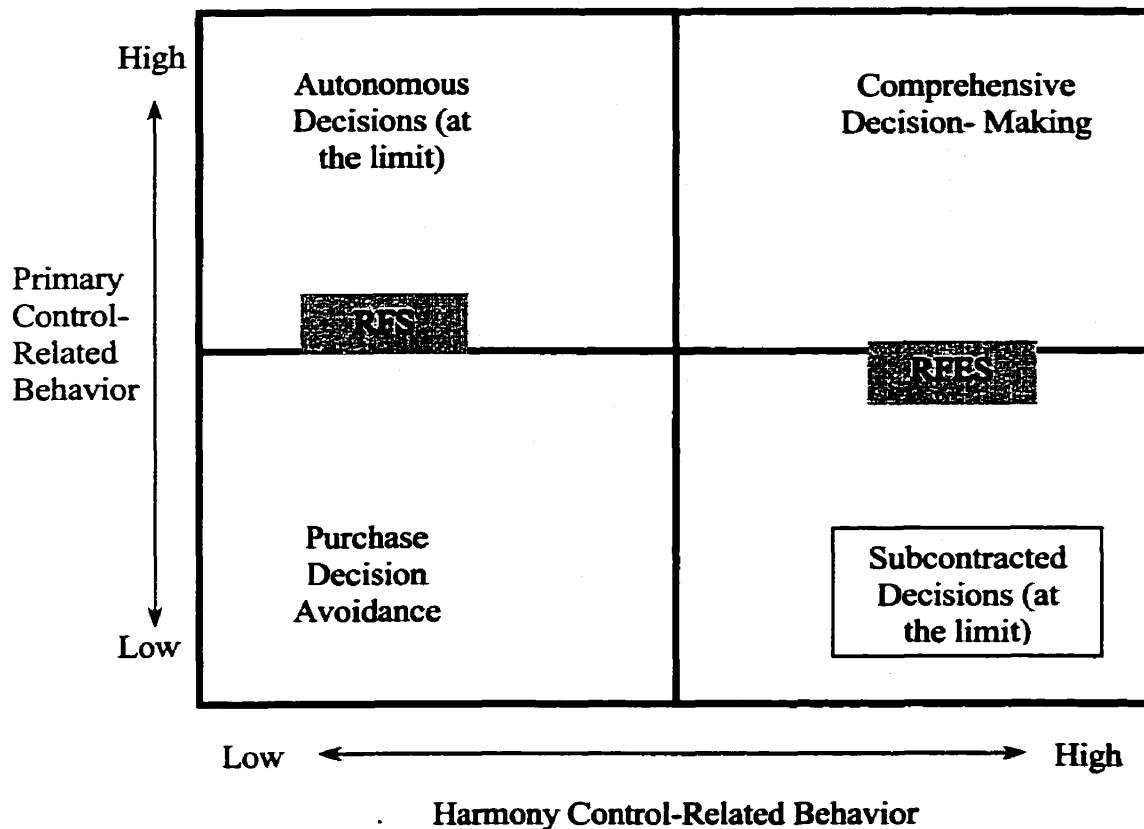


Figure 1. A Two-Dimensional Matrix of Control-Related Dependency in Decision Making.

In sum, synthesis of the traditional consumer behavior and perceived control perspectives in the examination of different styles of decision making carries several benefits. First, because consumer decision making is an achievement-oriented activity, we are able to understand that solicitation of external influence in decision making represents an attempt to maintain or increase perceptions of control, and is a normal, rather than an abnormal, behavior. In addition, the study of the degree to which such dependent behavior exists can be expanded to include a far more structured investigation of objects, objectives, and forms (i.e., types of hybrid decisions) of dependency than was possible for Olshavsky

and his colleagues. Though these issues have always been pertinent, there has been no theoretical foundation for their study. Finally, considering consumer decisions from a perceived control perspective offers clues to help identify and understand some of the situational, task-related, and individual variables, and their interaction, that influence consumer decision-making dependency.

Motivation, Opportunity, and Ability:

A Framework to Explain Differing Decision Styles

While demonstrating the occurrence of the differing styles of decision-making behaviors, Olshavsky and his colleagues implicitly or explicitly noted a number of conditions under which dependent forms of decision making might occur. Though a number of these can be inferred from previous sections, they and others are made explicit in Table 2 and discussed below. In addition, in Table 2, these conditions are associated with their corresponding Motivation, Opportunity, and (perceived) Ability categories (termed “MOA Category” in the table), which will be discussed in greater detail in subsequent paragraphs.

Table 2. Antecedent conditions for hybrid and subcontracted decision making and associated motivation, opportunity, and ability categories.

Conditions for Hybrid or Subcontracted Decisions	MOA Category
Low achievement motivation (Olshavsky and Granbois, 1979, p. 95)	Motivation
Perceived inability to control one's own financial destiny (Olshavsky and Granbois, 1979, p. 95; in the context of choosing financial products and services)	Perceived Ability
Need to conform to social norms (e.g., teen smoking; Olshavsky and Granbois, 1979, p. 95)	Motivation
Urgency or a special purchase opportunity displaces deliberation and prepurchase planning (Olshavsky and Granbois, 1979, p. 96)	Opportunity
Physical or socioeconomic barriers to shopping activity (Olshavsky and Granbois, 1979, p. 97)	Opportunity
A "difficult task environment" (Formisano, Olshavsky, and Tapp, 1982) resulting in knowledge and time insufficiency perceptions (see also Rosen and Olshavsky 1987b)	Ability Perceptions/ Opportunity confound
Information required for self-directed decision is unavailable (Olshavsky and Rosen, 1985, p. 120)	Opportunity
A "particularly knowledgeable" (relative to oneself) referrer is available (Rosen and Olshavsky, 1987b, p. 440)	Ability Perceptions

Table 2 (continued).

Conditions for Hybrid or Subcontracted Decisions	MOA Category
Risk of making a poor decision given conditions of high time cost (higher risk did not lead to autonomous search behavior when time costs for search were high; Rosen and Olshavsky 1987a, p. 139; 1987b, p. 444)	Recognized Ability Perception/ Opportunity interaction
The consumer "lacks interest in making the purchase decision himself." (Rosen and Olshavsky, 1987a, p. 126)	Motivation

Assessment of people's motivation, opportunity, and ability as a conceptual framework for understanding and predicting their likelihood of performing a given behavior has been advocated in the consumer behavior literature. Consumer behavior researchers have treated this framework in at least two ways. In the first case, the motivation, opportunity, and ability variables are considered to be multiplicative contributors to a continuous, higher order variable, MOA, which is then employed as a construct useful for predicting behavior. For example, MacInnis, Moorman, and Jaworski (1991) suggest consideration of these three variables to assess MOA to process information from advertisements. They suggest that using ad execution cues to enhance motivation, opportunity, and ability should increase MOA to process information, lead to a deeper level of processing, and, in turn, lead to more fully formed and stable attitudes. Increases in MOA can be brought about by raising the level of any of the three underlying variables.

In the second case, the motivation, opportunity, and ability variables are considered important as stand-alone variables. According to this view, behavior also varies according to the interaction of the three variables. However, the objective shifts from enhancing MOA to identifying the implications of varying levels of each of the variables. This dissertation employs this second use of the Motivation, Opportunity, and Ability framework, and is consistent with that of Petty and Cacioppo (1986a, 1986b [Petty and Cacioppo, 1986b explicitly included only M and A in their model]) and Batra and Ray (1986). It presumes that motivation, opportunity, and ability to achieve a good purchase decision (a) each exist to a degree equal to or greater than nil, (b) are each themselves determined by an interaction of personal, situational, and object factors, and (c) interact to influence levels of dependence and independence in decision making.

A careful consideration of Table 2 leads to at least two important conclusions. First, while the individual items in the left column may constitute conditions under which dependent decision making may occur, they do not together represent a theoretical statement explaining such behaviors. In fact, some pairs of the items seem contradictory. For example, the first item (Low achievement motivation) implies a low perceived level of decision importance. The third item (Need to conform to social norms) implies a decision that is very important due to normative social influence. In the first case, motivation to make a good decision seems low, and a hybrid or subcontracted decision is expected. However, the second case, where motivation would seem to be high, is also expected to result in hybrid or subcontracted decision behavior (Olshavsky and Granbois, 1979). Such contradictions suggest that unidentified moderating variables may exist (specifically,

according to the current framework, opportunity, perceived ability, or both may moderate the effects of motivation). Accordingly, the items in the left column of Table 2 seem more reasonably construed as predictors that may play a role in a more comprehensive theory of control-related dependent decision behaviors.

Second, though individual items may not account for control-related decision style preferences, it may be that they are representatives of more abstract variables that, together, enable prediction and understanding in a theoretical sense. This dissertation suggests that motivation, opportunity, and ability perceptions may adequately represent these more abstract variables, and they are presented in the right column of Table 2.

As indicated in the right column, items that refer to level of achievement motivation, need for social acceptance, or level of interest in making a good decision should be considered indicators of the broader, more encompassing Motivation variable (the next section of this Chapter provides more precise definitions for the Motivation, Opportunity, and Ability variables). Items that refer to the level of liberty enjoyed by the consumer to engage in own-based decision making (e.g., time-related urgency of decision, barriers to search) should be considered indicators of the Opportunity variable. Items that refer to individual perceptions about one's own competency in making purchase decisions (e.g., more knowledgeable referrers, a difficult task environment) should be considered indicators of the perceived Ability variable. Comments in the right column of Table 2 also assert that these variables interact in the determination of dependent decision behavior (e.g., high risk did not lead to increased search when time cost was high; Rosen and Olshavsky, 1987a, b).

According to Table 2, it appears that each of these higher-order variables may encompass a variety of previously distinct conditions for decision-making dependency. More importantly, identification of these variables makes it possible to consider them together (that is, their potential interaction) in the Motivation, Opportunity, and Ability framework. This, in turn, might allow the resolution of apparent predictive contradictions like the one described above. In sum, these variables individually appear to be more encompassing and inclusive, and their corresponding framework may offer a more parsimonious explanation of control-related dependent decision behavior than was previously possible.

Motivation, Opportunity, and Ability Perceptions:

Definitions and Antecedent Factors

Figure 2 is a conceptual framework explicitly linking the Motivation, Opportunity, and Ability variables, as well as the consumer Age variable (as previously discussed), to control-related styles of decision dependency. The following paragraphs provide definitions for the Motivation, Opportunity, and perceived Ability variables, as well as a presentation of factors that may affect these three fundamental variables. It is not the purpose of this dissertation to provide an exhaustive listing of factors that may affect consumers' motivation, opportunity, and perceived ability. These factors may represent myriad characteristics of the purchase object, the purchase environment, or the purchase process participants (for example, the consumer, the salesperson or service provider, or

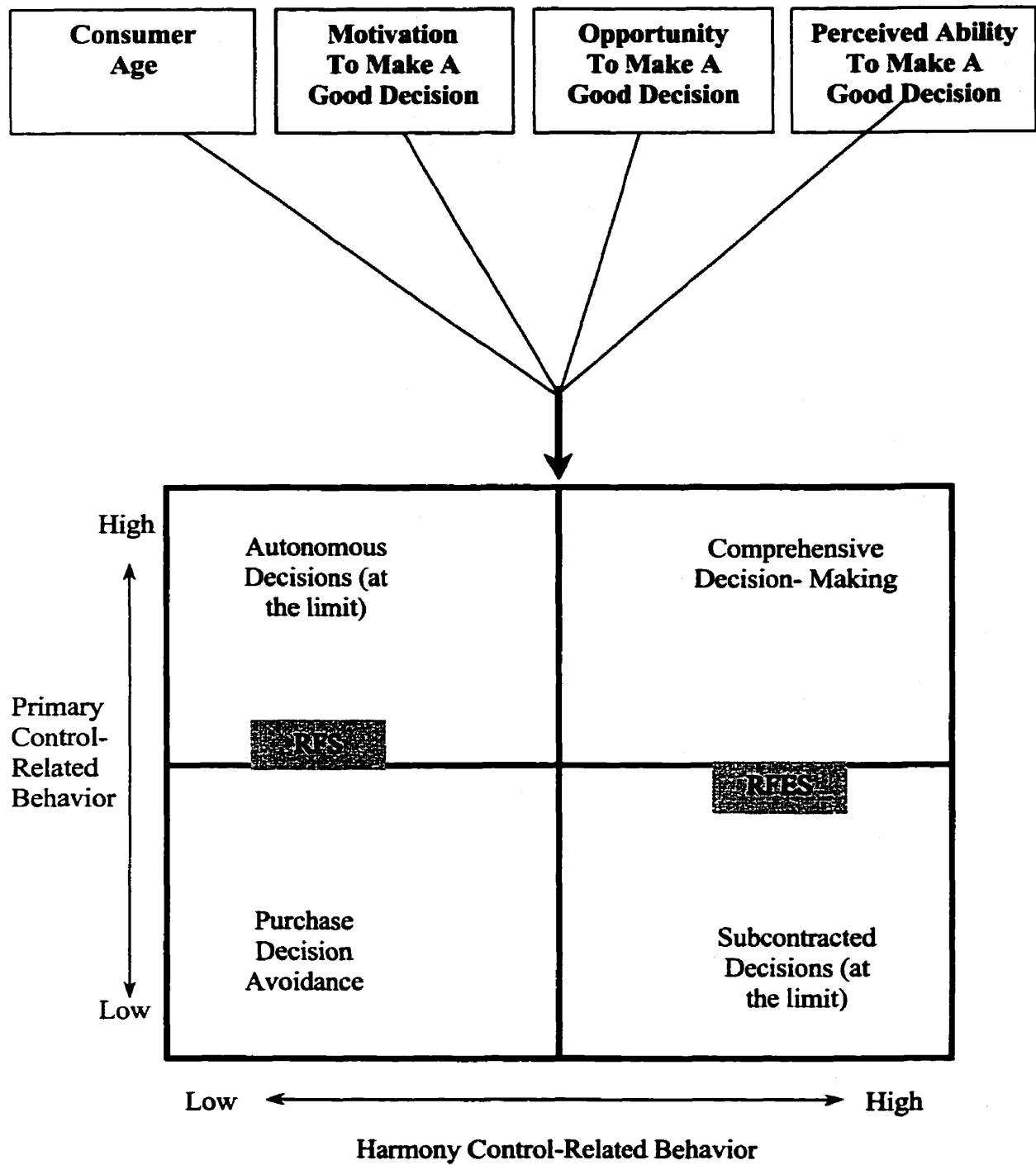


Figure 2. A Partial Model of Control-Related Dependency in Decision Making.

referent others). Rather, the following sections identify and briefly examine important exemplars of such factors.

Motivation

In the current model, motivation is defined as it has been in the consumer behavior literature: as goal-directed arousal (MacInnis and Jaworski, 1989; MacInnis, Moorman, and Jaworski, 1991; Park and Mittal, 1985). Specifically, it is a consumer's desire to achieve (the goal of) a good decision. A "good" decision is one that is instrumental in enabling the consumer to fulfill personally and situationally valued states, which may have an internal orientation (e.g., self-image), an external orientation (e.g., public image), and/or be utilitarian in nature (see Mittal and Lee, 1989). Motivation occurs and increases with the perceived personal import of the decision (i.e., personal relevance; Batra and Ray, 1985, 1986) according to its anticipated impact upon these valued states.

Note that this definition of motivation (as desire for a valued state) does not imply consideration of whether the consumer is motivated to make a good decision *him/herself* because such an inquiry confounds motivation with opportunity and/or perceived ability. In essence, the Motivation, Opportunity, and Ability framework, as it has been used in the consumer behavior literature, makes explicit the distinction between value and expectancy as predictors of motivated behavior, in accordance with Expectancy Theory (Vroom, 1964). According to Expectancy Theory, motivated behavior results when (a) the anticipated outcome of the behavior is of sufficient positive value, (b) the behavior is perceived to be instrumental in the achievement of the desired outcome, and (c) the individual perceives s/he

possesses the ability to perform the necessary behavior. Hence, the value of the outcome and the individual's perceived capacity to achieve it are kept conceptually distinct. Thus, the term "motivation," in the consumer behavior literature, corresponds to (a) above, and could properly be called "value" or "importance." This dissertation will utilize the "motivation" term as it has been employed in the consumer behavior literature to (a) maintain the conceptual distinction between value and expectancy, and (b) maintain consistency with prior consumer behavior usage.

Most consumer researchers agree that motivation is a broader construct than involvement, in that involvement can be of a variety of forms (Laurent and Kapferer, 1985), each or any combination of which can lead to a state of motivation (see Batra and Ray, 1985; Park and Mittal 1985; Petty and Cacioppo 1986a,b). Motivation is, however, most often conceptualized and operationalized in terms of consumers' involvement. This is because induced involvement is a reflection of motivation (i.e., goal-directed arousal) in the form of high perceived personal relevance of an object in a particular context (e.g., an important purchase decision; Celsi and Olson 1988). Stated otherwise, high involvement leads to motivation to act (though action itself may or may not occur, depending upon ability perceptions; see Bandura, 1986, and ensuing sections of this dissertation).

Celsi and Olson (1988) equate the state of motivation to their term *felt involvement*, which derives from intrinsic and extrinsic sources. Consumer researchers generally agree that these sources of involvement are of three interacting types: personal, object (or physical), and situational (Zaichkowsky, 1985). Personal factors (such as enduring interest in the product category, need for achievement, need for social acceptance) interact with

physical factors (characteristics of the object that cause differentiation and increase interest, e.g., price, quality, design) and situational factors (something that temporarily increases relevance or interest toward the object, e.g., “publicness” of the purchase decision or usage of the product). Consistent with previous research and the conceptualization of motivation presented here, motivation for a good decision increases with involvement, specifically, when the outcome of the decision implies, for personal and/or situational reasons, high utilitarian, sign, or hedonic value (Mittal and Lee, 1989).

Theory and empirical results seem robust in suggesting that high involvement and, in turn, high decision motivation leads to behaviors indicative of autonomous decision making, such as giving attention to and comprehending relevant information (Celsi and Olson, 1988), greater counterarguing to advertisements (Wright, 1974), and increased search behaviors (e.g. Greenwald and Leavitt, 1984; Kassarian, 1981). Petty, Cacioppo, and Schumann (1983) argue that people are more likely to devote the cognitive effort required to evaluate the true merits of an issue or product when involvement is high rather than low.

Opportunity

Opportunity is defined as the extent to which aspects of the environment allow the consumer the liberty of personally achieving a good decision (Batra and Ray, 1986; MacInnis et al., 1991). High opportunity implies that the allocation of effort required for self-directed decision making is not impeded by external factors, and leaves open the possibility that the consumer will conduct a self-directed purchase process. A lack of opportunity to make a good purchase decision can stem from the consumer's perception that

environmental characteristics, most commonly time deficiency, environmental distractions, or physical barriers to search (e.g., lack of transportation, absence of search outlets) preclude carrying out the self-directed purchase decision process that s/he might otherwise be motivated and capable to undertake.

At its most elemental level, the opportunity variable may act as a dichotomous (yes-no) variable in the determination of dependent decision behaviors. It is more likely, however, that opportunity acts as a continuous variable. For instance, situational distractions such as noise or crowding are likely to reduce, but not eliminate, a consumer's opportunity to process information in a shopping environment (Celsi and Olson, 1988).

Ability

Ability is defined as the extent to which the individual perceives that s/he possesses the competency to achieve a good decision him/herself (MacInnis et al., 1991; Perry, 1991). High perceived ability implies that the consumer believes s/he personally possesses the repertoire of cognitive abilities required for successful acquisition and evaluation of information about alternatives. Two interacting categories of sources for ability perceptions are proposed. Perceptions about one's ability to conduct an autonomous decision process may be dependent upon (a) the degree to which individuals believe themselves capable of exercising primary control (i.e., perceived self-efficacy, Bandura, 1977, 1986), and (b) the objective characteristics (i.e., degree of task difficulty) of the purchase decision situation (Formisano et al., 1982). The effect of difficulty on perceived ability is, however, likely to be moderated by the individual's level of expertise in the domain.

Self-Efficacy. Perceived self-efficacy is defined as people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances (Bandura, 1986; p. 391). Self-efficacy is not construed to be an enduring personality trait, rather, individuals may feel highly efficacious in some achievement domains and not at all efficacious in others. Further, perceptions of efficacy can vary temporally according to past success and failure experiences (see Perry and Dickens, 1987). Individuals with high efficacy perceptions consider themselves to possess high capacity to control specific situational aspects of their lives (in the primary control sense) because (a) they know what courses of action are required to achieve the desired outcome, and (b) they believe they can execute those courses of action adequately. They have greater expectancies that their strategies, plans, and behaviors will contribute to goal attainment than do individuals with low self-efficacy perceptions, who perceive that control over goal attainment resides largely outside themselves. The perceived control literature documents that persons low in self-efficacy perceptions tend to exhibit a preference for harmony control tactics, whereas persons higher in self-efficacy perceptions exhibit harmony control preferences only when their motivation to exercise primary control is low or objective realities preclude it (see Menec et al., 1994; Perry, 1991; Rothbaum et al., 1982).

The domain-specific and temporal nature of the self-efficacy construct makes it particularly appropriate as a predictor of ability perceptions in purchase decisions. Performance-related disappointments in a consumer's life and/or the focal purchase decision situation itself may induce perceptions of limited efficaciousness. For example, a sequence of purchases in which the products did not perform as well as expected could serve to

undermine a consumer's decision making ability perceptions. A consumer's discovery (after the fact) that the car model s/he recently purchased received a poor evaluation from *Consumer Reports* magazine could produce a similar outcome. Even everyday failings and missteps can contribute to temporary, but generalized, perceptions of inefficacy (Perry and Dickens, 1987; Seligman, 1975).

Task Difficulty. Marketing personnel can, to a degree, objectively assess consumers' capacity to undertake a self-directed purchase decision process based upon their own knowledge of its requirements. One can easily think of decision-making instances that are of such difficulty that only professionals in the field may reasonably be expected to conduct anything approaching a "good" evaluation. Such realities exist independently of the consumer's efficacy perceptions about the achievement context (e.g., one can perceive ability that one does not possess). Examples include decisions required in the fields of medicine and law. Nevertheless, like other services, even medical and legal procedures consist of a bundle of activities, some of which may be subject to client direction. Though one should not reasonably expect clients to exhibit extreme levels of primary control, neither can it be presumed that they will subcontract all decision-making authority.

It is likely that familiarity with specific product or service decisions will lead to higher ability perceptions which may, in turn, lead to increased primary control-related decision behavior. Aside from professional training, it is possible that experience with the purchase decision domain (for example, as might accumulate in prolonged treatment of an ongoing medical condition) could result in increased familiarity and expertise. Alba and Hutchinson (1987) write that higher familiarity is expected to influence distinct aspects of

expertise including cognitive effort, analysis, and elaboration. Higher levels of these behaviors are indicative of increased primary control activity (Perry, 1991) and autonomy in the purchase decision process (Formisano, Olshavsky, and Tapp, 1982; Olshavsky and Granbois, 1979; Olshavsky and Rosen, 1985; Rosen and Olshavsky, 1987a;1987b).

Conclusions and Present Research Issues

The occurrence of control-related dependence in consumer decisions, like that observed by Olshavsky and his colleagues, has not previously been explained. The purpose of this Chapter has been to develop a theoretical model addressing this gap in consumer behavior theory. Independent and dependent behaviors are argued to occur, in part, due to the universal human desire for the perception of control in achievement situations, of which important purchase decisions are examples. Accordingly, these behaviors might be considered special cases of control-related behavior, of which there are two basic forms. Primary and harmony control-related behaviors co-occur in hybrid decisions, while autonomous and subcontracted decision making are, respectively, indicative of those forms individually. The Motivation, Opportunity, and Ability conceptual framework is taken from the consumer research literature, and synthesized with research results from the consumer research, psychological, and gerontological literatures. This synthesis has a three-fold purpose. First, it helps to identify consumer Age, Motivation, Opportunity, and Ability as distinct variables that may influence control-related dependency behavior in consumer decisions. Second, the synthesis of literatures helps to identify factors that contribute to the

Motivation, Opportunity, and perceived Ability variables. Third, it raises the possibility that these variables may interact to affect a consumer's control-related purchase decision style.

This dissertation will confine itself to examination of the effects of the Motivation, perceived Ability, and consumer Age variables. Accordingly, both Opportunity and task difficulty will be controlled by maintaining them at high levels across Motivation and perceived Ability conditions. Any differences in Expertise will be controlled statistically. Maintaining uniformly high levels of task difficulty is advantageous in that (a) it maximizes the likelihood that harmony control-related behavior will occur (Formisano et al., 1982), (b) it controls for any confounding effects of varying difficulty on involvement and motivation, and (c) it enables observation of the effects of perceived Ability as determined independent of task difficulty. In terms of opportunity, the consensus of researchers who have advocated usage of the Motivation, Opportunity, and Ability framework is that low opportunity has a suppressive effect on behaviors of interest; however, it is unlikely that increasing opportunity for a behavior will increase its occurrence beyond that which is otherwise determined by motivation and ability (Batra and Ray, 1986; Celsi and Olson, 1988; MacInnis and Jaworski, 1989; MacInnis et al., 1991; Petty and Cacioppo, 1986a). Thus, not all researchers model the influence of opportunity. For example, Petty and Cacioppo (1986b, p. 126) do not include the opportunity variable in their presentation of the Elaboration Likelihood Model. Following this reasoning, this study will seek to control for the influence of limited opportunity by assuring subjects are not so compromised with regard to either primary or harmony control-related behavior.

Present Research and Hypotheses

Main Effects

Main Effects of Age. The age-related psychological and gerontological literature reviewed above, and the present theory, suggest two age-related results. First, Levy's (1996) and Levy and Langer's (1994) work suggest there may be a main effect of age on decision-making self-efficacy perceptions. Specifically, decision-making self-efficacy may be lower for older adults. Second, older adults' decision-making behavior should be qualitatively different from that of younger adults. The age-related perceived control literature suggests a main effect of consumer age on decision-making behavior such that, for all subjects, older adults should exhibit higher levels of harmony control-related behavior than younger adults (Folkman et al. 1987; Heckhausen and Schulz, 1994, 1995). As indicated earlier, there is no conclusive evidence to make a priori predictions concerning older and younger adults' primary control-related decision making behavior. The main effects of Age on primary control, as well as the potential interactions between Motivation, perceived Ability, and consumer Age on the dependent variables, will be assessed via follow-up analysis.

H1a: Older adult subjects will exhibit lower levels of decision-making self-efficacy than younger adults.

H1b: Older adult subjects will exhibit higher levels of harmony control-related decision behavior than younger adults.

Main Effects of Motivation. Decision-making behaviors can be categorized as either primary or harmony control-related, or a combination thereof. Given the above discussion of the influence of motivation on decision-making behavior, subjects who are highly motivated to make a good decision should engage in more primary control-related decision behavior than subjects whose motivation is low. Similarly, it is expected that these highly motivated subjects should tend toward primary behavior and away from harmony control behavior. Subjects whose motivation levels are low, on the other hand, are expected to exhibit relatively more harmony control-related behavior than primary control-related decision behavior (Celsi and Olson, 1988; Greenwald and Leavitt, 1984; Kassarian, 1981; Petty, Cacioppo, and Schumann, 1983; Wright, 1974).

- H2a: Subjects who are highly motivated to make a good decision will exhibit more primary control-related decision behavior than subjects whose motivation is low.
- H2b: Subjects who are highly motivated to make a good decision will exhibit more primary control-related than HC-related decision behavior.
- H2c: Subjects whose motivation to make a good decision is low will exhibit more harmony control-related than primary control-related decision behavior.

Main Effects of Ability. Based upon the above discussion concerning the effect of ability perceptions on achievement behavior, it is expected that subjects whose perceived ability levels are high will engage in more primary control-related decision behavior than subjects whose ability perceptions are low. Similarly, it is expected that these highly able

subjects will tend toward primary behavior and away from harmony control behavior.

Subjects whose ability perceptions are low, on the other hand, are expected to exhibit relatively more harmony control-related than primary control-related decision behavior (Formisano, Olshavsky, and Tapp, 1982; Olshavsky and Granbois, 1979; Olshavsky and Rosen, 1985; Rosen and Olshavsky, 1987a;b).

H3a: Subjects whose perceptions of ability to make a good decision are high will exhibit more primary control-related decision behavior than subjects whose ability perceptions are low.

H3b: Subjects whose perceptions of ability to make a good decision are high will exhibit more primary control-related than harmony control-related decision behavior.

H3c: Subjects whose perceptions of ability to make a good decision are low will exhibit more harmony control-related than primary control-related decision behavior.

Interaction Effects of Motivation and Ability

Interaction effects on primary control-related decision behavior. Based upon the review of the MOA literature and the theory presented above, and drawing upon additional psychological research results, it is possible to anticipate the interactive effects of Motivation and Ability on primary control-related decision behavior. Weiner (1985) presents a theory of motivated behavior, which has since received extensive empirical support. Weiner asserts that the incidence of a behavior may be suppressed by perceptions of low ability, even in the presence of sufficient motivation (the motivation/ability interrelationship is, as previously

discussed, consistent with Vroom's [1964] Expectancy Theory). Thus, achievement effort toward an important goal may be strong under perceptions of high ability, but may be weakened by conditions of low perceived ability.

Accordingly, primary control-related decision behavior should be highest among subjects whose motivation and ability levels are both high. Primary control-related decision behavior will be lower for subjects whose motivation level is low, regardless of ability perceptions. If achievement effort is influenced by ability perceptions, however, then primary control-related decision behavior should also be low for high-motivation/low-ability subjects. More succinctly, primary control-related behavior should vary among the four Motivation/Ability conditions as follows:

- H4a: Primary control-related decision behavior will be highest for high-motivation/high-ability subjects.
- H4b: Primary control-related decision behavior will be low for high-motivation/low-ability subjects, low-motivation/high-ability subjects, and low-motivation/low-ability subjects.

Interaction effects on HC-related decision behavior. The effects of the motivation/ability interaction on harmony control-related decision behavior are less easily anticipated. Though the traditional view has been that there is an inverse relationship between primary and harmony control-related behavior, Morling and Fiske's (1996, 1999) work calls this relationship into question. Further, researchers have not studied motivation

and ability issues together in the context of harmony control, but only primary control (e.g., striving for personal achievement or favorable situational outcomes, as previously discussed).

Nonetheless, Olshavsky's observations and results (see Tables 1 and 2), along with results from previous perceived control studies, shed some light on this question. The entries in the left-hand column of Table 1 all suggest purchase situations in which making a good decision is important (i.e., motivation to make a good decision is high), but that the decision maker's perceived ability to do so him/herself is limited (for real or imagined reasons). Similarly, the perceived control literature provides examples of harmony control-related decision behavior, in contexts such as aging (e.g., Chipperfield, Perry, and Menec, 1999; Menec, Chipperfield, and Perry, 1999; Menec and Chipperfield, 1997b; Rodin, Timko, and Harris, 1985) and stress, health, and health maintenance (e.g., Helgeson, 1992; Schiaffino and Revenson, 1992; Taylor, 1990; Thompson et al., 1993). In cases such as these the individual's motivation for a favorable outcome may be high but the ability to achieve it low. Thus, there may be a main effect of motivation on harmony control-related decision behaviors, but which is moderated by ability perceptions. Specifically, high-motivation/low-ability subjects may be those who exhibit the highest incidence of harmony control-related decision behavior. However, high ability perceptions may suppress harmony control-related decision behavior among highly motivated subjects.

Conversely, it would seem reasonable to expect a reduced tendency to subcontract or hybridize a decision that is perceived to be of little consequence. Under such circumstances the question of ability may be irrelevant. Examples of such decisions might include the

repurchase of staple items, or the purchase of relatively inexpensive or inconspicuous products. Rosen and Olshavsky (1987b) observed that, of the subjects who utilized a hybrid strategy (none fully subcontracted their decisions), all did so for a stereo (a more complex and involving product), while only 20 percent did so for pizza (a less involving product that most people can comfortably choose themselves). Heckhausen and Schulz (1995, p. 285) go further, cautioning researchers against hypothesizing significant control-related behavior of any kind (primary or harmony) for “trivial” everyday activities or decisions. An exception for the low-motivation/high-ability case might be observed in the variety-seeking consumer, who “rolls the dice” and trusts in luck as s/he tries different, but presumably similar, brands. Accordingly, though there may be a suppressive effect of high ability on harmony control-related decision behavior for highly motivated subjects, no such prediction is made concerning the effect of ability on low-motivation subjects. The previous paragraphs can be summarized in the following hypotheses:

- H5a: Harmony control-related decision behavior will be highest for high-motivation/low-ability subjects.
- H5b: Harmony control-related decision behavior will be lower and second highest for high-motivation/high-ability subjects.
- H5c: Low motivation will override the effects of ability, such that HC-related decision behavior will be lowest for low-motivation/high-ability and low-motivation/low-ability subjects.

Interaction effects on the primary/HC-related behavior relationship. Primary control-related decision behavior should exceed harmony control-related behavior for (a) high-motivation/high-ability subjects, and, (b) low-motivation/high-ability subjects. For (c) high-motivation/low-ability subjects, and, (d) low-motivation/low-ability subjects harmony control-related decision behavior should exceed primary control-related behavior.

H6a: Subjects whose motivation and perceived ability to make a good decision are high will exhibit more primary control-related decision behavior than harmony control-related decision behavior.

H6b: Subjects whose motivation is low but perceived ability to make a good decision is high will exhibit more primary control-related decision behavior than harmony control-related decision behavior.

H6c: Subjects whose motivation is high but perceived ability to make a good decision is low will exhibit more harmony control-related decision behavior than primary control-related decision behavior.

H6d: Subjects whose motivation and perceived ability to make a good decision are low will exhibit more harmony control-related decision behavior than primary control-related decision behavior.

The implications of all the above hypotheses (except for H1a) for primary control-related and harmony control-related decision behavior are presented visually in Figure 3, where subjects in the four Motivation/Ability conditions are assigned to their respective cells

in a full model of control-related dependency in decision making. Together, these hypotheses suggest that high-motivation/high-ability subjects are likely to exhibit relatively high levels of both primary and harmony control-related decision behavior. High-motivation/low-ability subjects are likely to exhibit relatively low levels of primary, but higher levels of harmony control-related decision behavior. Low-motivation/high-ability subjects are likely to exhibit relatively high levels of primary control-related decision behavior, but lower levels of harmony control-related decision behavior. Subjects who are low in both motivation and ability are likely to exhibit relatively low levels of both primary and harmony control-related decision behavior. Finally, note that H1b implies that older adult subjects will tend more toward harmony control-related decision behavior than younger adult subjects.

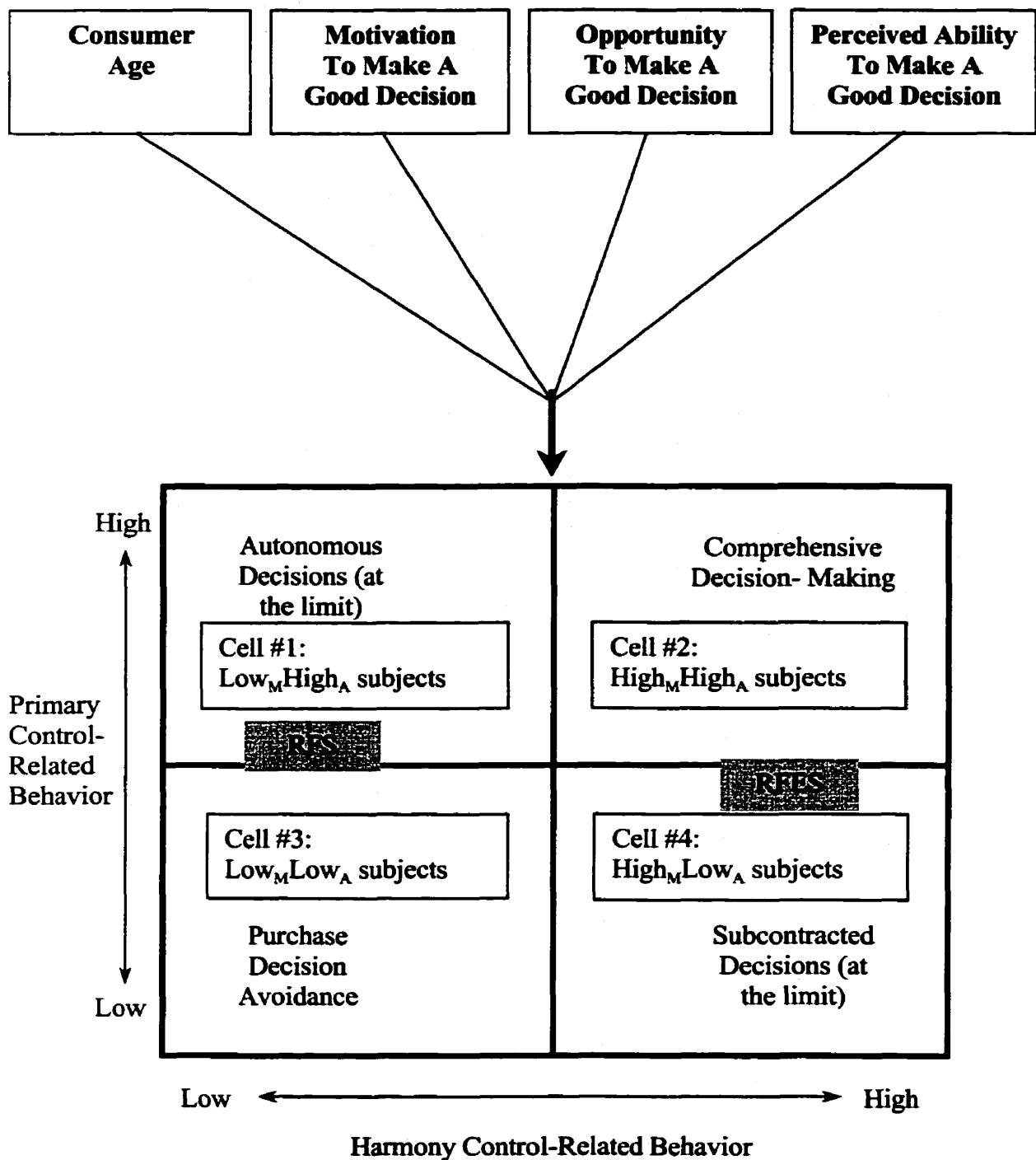


Figure 3. A Full Model of Control-Related Dependency in Decision Making. In all cases, older adults are hypothesized to score higher in HC-related decision behavior.

Chapter III

Methods

Pretesting

Pretesting was carried out (a) to test motivation manipulations for effectiveness, and (b) to test the order and instructional wording for elements of the experimental procedure. Motivation was manipulated by means of purchase decision scenarios (e.g., “you need to purchase a new automobile...”). Twelve such scenarios were developed, six designed to induce high motivation, six designed to induce low motivation. These scenarios were subjected to pretesting with the objective of identifying the three strongest for each level (i.e., identifying the three that induced the highest levels of motivation, and the three that induced the lowest levels of motivation). Acceptance of scenarios for use in the experiment was subject to meeting cutoff scores. Pretest subjects scored the scenarios on the Foote, Cone, and Belding Involvement subscale (FCBI; see Ratchford, 1987; Baughn, 1986). This is a three-item, seven point, semantic differential measure, with a minimum score of 3, and a maximum score of 21. For acceptance, low-motivation scenarios were required to score at or below 10.5. High-motivation scenarios were required to score at or above 15 (see Zaichkowsky, 1985 for cutoff rationale).

Motivation manipulation pretest subjects included students from within the Faculty of Management at the University of Manitoba, as well as adults from the community at large obtained by means of referral. Ten subjects were recruited for each age group. Each subject rated three high-motivation scenarios and three low-motivation scenarios, which

were presented in a stapled booklet in alternating order. The booklets' first scenarios were rotated so that half the booklets began with a high-motivation scenario, and half began with a low-motivation scenario. Means and standard deviations for the 12 scenarios are given in Table 3. For all age groups, the three scenarios scoring highest in motivation level were for investment of inherited funds, an automobile purchase, and the gift of diamond jewelry. Each of these scenarios scored in excess of the 15-point minimum for all age groups. Older and middle-aged adults rated the scenarios in that order of importance. Younger adult subjects rated the automobile purchase as more motivating than investments. The three scenarios scoring lowest in motivation level were for the purchase of light bulbs, an inexpensive wristwatch, and mouthwash. Though the order of importance differed for each age group, each age group identified these three scenarios as least motivational. Each of these scenarios scored below the 10.5-point maximum for all age groups (see Appendix 4, Scenarios, for the six scenarios used in the study).

Table 3. Means and standard deviations for motivation manipulation pretests by age group.

Scenario	Young Adults (<i>n</i> = 10)		Middle Adults (<i>n</i> = 10)		Older Adults (<i>n</i> = 10)		Overall (<i>n</i> = 30)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Investment	17.00	1.73	19.80	1.79	19.67	1.15	19.00	1.95
Automobile	18.25	0.50	18.20	2.68	18.83	2.32	18.45	2.03
Diamond	16.33	3.21	15.75	3.10	16.67	2.94	16.31	2.81
Anniversary	11.25	2.87	15.50	4.37	16.00	3.65	14.42	4.09
Television	12.50	3.32	15.67	2.08	14.50	3.08	14.15	3.00
Pen & Pencil	12.00	1.41	13.50	4.12	11.80	3.35	12.38	3.01
Light Bulb	6.00	2.65	4.75	2.36	7.33	2.16	6.23	2.42
Wristwatch	6.33	2.52	7.40	3.21	5.50	2.65	6.50	2.75
Mouthwash	5.25	1.26	6.20	3.11	8.71	4.39	7.06	3.61
Camera	7.33	1.53	8.20	3.96	9.00	4.58	8.18	3.37
Deodorant	13.00	4.69	7.57	4.16	10.75	1.26	9.87	4.26
Alarm Clock	13.00	1.41	9.17	3.82	9.83	3.19	10.00	3.37

For order and wording, four additional pretest subjects per age group were asked to proceed through the experimental materials. Sessions were conducted by the experimenter with a single subject. The experimenter watched, listened, and solicited comments about complications the subject may have encountered. No procedural difficulties were discovered.

Main Study

Experimental Design

The experiment was a 3 (age group) x 2 (ability) x 2 (motivation) design. Age and Ability were between subjects factors, and Motivation was a within subjects factor. Subjects were identified as belonging to one of three age groups according to their stated age: young adult (18 – 30 years of age), middle adult (35 – 50 years of age), or older adult (55 – 70 years of age; see the subsequent “Subjects” section of this Chapter for additional information). Ability was measured using a decision self-efficacy scale (Bandura, 1986). Subjects were assigned to high and low-ability groups according to a median split performed within age groups. Motivation was a manipulated, within-subjects factor. The motivation manipulation was a projective technique entailing the use of decision scenarios which were designed to create conditions of either high or low involvement (see “Pretesting” section above). In addition to the evidence for manipulation effectiveness accumulated during pretesting, manipulation checks were employed in the main study (results of the manipulation checks will be described in the subsequent “Results” Chapter).

Subjects

Three age groups were used in this study. Each subject was asked his/her age, and was assigned to one of three age groups: young (18-30 years, living outside the parental home; $M = 25.00$, $SD = 4.05$), middle (35-50 years; $M = 41.00$, $SD = 3.92$), and older (55-70 years; $M = 63.73$, $SD = 4.17$) adults. Drawing subjects from age groups across the life-

span enables identification of possible differences that exist between young, middle, and older adults (instead of simply between the younger and older age extremes).

Ability

Ability perceptions were theorized (in Chapter II) as being the result of an interaction between (a) decision-making self-efficacy, and (b) task difficulty, and may be moderated by expertise. Task difficulty was held at high levels across all conditions by virtue of the decision scenarios. Expertise differences were, first, minimized by utilizing non-student subjects, and second, controlled statistically (see subsequent section, "Control Variables).

Decision-making ability perceptions were measured using a context-appropriate scale (see Appendix 3, Experimental Booklet) developed according to guidelines set forth in Bandura's (1977, 1986) theory, and as per Lee and Bobko (1994). Self-efficacy, according to these authors, must be measured by accounting for both (a) magnitude (number of favorable outcomes expected), and (b) strength (level of confidence regarding the "yes" answers; see below). Subjects were asked to estimate how many of three complex purchase decisions they would make correctly. First, subjects were asked if they "think [you] would make a correct choice at least once." If the subject's answer was "no," s/he was requested to please stop, and read that "we will move on shortly" (only one subject, an older adult female, believed that she would not make at least one correct choice). If the subject's answer was "yes," s/he was asked to indicate, on a scale from 1 to 10, how certain they were about making at least one correct choice. Then the subject

moved on to the second stage. This stage was identical to the first, except subjects were asked if they “think [you] would make a correct choice at least twice.” The third stage asked subjects if they “think [you] would make a correct choice all three times.” Subjects’ efficacy scores were calculated by summing the strength ratings for all “yes” responses.

Subjects were assigned to either a high-ability group or a low-ability group based upon a median split. It was determined *a priori* that separate median splits should be performed for each age group to control for the possibility of systematic self-efficacy differences across age groups (see Levy, 1996; Levy and Langer, 1994; see the following Chapter [IV], Results, for specific results of the median splits). Performing the median split within the age groups rules out the possibility of a particular age group being substantially over- or under-represented in either the high or low-ability condition.

Motivation

The motivation manipulation (high or low Motivation) was accomplished via the use of decision-making scenarios (see Appendix 4). These scenarios were designed to place the subject in a purchase decision-making situation in which there are many alternative choices available (see Formisano, Olshavsky, and Tapp, 1982). The situations differed in involvement level (high and low). For each involvement level, there were three decision scenarios. As previously indicated, each subject’s booklet contained two scenarios of one level (high or low), and one of the other.

As indicated in Chapter II, motivation is typically operationalized as involvement. This study manipulated motivation in its broader sense by inducing involvement on

multiple dimensions. Specifically, high-motivation subjects read decision making scenarios in which their decisions could have high impact on utilitarian, internally, and/or externally oriented valued states. Low-motivation subjects read decision scenarios in which their decisions would have low impact upon these states. For example, the high-motivation subject may have been told s/he has inherited a large sum of money. Further, s/he would like to invest it as wisely as possible, and believes that one way to honor the memory of the loved one is to make the money grow, using what is needed, and then passing it on to other family members in time. These subjects were told the goal is to carry on a legacy and to provide for those s/he cares for. Low-motivation subjects, on the other hand, might have learned that they need to purchase light bulbs. They were reminded of the plethora of light bulb types that they might find at the store (e.g., clear vs. frosted, single wattage vs. three-way, standard vs. long-life, all in a variety of wattage ratings).

Control Variables

To control for a number of potential confounding effects, a variety of control variables were identified. Measures of these variables, as will be described below, were included in the experimental procedures booklet (see Appendix 3, Experimental Booklet).

Product Familiarity/Expertise. As described in Chapter II, it may be that a person's familiarity with a specific product or service purchase decision may influence decision-making ability perceptions and, thus, control-related dependency behaviors within such decisions. Accordingly, familiarity perceptions regarding the products or services in decision-making scenarios were collected. These data were obtained using Oliver and

Bearden's (1985) Familiarity scale. This is a three-item instrument, with each item measured on a 7-point (e.g., very familiar, very unfamiliar) Likert-type scale.

Perceived Health. When age-related differences in cognitive capabilities are observed, one must be able to rule out the possibility that these differences can be accounted for by differences in health status (see Adams et al., 1997). This is particularly true when older adults are found to perform poorer than younger adults on cognitive tasks. For the purposes of this study, it is important to assess to the degree to which differences in control-related preferences in decision styles can be accounted for by differences in health perceptions. Items measured include eyesight, hearing, overall health, social activity, amount of medication taken, and the presence of conditions such as chronic headaches, dizziness, memory lapses, blackouts or fainting spells, and other serious ailments.

Cognitive Age. Stephens (1991) assessed the usefulness of the cognitive age construct (Barak, 1987) for advertising. She found that differences in attitudes about advertising, purchasing, and consuming are better accounted for by "cognitive age," a self-perceived age defined by the way an individual feels, believes him/herself to look, the things s/he does, and the interests s/he has. For the purposes of this study, it is important to examine whether any differences in control-related behavior across chronologically-defined age groups persists when those age-groups are defined by cognitive age.

Socio-Economic Status. Measurement of socio-economic status (SES) was obtained by asking about a person's gender, occupation (and that of one's spouse), and education level. In studies relating to cognitive performance, it has been argued that differences in performance could be partially dependent upon SES. It is, therefore,

important to check for age-related differences in SES (see Adams, 1991; Adams et al., 1997).

Need for Cognition. Independence in decision making, as indicated by high propensity for primary control-related behaviors, presumes a willingness to engage in effortful cognitive activity (see Olshavsky and Granbois, 1979; Perry, 1991). It is possible, however, that some individuals' willingness to engage in effortful cognitive activity is an enduring characteristic rather than a situationally determined condition. Cacioppo and Petty (1982) have termed this enduring propensity for cognitive activity "Need for Cognition," and developed the NFC scale to measure it. Cacioppo, Petty, and Kao (1984) developed a short version (18 vs. 34 items) of the NFC, which is more parsimonious and is as reliable (estimates of internal reliability were 0.90 and 0.91 for the 18-item and 34-item versions, respectively). This dissertation employed the 18-item version of the NFC due to its shorter length and reduced imposition on subjects. The items of the short NFC instrument are measured on 9-point scales that range from -4 (very strong disagreement) to +4 (very strong agreement).

Internal-External (I-E) Orientation. Rotter (1966) developed a scale to measure an individual's locus orientation, that is, a person's beliefs about whether control over important events resides inside or outside one's self. For this study, Shewchuk, Foelker, and Niederehe's (1990) measure, which has been shown to exhibit higher validity for elderly subjects, will be utilized (see Menec and Chipperfield, 1997a). Subjects responded to items on 3-point scales (Agree, Not Sure, Disagree). While measures of self-efficacy are context-specific (in the case of this dissertation, referring specifically to perceived decision-

making capability), locus of control scales are believed to tap an enduring personality trait. If differences in control-related decision behavior are observed between subjects who differ in self-efficacy perceptions, it will be important to ascertain whether such variation is still observed after controlling for locus of control.

Dependent Variables

The dependent variables for this study are Primary control-related and Harmony control (HC)-related behavior in decision making. Each of these variables was measured using a multi-item instrument (14 and 18 items, respectively; see Appendix 1) which was modified to be appropriate for the decision-making context (see below). Individual items were measured on 7-point Likert scales with endpoints of “strongly disagree” and “strongly agree.” The 32 items were placed in random order using a random numbers table.

Primary Control. Primary control-related decision behavior was measured using Burger’s (1992; see also Burger and Cooper, 1979) Desire for Control (DC) scale, modified for context appropriateness. The DC scale has been referred to as a measure of people’s desire for, or propensity to engage in, primary control, and has been adapted to and applied in a wide variety of contexts (Burger, 1992). The instrument has never been purported to tap specific dimensions of desire for primary control. Indeed, Burger (1992) provides a review of past use that shows that the instrument’s factor structure varies across usage contexts. Further, items are often modified or eliminated to fit the focal research context.

For the purposes of this dissertation, the instrument was contextualized in two ways. First, items were modified to refer specifically to primary control-related behavior in

decision making. For example, an item that originally read, “I’d want a lot of control over what I do and when I do it” was modified to “In this decision I’d want a lot of control over what I do and when I do it.” Second, seven of the original 21 items, which could not be made to be context-relevant without substantially changing their meaning, were eliminated, thereby reducing the total length of the instrument to 14 items. The collected data were subjected to a reliability analysis to assess inter-item correlation. See the following Chapter (“Results”) for a description of this analysis and its results. See Appendix 1 for a complete listing of the 14 items used in this study.

Harmony Control. Harmony control-related decision behaviors were measured using a modified version of Morling and Fiske’s (1996, 1999) Harmony Control Scale. As discussed in the previous Chapter, the full harmony control scale is comprised of 22 items (loading on five factors) that have resulted from a traditional item generation and purification process (see Morling and Fiske, 1999 for a complete description). Because the HC scale has been recently developed, it does not have a history of being modified for context appropriateness, as does the DC scale. Hence, modifications to the scale for use in this study were undertaken in close communication with the lead developer of the instrument (Dr. Beth Morling, personal communication, during the period from January 25, 1998 – March 19, 1998). The following two paragraphs describe the scale modification process employed.

First, the two items from the factor “Merge with Others” were dropped due to their apparent lack of applicability to the decision context. These items were, “[S]ometimes when I am with others, I become fully absorbed in what they do,” and “[S]ometimes when I

am with others, I seem to lose track of what I personally want.” Second, two other items, one from the “Friends Care factor (“[M]ost of my own needs are met when I meet other people’s needs”), the other from the “Wait on Luck” factor (“[T]o lose well is to win”), were also dropped for the same reason. Finally, the remaining 18 items were modified for relevance to the decision context. As an example of these item modifications, the original item “I know that a higher power will arrange for my ultimate well-being” was modified to “I know that a higher power will arrange for my ultimate well-being in this decision.”

Changes to the original items were made in this “minimalist” manner wherever possible. For all items, and for the instrument overall, the overriding goal for modification was to maintain construct validity while achieving contextual applicability. This consumer decision version of the HC scale is comprised of 18 items distributed across four remaining factors. It was Dr. Morling’s final assessment that (a) the decision-making version of the HC scale should effectively measure harmony control-related behavior in a decision-making context and (b) it would be important to conduct a factor analysis of the 18 items once data were collected (Dr. Beth Morling, personal communication, March 19, 1998). The following Chapter (see the “Follow-up Analysis” section) describes the procedure and results of a principal components analysis of the scale items, and presents the 18 items of the scale distributed among their respective factors (also see Appendix 1 for a list of the 18 items).

Procedure

Subjects were provided a cover story that they would be participating in a “Retailer-sponsored service experience study, designed to discover consumer impressions of good and bad service experiences.” They were informed that the experimenter was conducting the research for the purposes of his doctoral dissertation, and that they would be given the opportunity to either receive or donate a \$10 stipend, as well as sign up for a cash prize drawing.

The study was administered by the experimenter to groups of subjects at locations chosen for subjects’ convenience in Grand Forks, North Dakota. The subjects were solicited by the experimenter, either directly or through a group leader. The locations included subjects’ home churches and community facilities (e.g., senior centers). Groups were limited to a maximum of 15 subjects, and included subjects of a single age group (i.e., young, middle, or older adult). There were 48 subjects per age group, for a total of 144 subjects. Genders were equally represented in each of the three age groups. They were paid for their participation; each subject received \$10.00, which they could choose to receive or donate to the church or community group to which they belong. Of the 144 subjects, all but 21 chose to donate their stipend. In addition, three cash prize drawings of \$75, \$35, and \$20 were held for each age group.

At the beginning of the session, subjects received and were asked to complete an informed consent form (see Appendix 2 for all pre-experimental materials). No subjects withdrew from the study at any point prior to, during, or after the experiment. Each subject then indicated their desire to either receive or donate the \$10 stipend, and signed up for the

prize drawings. Subjects then received an experimental booklet contained in a three-ring binder (Appendix 3 provides an example of the experimental booklet). Subjects' progress through the experimental booklet was controlled by the experimenter, who read instructions and informed participants when they could move on to successive sections of the booklet.

The study was presented to subjects under the guise of it being a "Retailer-Sponsored Service Experience Study" sponsored by a group of "prominent Canadian retailers." At the beginning of each session, subjects were told that they would be asked to provide a written account of either a good or bad service experience with any retailer they chose. They were informed that, in addition to their description of a service experience, the sponsoring retailers have requested a variety of other kinds of information "not related to your service experiences, but which help retailers understand their customers better." This cover story was designed to prevent subjects from guessing the true purposes of the study.

Each test booklet began with a sheet describing the surreptitious purpose of the study. This sheet was followed by an instructional sheet that informed subjects that "[Q]uestions on the following pages ask for information about things [you] like to do, like to think about, and believe about yourself and others." It reminded them that there are no "right" or "wrong" answers, and that their answers would remain completely confidential. This first section of the booklet included questions regarding demographic variables, Socio-Economic Status (SES; Hollingshead, 1975; see, for example Adams, Smith, Nyquist and Perlmutter, 1997), and perceived health (e.g. Adams, 1991; Adams et al., 1997).

The second section began with an instructional sheet describing the facts that (a) during our lives we make thousands of purchases, that (b) many of these purchases involve

simple, easy decisions, but that (c) other purchases are quite complex and difficult (simple and complex decisions were briefly described and contrasted). Subjects were asked to “imagine, for a moment, that [you] had to make three *COMPLEX* purchase decisions. How many of them do you think you would make correctly?” The following page contained the decision-making ability measure, developed according to guidelines set forth in Lee and Bobko (1994; see earlier “Ability” section of this Chapter). After measuring ability, subjects participated in a card-sorting task to eradicate possible effects of the ability measure from short-term memory (Kogan, Connor, Gross and Fava, 1980; see also Smith and MacKay, 2001). Following the task, subjects were asked if they would like to share the strategies they had used to sort their cards; in each session there were subjects who did so.

Subjects then viewed another instructional sheet, informing them that the next several pages of the booklet would “ask [you] to imagine yourself in different kinds of purchase decision situations. For example, you might learn that you need to buy a telephone because yours has stopped working and can’t be fixed. As you read on, please do your best to **REALLY** imagine yourself in each of the three different purchase decisions!” Following this, subjects were exposed to the motivation manipulation scenarios and responded to the dependent variables measures. Each booklet contained three scenarios, two of either high or low motivation, and one of the other. The order of these scenarios was fully rotated to control for order effects, producing a total of six versions of the booklet (i.e., high/high/low; high/low/high; etc.). A corresponding (i.e., scenario-relevant) dependent variables scale consisting of 32 items followed each scenario. Thus, each respondent read a scenario, responded to the dependent variables measure for that scenario,

then followed an identical pattern for each of the remaining two scenario/dependent variable sets.

Following the third scenario/dependent variable set, subjects were given an opportunity to provide their account of a good or bad service experience. They were provided space to respond to two types of questions: (a) what happened that was good or bad, and (b) what reactions they had during and after the experience.

Subjects then responded to (a) measures of familiarity/expertise with the products and/or services which had been the subjects of their decision scenarios (see "Control Variables" section of this Chapter), and (b) measures of decision importance (the FCBI; Ratchford, 1987; Baughn, 1986; as discussed in "Pretesting" section of this Chapter) for those product or service purchase scenarios to serve as manipulation checks.

The final section began with an instructional sheet indicating that "[T]he remaining few pages contain a number of additional questions. As mentioned earlier, the answers you provide will help to categorize respondents into groups." Subjects were reminded that their answers would remain completely confidential, that there were no "right" or "wrong" answers, and that "we are interested in your feelings and opinions." This section contained the Cognitive Age scale (Barak, 1987, see also Stephens, 1991), Need for Cognition scale (Cacioppo, Petty, and Kao, 1984), and Internal-External Orientation scale (I-E; Shewchuk et al., 1990).

After completing all elements of the test booklets, subjects were debriefed, paid for their participation, and dismissed. As part of the debriefing process, subjects were told that there were additional purposes of the study, aside from obtaining their accounts of service

experiences. They were asked if they could guess these additional purposes. No subjects correctly guessed the true purposes of the study, indicating that the “retailer-sponsored service experience study” guise had been credible, and was successful.

Chapter IV

Results

Descriptive Analyses

Four sets of descriptive analyses were conducted. First, subjects were described and compared by age group on social, economic, and health-related factors. Second, the effectiveness of the motivation scenario manipulations was assessed. Third, correlation analyses were conducted to (a) assess whether the dependent variables were correlated, and (b) to identify possible relationships between the dependent variables and the control variables (covariates) identified earlier (Chapter III, Methods, subsection “Control Variables”). Finally, the possible effect of gender on the dependent variables was evaluated.

Subjects

Forty-eight adults from each of three age groups volunteered to participate in the study: young adult (18 – 30 years; $M = 25.00$); middle adult (35 – 50 years; $M = 41.00$); and older adult (55 – 70 years; $M = 63.73$). Half the participants in each age group were women and half were men.

Table 4 compares the three age groups on several relevant characteristics. Separate univariate ANOVAs revealed no significant age differences in terms of years of education or Socio-Economic Status (SES). Subjects rated their present overall health, social activity level, eyesight, and hearing quality on a scale from 1 (very poor) to 7 (excellent). The age

groups also did not differ significantly on these measures. Finally, the subjects responded by circling “yes” or “no” to six questions about whether they experience chronic headaches, regular dizziness, long memory lapses, blackouts or fainting spells, whether they take any medication regularly, or whether they have other serious ailments (Adams, et. al, 1997). For memory lapses, 3 of 144 subjects responded yes; these were all older adults, $\chi^2 (2) = 6.13, p < .05$. For medication taken regularly, 6 of 48 young adults, 10 of 48 middle adults, and 34 of 48 older adults responded yes, $\chi^2 (2) = 42.16, p < .001$. For other serious ailments, 2 of 48 young adults, 2 of 48 middle adults, and 9 of 48 older adults responded yes, $\chi^2 (2) = 8.87, p < .05$. There were no significant differences in the number of responses between age groups for blackouts or fainting spells, dizziness, or chronic headaches. As indicated in Table 4, the older adults, on average, reported only about one of the six health symptoms and, as previously indicated, no statistically significant differences appeared for overall health or social activity. Participants in all three age groups considered themselves to be in good health (i.e., $M_s > 5$ on 7-point scales).

Table 4. Descriptive data for participants by age group.

Variable	Young Adults (<i>n</i> = 48)		Middle Adults (<i>n</i> = 48)		Older Adults (<i>n</i> = 48)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	25.00	4.05	41.00	3.92	63.73	4.17
Education (years)	15.95	3.13	16.03	3.07	15.11	3.59
SES score ^a	44.21	10.50	45.55	9.44	45.62	10.61
Overall health ^b	6.00	0.90	5.90	0.99	5.80	1.22
Social activity level ^b	5.58	0.92	5.15	1.24	5.40	1.11
Eyesight quality ^b	5.48	1.40	5.08	1.35	5.44	1.05
Hearing quality ^b	5.96	0.99	5.52	1.27	5.58	1.23
Memory lapses ^c	0.00		0.00		6.25	
Medication regularly ^c	12.50		20.83		70.83	
Other ailments ^c	4.17		4.17		18.75	
Chronic headaches ^c	6.25		12.50		8.33	
Dizziness ^c	0.00		2.08		0.00	
Blackouts/fainting ^c	2.08		0.00		0.00	
Number of symptoms ^d	0.25	0.73	0.40	0.74	1.04	0.97

^aBased on Hollingshead's (1975) Four-Factor Index. Values can range from a low of 6 to a high of 66.

^bRated on a scale from 1 (very poor) to 7 (excellent).

^cPercentage of participants responding "yes" to the health symptom.

^dAverage number of the six health symptoms experienced by respondents.

Manipulation Checks

Motivation was a within subjects factor, manipulated by means of purchase decision scenarios. As discussed in the previous Chapter (Chapter III, Methods), each subject's booklet contained two scenarios of one level (high or low), and one of the other. For the manipulation checks, subjects scored the scenarios on the Foote, Cone, and Belding Involvement subscale (FCBI; see Ratchford, 1987; Baughn, 1986).

Table 5 summarizes the results of the manipulation checks by scenario and age group. In all cases, high-motivation scenarios met the 15-point minimum. Low-motivation scenarios met the 10.5-point maximum. In separate univariate ANOVAs, only the means for the light bulb scenario differed significantly by age group, $F(2, 69) = 6.184, p < .05$. Older adults ($M = 9.83, SD = 4.39$) found the light bulb scenario to be a more motivating decision scenario than did middle adults ($M = 7.50, SD = 3.41$) and young adults ($M = 6.25, SD = 2.75$). The young and middle adult groups did not differ.

Table 5. Means and standard deviations for motivation manipulation check by age group.

Scenario	Young Adults ($n = 24$)		Middle Adults ($n = 24$)		Older Adults ($n = 24$)		Overall ($n = 72$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Investment	20.13	1.70	19.25	2.25	19.33	2.99	19.57	2.37
Automobile	19.08	2.36	18.38	3.17	16.83	4.11	18.10	3.38
Diamond	16.79	3.24	16.38	3.67	16.04	4.05	16.40	3.63
Light Bulb ^a	6.25	2.75	7.50	3.41	9.83	4.39	7.86	3.84
Wristwatch	5.38	2.43	6.46	3.55	7.83	4.14	6.56	3.54
Mouthwash	6.38	3.17	8.21	5.16	7.38	4.42	7.32	4.33

^aMeans differ by age group for the light bulb scenario, $F(2, 69) = 6.184, p < .05$.

Separate univariate ANOVAs were also used to test for possible effects of order on the manipulations. The manipulation check scores were entered as dependent variables, and booklet version was entered as the factor. None of the manipulation scores for any of the scenarios varied by the order in which they appeared in the test booklets (see Table 6). Because all motivation scenarios successfully induced their desired level of motivation

(either high or low, as defined by the *a priori* identified cut-off scores), the motivation manipulations were considered successful and all subsequent motivation comparisons were collapsed into the high and low motivation levels.

Table 6. Means and standard deviations for motivation manipulation check by order in which they appeared in the experimental booklets (all *ns* = 24).

Scenario	Appeared As First Scenario		Appeared As Second Scenario		Appeared As Third Scenario	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Investment <i>F</i> (5, 66) = .208 ^a	19.25	2.42	19.96	2.12	19.50	2.60
Automobile <i>F</i> (5, 66) = .590 ^a	17.13	3.88	18.46	3.27	18.71	2.84
Diamond <i>F</i> (5, 66) = .294 ^a	17.00	3.27	15.71	3.93	16.50	3.70
Light Bulb <i>F</i> (5, 66) = .087 ^a	7.92	3.92	7.46	4.08	8.21	3.62
Wrist Watch <i>F</i> (5, 66) = .170 ^a	6.13	4.09	6.46	3.08	7.08	3.48
Mouthwash <i>F</i> (5, 66) = .866 ^a	6.29	2.99	8.79	4.99	6.88	4.54

^a Means do not differ by order; all *ps* > .05

Reliability Analyses: DC and HC Scales

Subjects' responses on each item, for each of the three scenarios, for both the DC (14 items) and HC (18 items) scales, were averaged across the decision scenarios. These item mean scores for each subject were used to analyze the scales' internal reliability. For the DC scale, internal reliability, as measured by Cronbach's alpha, was .8090 (*N* of cases =

144; 14 items). For the HC scale, internal reliability, as measured by Cronbach's alpha, was .7896 (N of cases = 144; 18 items). The HC scale will be evaluated further by means of principal components analysis (see "Follow-up Analysis" section of this Chapter).

Correlation Analyses

For each respondent, summary dependent variable scores were obtained by computing a simple average for each dependent variable (Primary control, $M = 5.31$, $SD = .64$; and Harmony control, $M = 3.43$, $SD = .65$; $ns = 144$) across the three decision scenarios. These summary scores represent subjects' generalized tendency to employ Primary and Harmony control in the decision scenarios. As shown in Table 7, correlation analyses revealed a significant negative relationship between the dependent variables. In addition, several significant correlations were noted between the dependent variables and the potential covariates. Each of the three covariates was significantly correlated with at least one of the dependent variables, with the exception of Locus of Control, which nonetheless is correlated with Harmony control to a degree that very nearly achieves statistical significance ($p = .051$). Based upon the results of the correlation analyses, the appropriate method of analysis for the tests of hypotheses was determined to be repeated measures multivariate analysis of covariance (MANCOVA), to include all of the covariates identified in Table 7. Tables 8, 9, and 10 provide all of the correlations described above for each of the three age groups. Tables 11 and 12 provide the correlations for the high and low-ability groups. Though some age-specific and ability-specific inter-item correlations

vary from those observed overall, no results shown in Tables 8 – 12 contradict the use of MANCOVA as the appropriate method of analysis.

Table 7. Correlation coefficients and significance levels for dependent variables and covariates (all ages combined; $ns = 144$).

	Primary Control	Harmony Control	Overall Expertise	Locus of Control	Need For Cognition
Primary Control					
Harmony Control	-.466**				
Overall Expertise	.283**	-.318**			
Locus of Control	.088	-.165 ^a	.049		
Need for Cognition	.291**	-.108	.169*	-.004	

*. Correlation is significant at the 0.05 level (2-tailed)
 **. Correlation is significant at the 0.01 level (2-tailed)
^a Correlation approaches significance ($p = .051$; 2-tailed)

Table 8. Correlation coefficients and significance levels for dependent variables and covariates (young adults; $ns = 48$).

	Primary Control	Harmony Control	Overall Expertise	Locus of Control	Need For Cognition
Primary Control					
Harmony Control	-.492**				
Overall Expertise	.325**	-.607**			
Locus of Control	-.060	.004	.016		
Need for Cognition	.378**	-.292*	.300*	-.118	

*. Correlation is significant at the 0.05 level (2-tailed)
 **. Correlation is significant at the 0.01 level (2-tailed)

Table 9. Correlation coefficients and significance levels for dependent variables and covariates (middle adults; $ns = 48$).

	Primary Control	Harmony Control	Overall Expertise	Locus of Control	Need For Cognition
Primary Control					
Harmony Control	-.310**				
Overall Expertise	.415**	-.225			
Locus of Control	.042	-.285 ^b	.016		
Need for Cognition	.264 ^a	-.180	.025	.098	

*. Correlation is significant at the 0.05 level (2-tailed)
 **. Correlation is significant at the 0.01 level (2-tailed)
^a Correlation approaches significance ($p = .070$; 2-tailed)
^b Correlation approaches significance ($p = .054$; 2-tailed)

Table 10. Correlation coefficients and significance levels for dependent variables and covariates (older adults; $ns = 48$).

	Primary Control	Harmony Control	Overall Expertise	Locus of Control	Need For Cognition
Primary Control					
Harmony Control	-.532**				
Overall Expertise	.026	-.159			
Locus of Control	.240*	-.206	.079		
Need for Cognition	.210	.069	.111	-.052	

*. Correlation is significant at the 0.05 level (2-tailed)
 **. Correlation is significant at the 0.01 level (2-tailed)
^a Correlation approaches significance ($p = .11$; 2-tailed)

Table 11. Correlation coefficients and significance levels for dependent variables and covariates (low-ability subjects; $69 \leq ns \leq 71$).

	Primary Control	Harmony Control	Overall Expertise	Locus of Control	Need For Cognition
Primary Control					
Harmony Control	-.332**				
Overall Expertise	.383**	-.310**			
Locus of Control	.040	-.142	.009		
Need for Cognition	.323**	-.050	.241*	-.041	

*. Correlation is significant at the 0.05 level (2-tailed)
 **. Correlation is significant at the 0.01 level (2-tailed)

Table 12. Correlation coefficients and significance levels for dependent variables and covariates (high-ability subjects; $71 \leq ns \leq 73$).

	Primary Control	Harmony Control	Overall Expertise	Locus of Control	Need For Cognition
Primary Control					
Harmony Control	-.523**				
Overall Expertise	.143	-.265*			
Locus of Control	.106	-.167	.062		
Need for Cognition	.206 ^a	-.080	.042	.005	

*. Correlation is significant at the 0.05 level (2-tailed)
 **. Correlation is significant at the 0.01 level (2-tailed)
^a Correlation approaches significance ($p = .081$; 2-tailed)

Cognitive Age Versus Chronological Age

Subjects were compared by chronological age and cognitive age. Whereas subjects varied in chronological age from 18 to 70 years of age, they varied in cognitive age from 12.5 to 65 years of age. For the total sample, cognitive age ($M = 39.11$, $SD = 13.05$) was significantly less than chronological age ($M = 43.27$, $SD = 16.50$), $t(142) = 7.00$, $p < .001$.

The sample was divided into three cognitively-defined groups. The cognitively young group consisted of 49 subjects, whose cognitive ages ranged from 12.5 to 30 years. Thirty-nine were members of the chronologically young group, and 10 were members of the chronologically middle-aged group. The cognitively middle-aged group also consisted of 49 subjects, whose cognitive ages ranged from 32.5 to 45 years. Nine were members of the chronologically young group, 34 were members of the chronologically middle-aged group, and 6 were members of the chronologically older-aged group. The cognitively

older-aged group consisted of 45 subjects, whose cognitive ages ranged from 47.5 to 65 years. None were members of the chronologically young group, 3 were members of the chronologically middle-aged group, and 42 were members of the chronologically older-aged group.

To assess the degree to which the chronologically-defined and cognitively-defined groups differed in their composition, a crosstabulation of two groups was performed. A goodness-of-fit test of the two group distributions showed that the two groups differed in their composition, $\chi^2(4) = 151.97, p < .001$. A significant number of subjects viewed themselves as belonging to a cognitively-defined age group that was different than their chronologically-defined age group.

Though the two methods of defining the age groups are clearly not equivalent, choosing between them for the purposes of data analysis is not straightforward. To shed additional light on the question, two approaches were taken. First, from a practical perspective, it is easier and more natural, upon meeting a customer, for a marketer to quickly estimate his/her chronological age than it is his/her cognitive age. Accordingly, a marketer is, from the practical perspective, more likely to employ a subjective measure of chronological age than some measure of cognitive age.

Second, four separate simple stepwise regression analyses were run. First, using the Primary control measure as the dependent variable, measured cognitive and chronological Age were selected as independent variables. This analysis was run a second time, this time with Harmony control as the dependent variable. The third and fourth runs of the regression analysis were identical to the first and second, except grouped (i.e., young,

middle, older groups) cognitive and chronological Age were selected as the independent variables. For each run, probability of F for entry was set at $p = .05$ and, for removal, $p = .10$. In each of the four stepwise regression runs, chronological age was entered into the model by the algorithm in favor of cognitive age. In each case the model was modestly significant (R^2 's ranged from .028 to .045; $ps < .05$; see Table 13), and in each case the independent variable's standardized β was also significant (β es ranged from .168 to .212; $ps < .05$).

Table 13. Model descriptive statistics for stepwise regression comparisons of chronological versus cognitive age.

	Model R^2	Chronological Age β	t score	Sig.
Model 1 ^a $F(1, 141) = 6.62^*$	.045	.212	2.57	.011
Model 2 ^b $F(1, 141) = 4.92^*$	.034	-.184	-2.22	.028
Model 3 ^c $F(1, 141) = 5.46^*$	.037	.193	2.34	.021
Model 4 ^d $F(1, 141) = 4.12^*$	.028	-.168	-2.03	.044

* All $ps < .05$
^a Model 1 DV = Primary control; IVs for selection = chronological and cognitive age
^b Model 2 DV = Harmony control; IVs for selection = chronological and cognitive age
^c Model 3 DV = Primary control; IVs for selection = chronological and cognitive age (cat.)
^d Model 4 DV = Harmony control; IVs for selection = chronological and cognitive age (cat.)

Taken together, the practical and statistical analyses suggest selection of chronological age groups as the appropriate means of operationalizing the Age variable in

the analysis, in favor of cognitive age. The effect of utilizing the cognitive age variable, however, will be assessed by means of follow-up analysis, after hypothesis testing.

Gender Differences on Dependent Variables

To assess the possibility of gender differences in responses on the dependent variables, Primary and Harmony control, multivariate analysis of variance (MANOVA) was conducted with Gender as an independent variable and the summary scores for Primary and Harmony control as dependent variables. There was no multivariate effect of Gender on the combination of the dependent variables (Wilks' lambda = .992, $p > .05$). All subsequent comparisons were thus collapsed across the Gender variable.

Tests of Hypotheses

Preliminary Analysis

A 3 (age group) x 2 (ability) x 2 (motivation level) x 6 (booklet version) repeated measures MANCOVA was conducted with Primary and Harmony control-related decision behavior as dependent variables. Booklet version was included in the analysis because the versions differed in terms of whether there were two high and one low-motivation scenario, or vice-versa. Ability was a between subjects variable, and Motivation level was a within-subjects variable. Expertise, Locus of Control, and Need for Cognition were included in the analysis as covariates.

There was a multivariate effect of Booklet version on the combination of dependent variables (Wilks' Lambda = .791, $p < .01$). Univariate tests of between subjects effects

revealed that this effect was significant for Primary control but not Harmony control, F_s (5, 138) = 4.09, $p < .01$ and .144, $p = .981$, respectively. Post-hoc examination of the means of the six versions revealed that Primary control scores tended to be higher for versions in which there were two high-motivation scenarios than in versions with only one high-motivation scenario (see Table 14). A simple effects test revealed that Primary control for versions with two high-motivation scenarios ($M = 5.46$, $SD = .65$) was higher than for versions with only one high-motivation scenario ($M = 5.16$, $SD = .59$; $F(1, 142) = 8.435$, $p < .01$).

Table 14. Primary control mean scores and standard deviations for all versions; for versions with one versus two high-motivation scenarios; for high-motivation scenarios only; and for each version (1 – 6).

Version	Primary control Mean score	Standard Deviation
All versions, high and low (overall)	5.31	.64
All high scenarios, across versions	5.40	.74
Versions with two high (one low)	5.46	.65
Versions with one high (two low)	5.16	.59
Version 1	5.48	.64
Two high, one low		
Version 2	4.91	.68
One high, two low		
Version 3	5.26	.60
Two high, one low		
Version 4	5.22	.48
One high, two low		
Version 5	5.64	.68
Two high, one low		
Version 6	5.35	.52
One high, two low		

Despite the significant effect of Booklet version on Primary control scores, it was decided to drop Booklet version from the analysis. This decision was made, first, because collapsing across versions did not produce a significant change in mean scores for high motivation Primary control. Mean Primary control on versions with two high-motivation scenarios ($M = 5.46$, $SD = .65$) was not significantly different than Primary control for high-motivation scenarios in the aggregate (i.e., high motivation Primary control scores averaged across all booklets, $M = 5.40$, $SD = .74$; $t(143) = .11$, $p = .914$, one-sample t-test). Second, the statistically insignificant change that did result only served to minimally depress the level of high-motivation Primary control mean scores. Thus, a very small degree of conservatism was added to the hypothesis tests, rather than liberality. Finally, elimination of booklet version from the analysis served to simplify interpretation of the results.

Of the three covariates, Expertise and Need for Cognition were significantly related to the multivariate combination of the dependent variables (Wilks' Lambdas = .923 and .939 respectively, $ps < .05$). There were no interactions between Expertise and any of the independent variables. However, the significant main effect of Need for Cognition was qualified by an interaction with Motivation level (Wilks' Lambda = .930, $p < .01$). This interaction will be further evaluated by means of follow-up analysis (see "Follow-up Analysis" section of this Chapter).

Univariate tests of between subjects effects revealed that Expertise was significantly related to both Primary control ($F = 11.53$, $p < .001$), and Harmony control ($F = 10.43$, $p < .01$). These relationships reflect the correlations between Expertise and the dependent

variables observed earlier. Recall that correlation analysis showed that Expertise is related positively to Primary control ($r = .283$) and negatively to Harmony control ($r = -.318$).

Based upon the results of the preliminary analysis, subsequent tests of hypotheses were conducted while including both Expertise and Need for Cognition in the analysis as covariates. The other potential covariate, Locus of Control, was eliminated from the analysis. Most of the tests of hypotheses that follow are based upon a 3 (age group) x 2 (ability) x 2 (motivation level) repeated measures MANCOVA, with Primary control and Harmony control as dependent variables (when appropriate or necessary, tests are performed using ANOVA [hypothesis H1a] or t -testing [hypotheses H2b, H2c; H3b, H3c; H6a – d]. Table 15 provides mean scores and standard deviations for the dependent, independent, and covariate variables for the entire sample, for each age group, by ability level. Note that the means listed in Table 15 may differ from those computed by MANCOVA (as presented in the subsequent tests of hypotheses).

Table 15. Means and standard deviations for dependent, independent, and covariate variables, by age and ability level ($ns = 144$ for superior rows overall; $ns = 48$ for age columns within superior rows; Ability is a median split, low $n = 71$; high $n = 73$).

Variable	Young Adults		Middle Adults		Older Adults		Overall	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Primary Control	5.23	0.65	5.17	0.61	5.53	0.61	5.31	0.64
Low Ability	5.19	0.56	4.99	0.58	5.36	0.63	5.18	0.60
High Ability	5.26	0.73	5.36	0.58	5.68	0.57	5.44	0.65
Harmony Control	3.55	0.65	3.44	0.51	3.28	0.81	3.43	0.65
Low Ability	3.62	0.53	3.58	0.50	3.54	0.73	3.58	0.59
High Ability	3.48	0.61	3.31	0.50	3.05	0.83	3.28	0.68
Age	25.00	4.05	41.00	3.93	63.73	4.17	43.24	16.45
Low Ability	24.00	4.38	41.17	3.40	64.74	4.00	43.00	17.18
High Ability	26.00	3.51	40.83	4.46	62.80	4.18	43.48	15.81
Ability	20.25	6.44	20.83	6.52	20.44	7.01	20.51	6.62
Low Ability	14.79	4.00	15.42	4.50	14.70	5.61	14.97	4.68
High Ability	25.71	2.56	26.25	2.33	25.72	2.59	25.89	2.48
Ncog ^a	33.44	12.43	29.96	13.85	33.08	11.56	32.16	12.60
Low Ability	32.25	12.33	26.67	12.43	30.17	12.28	29.69	12.39
High Ability	34.63	12.35	33.25	14.65	35.76	10.37	34.56	12.42
Expertise	12.34	3.34	11.19	2.78	12.67	2.91	12.07	3.06
Low Ability	11.72	3.35	10.35	2.27	12.32	2.70	11.45	2.89
High Ability	12.96	3.28	12.03	3.03	13.00	3.10	12.67	3.13

^a Need for Cognition

Main Effect of Age on Decision Ability

Hypothesis H1a. Hypothesis H1a proposed that older adult subjects would exhibit lower levels of decision-making self-efficacy than younger adults. A univariate ANOVA revealed no differences in self-perceived decision ability between the age groups $F(2, 141)$

= .096, $p > .05$. The mean scores for the younger adults ($M = 20.25$, $SD = 6.44$), middle adults ($M = 20.83$, $SD = 6.52$), and older adults ($M = 20.44$, $SD = 7.01$) were not statistically different from one another. Young, middle-aged, and older adults did not differ in their decision-making ability perceptions (see Table 15 above).

Subjects were subsequently assigned to either a high-ability group or a low-ability group based upon a median split. Though the test of hypothesis H1a did not reveal differences in decision-making ability perceptions between the age groups, the median split was nonetheless performed within age groups to adhere to the *a priori* plan to do so. This method proved beneficial in that it produced high and low-ability groups of equal size ($N = 24$ each) for each age group, except for the older adult group (high-ability $n = 23$; low-ability $n = 25$).

Main Effect of Age on Harmony Control-Related Decision Behavior

Hypothesis H1b. Hypothesis H1b proposed that older adult subjects would exhibit higher levels of harmony control-related decision behavior than younger adults. The multivariate effect of Age group on the combination of the dependent variables was marginally significant (Wilks' Lambda = .966, $p = .106$). A planned test of between-subjects effects revealed that Primary control varied by Age, $F(2, 131) = 3.106$, $p < .05$, but that Harmony control did not. For Harmony control, younger adult scores ($M = 3.61$, $SD = .57$), middle adult scores ($M = 3.44$, $SD = .51$), and older adult scores ($M = 3.43$, $SD = .81$) were not statistically different from each other. Thus, hypothesis H1b is not supported.

The effects of Age on Primary control will be evaluated further in subsequent follow-up analysis.

Main Effects of Motivation

Hypothesis H2a. Hypothesis H2a predicted that subjects who are highly motivated to make a good decision would exhibit more primary control-related decision behavior than subjects whose motivation is low. The multivariate effect of Motivation was marginally significant (Wilks' Lambda = .966, $p = .106$). A planned within-subjects contrast revealed that this effect was not significant for Primary control, $F(1, 132) = .321, p = .572$, but that it was significant for Harmony control, $F(1, 132) = 4.564, p < .05$. For Primary control, scores in the high-motivation condition ($M = 5.41, SD = .75$) and in the low-motivation condition ($M = 5.12, SD = .78$), though directionally supportive of the hypothesis, were not statistically different from each other. Hypothesis H2a is not supported.

Tbachnick and Fidell (1996) discuss the problem of a non- or marginally significant multivariate F but a significant univariate F for one of the DVs as being a potential problem with multivariate analysis of variance. This problem results from the lower statistical power of the multivariate F , when compared to the univariate F . These authors offer the suggestion that, when faced with this situation, the researcher is confined to offering the univariate result as a guide to further research (Tbachnick and Fidell, 1996, p. 410). Accordingly, the effects of Motivation on the dependent variables will be further evaluated (a) in the context of potential interactions with other independent variables (see tests of hypotheses H4a – H5c) and (b) in subsequent follow-up analysis.

Hypothesis H2b. Hypothesis H2b proposed that subjects who are highly motivated to make a good decision would exhibit more primary control-related than harmony control-related decision behavior. To test this hypothesis, separate mean scores for Primary and Harmony control were computed across high-motivation scenarios. A t-test revealed that the high-motivation Primary control mean score ($M = 5.41$, $SD = .75$) was significantly higher than the high-motivation Harmony control mean score ($M = 3.86$, $SD = .74$), $t(141) = 14.61$, $p < .001$. Subjects in the high-motivation condition scored higher on Primary than on Harmony control-related decision behavior. Hypothesis H2b is supported.

Hypothesis H2c. Hypothesis H2c predicted that subjects whose motivation to make a good decision is low would exhibit more harmony control-related than primary control-related decision behavior. This prediction was not supported. As described above for the high-motivation condition, separate mean scores for Primary and Harmony control were computed across all low-motivation scenarios. A t-test revealed that low-motivation Harmony control scores were not higher than low-motivation Primary control scores ($M_s = 3.11$, $SD = .74$ and 5.11 , $SD = .78$ respectively), but that the opposite was true, $t(140) = 19.04$, $p < .001$. Therefore, as was the case for high-motivation subjects, subjects in the low-motivation condition likewise exhibited a preference for Primary control over Harmony control-related decision behavior.

Main Effects of Ability

Hypothesis H3a. Hypothesis H3a proposed that subjects whose perceptions of ability to make a good decision are high would exhibit more primary control-related

decision behavior than subjects whose ability perceptions are low. The multivariate influence of Ability perceptions on the combination of dependent variables was not significant (Wilks' Lambda = .976, $p > .05$). Though the effect is in the hypothesized direction, subjects in the high-ability group ($M = 5.33$, $SD = .60$) did not score significantly higher than subjects in the low-ability group ($M = 5.19$, $SD = .65$). Thus, hypothesis H3a is not supported.

Hypothesis H3b. Hypothesis H3b predicted that subjects whose perceptions of ability to make a good decision are high would exhibit more primary control-related than harmony control-related decision behavior. This hypothesis is supported. Separate mean scores for Primary and Harmony control were computed for all high-ability subjects. A t-test revealed that the high-ability group's Primary control mean score ($M = 5.44$, $SD = .65$) was significantly higher than that group's Harmony control mean score ($M = 3.28$, $SD = .68$), $t(72) = 15.96$, $p < .001$.

Hypothesis H3c. Hypothesis H3c anticipated that subjects whose self-perceived ability to make a good decision was low would exhibit more harmony control-related than primary control-related decision behavior. This hypothesis was not supported. As was described above for high-ability subjects, separate mean scores for Primary and Harmony control were computed for all low-ability subjects. A t-test revealed an effect opposite that which was predicted. The low-ability group's Primary control mean score ($M = 5.18$, $SD = .60$) was significantly higher than that group's Harmony control mean score ($M = 3.58$, $SD = .59$), $t(70) = 13.86$, $p < .01$.

Interaction of Motivation and Ability on Primary Control-Related Behavior

Hypotheses H4a, H4b. Together, hypotheses H4a and H4b predict an interactive effect of motivation and ability on levels of primary control-related decision behavior. Specifically, they predicted (a) that the highest levels of Primary control would be found for subjects in the high-motivation/high-ability condition, and (b) that, concomitantly, all other conditions would exhibit lower levels of Primary control. As was described in tests of H2a and H3a (above), neither Motivation nor Ability levels had a significant main effect upon Primary control. However, the preplanned analysis revealed a marginally significant multivariate interaction of the two variables (Wilks' Lambda = .963, $p = .085$). Within subjects contrasts showed that the interaction was significant for Primary control, $F(1, 131) = 4.625, p < .05$. High-motivation/high-ability subjects ($M = 5.55, SD = .71$) exhibited higher levels of Primary control than did high-motivation/low-ability subjects ($M = 5.25, SD = .72$), low-motivation/high-ability subjects ($M = 5.11, SD = .82$), or low-motivation/low-ability subjects ($M = 5.13, SD = .75$). A simple effects test showed that low-ability subjects do not differ by Motivation level, $F(1, 65) = .70, p > .05$. Similarly, Primary control scores within the low-motivation condition do not differ between the high and low-ability groups, $F(1, 141) = .118, p > .05$. These results are presented graphically in Figure 4.

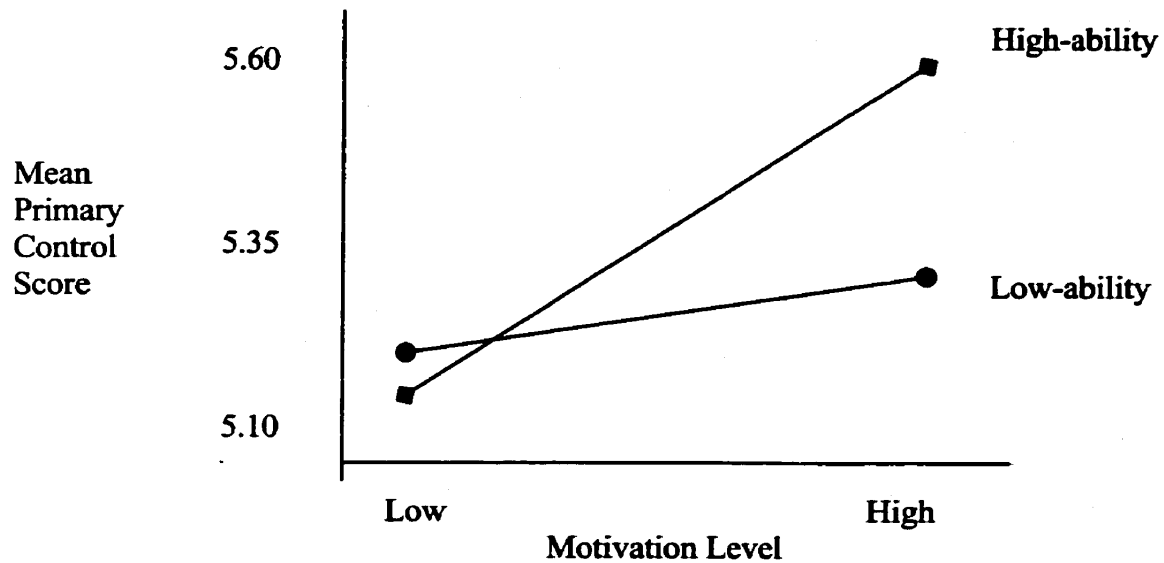


Figure 4. Interaction Effect of Motivation and Ability Level on Primary Control.

Interaction of Motivation and Ability on Harmony Control-Related Behavior

Hypotheses H5a, H5b, and H5c. Together, hypotheses H5a – H5c anticipate an interactive effect of Motivation and Ability on Harmony control levels. As indicated above (tests of hypotheses H4a, H4b), the preplanned analysis revealed a marginally significant multivariate interaction of the two variables (Wilks' Lambda = .963, $p = .085$). Within subjects contrasts showed, however, that the interaction was significant only for Primary control, $F(1, 131) = 4.625, p < .05$, and not for Harmony control, $F(1, 131) = 1.897, p > .05$. Thus, hypotheses H5a, H5b, and H5c are not supported.

Interaction of Motivation and Ability on the Primary/HC-Related Behavior Relationship

Taken together, Hypotheses H6a – H6d anticipate an interactive effect of motivation and ability on the relationship between primary and harmony control-related decision behavior. Specifically, primary control should exceed harmony control for high-motivation/high-ability subjects and low-motivation/high-ability subjects. Harmony control, however, should exceed primary control for high-motivation/low-ability subjects and low-motivation/low-ability subjects.

Hypothesis H6a. Hypothesis H6a proposed that subjects whose motivation and perceived ability to make a good decision were both high would exhibit more Primary control-related decision behavior than Harmony control-related decision behavior. To test this hypothesis, the high-motivation scenario Primary and Harmony control mean scores (computed to test Hypothesis H2b) were compared after selecting out (i.e., removing from the analysis) low-ability subjects. A t-test showed the mean Primary control score for high-motivation/high-ability subjects ($M = 5.64$, $SD = .71$) to be significantly greater than the mean Harmony control score for that group ($M = 3.67$, $SD = .79$), $t(71) = 13.04$, $p < .001$. Hypothesis H6a is supported.

Hypothesis H6b. Hypothesis H6b predicted that subjects whose motivation is low but perceived ability to make a good decision is high would exhibit more primary control-related decision behavior than harmony control-related decision behavior. To test this hypothesis, the low-motivation scenario Primary and Harmony control mean scores (computed to test Hypothesis H2c) were compared after selecting out (i.e., removing from the analysis) low-ability subjects. A t-test showed the mean Primary control score for low-

motivation/high-ability subjects ($M = 5.14$, $SD = .81$) to be significantly greater than the mean Harmony control score for that group ($M = 3.02$, $SD = .74$), $t(69) = 13.73$, $p < .001$. Hypothesis H6b is supported.

Hypothesis H6c. Hypothesis H6c predicted that subjects whose motivation is high but perceived ability to make a good decision is low would exhibit more harmony control-related decision behavior than primary control-related decision behavior. To test this hypothesis, the high-motivation scenario Primary and Harmony control mean scores (computed to test Hypothesis H2b) were compared after selecting out (i.e., removing from the analysis) high-ability subjects. A t-test showed the mean Harmony control score for high-motivation/low-ability subjects ($M = 4.05$, $SD = .63$) to be significantly less than the mean Primary control score for that group ($M = 5.18$, $SD = .72$), $t(69) = 8.49$, $p < .001$. Thus, the effect is the opposite of that predicted. Hypothesis H6c is not supported.

Hypothesis H6d. Hypothesis H6d predicted that subjects whose motivation and perceived ability to make a good decision are both low would exhibit more harmony control-related decision behavior than primary control-related decision behavior. To test this hypothesis, the low-motivation scenario Primary and Harmony control mean scores (computed to test Hypothesis H2c) were compared after selecting out (i.e., removing from the analysis) high-ability subjects. A t-test showed the mean Harmony control score for low-motivation/low-ability subjects ($M = 3.19$, $SD = .72$) to be significantly less than the mean Primary control score for that group ($M = 5.09$, $SD = .75$), $t(70) = 13.21$, $p < .001$. Thus, the effect is the opposite of that predicted. Hypothesis H6d is not supported.

The results of testing Hypotheses H6a – H6d do not support the anticipated interactive effect of Motivation and Ability on the Primary/Harmony control relationship. Instead, these results suggest simply that subjects who consider themselves to possess high levels of decision-making ability (a) prefer primary control over harmony control, and (b) tend more strongly toward use of primary control for important decisions than unimportant decisions (see Figure 5). Recall that the difference in Primary control levels for High-motivation/High-ability subjects, relative to Low-motivation/High-ability subjects, as indicated in Figure 4, was shown to be statistically significant in the previously described tests of Hypotheses H4a and H4b.

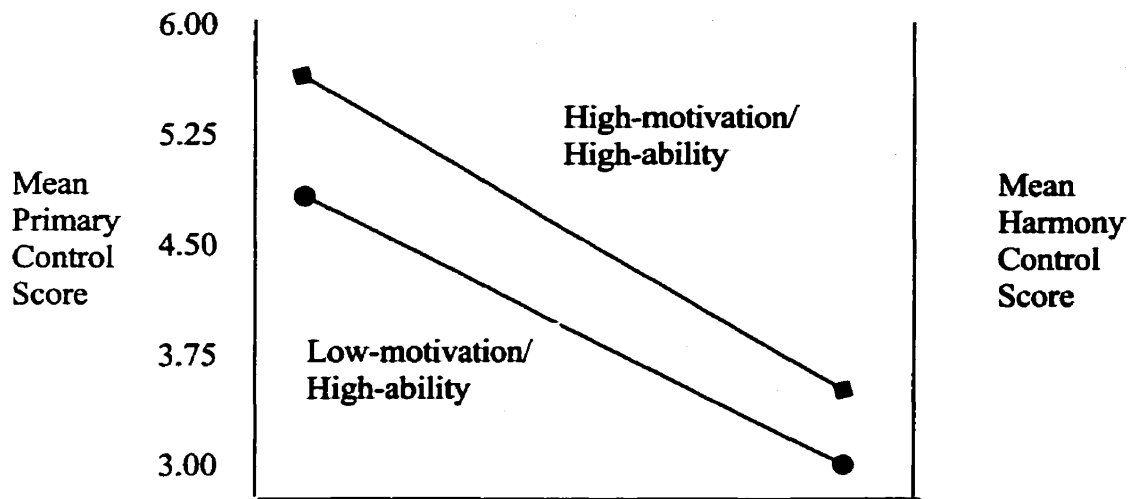


Figure 5. Effect of Motivation and Ability Level on the Primary/Harmony Control Relationship.

Table 16 provides a summary of the tests of all hypotheses by number, predicted effect, and result of testing. These results will be discussed in greater detail in Chapter V. Table 17 provides mean scores for primary and harmony control overall and under each of the four experimental conditions (motivation/ability combinations). These means are reported as computed within the MANCOVA analysis.

Figure 6 reproduces Figure 3 (see Chapter II). In Figure 6, subjects from each of the four experimental conditions are assigned to the cells in which they belong according to the results of the experiment. The mid-points of the vertical and horizontal axes are the overall means for Primary and Harmony control, respectively, as reported in Table 17. Subjects are assigned to cells based upon their respective group means, relative to those overall means.

Table 16. Summary of hypotheses tested.

Hypothesis Number	Anticipated Effect	Results of Testing
H1a	Older adults lower in decision self-efficacy	NS*
H1b	Older adults higher in Harmony control	NS*
H2a	High-motivation Primary > Low-motivation Primary	NS*
H2b	High-motivation Primary > High-motivation Harmony	Supported
H2c	Low-motivation Harmony > Low-motivation Primary	NS; opposite effect
H3a	High-ability Primary > Low-ability Primary	NS*
H3b	High-ability Primary > High-ability Harmony	Supported
H3c	Low-ability Harmony > Low-ability Primary	NS; opposite effect
H4a, H4b	Interaction of Motivation and Ability on Primary	Supported
H5a, H5b, H5c	Interaction of Motivation and Ability on Harmony	NS*
H6a	High-motivation/High-ability Primary > Harmony	Supported
H6b	Low-motivation/High-ability Primary > Harmony	Supported
H6c	High-motivation/Low-ability Harmony > Primary	NS; opposite effect
H6d	Low-motivation/Low-ability Harmony > Primary	NS; opposite effect

* Not Supported; insignificant effect

Table 17. Primary and harmony control mean scores: overall and within experimental conditions^a.

Experimental Condition	Primary Control	Harmony Control
Overall Mean Scores	5.31	3.43
High _{Ability} High _{Motivation}	5.64	3.67
High _{Ability} Low _{Motivation}	5.14	3.02
Low _{Ability} High _{Motivation}	5.18	4.05
Low _{Ability} Low _{Motivation}	5.09	3.19

^a Means reported are not evaluated for statistical difference (see preceding section).

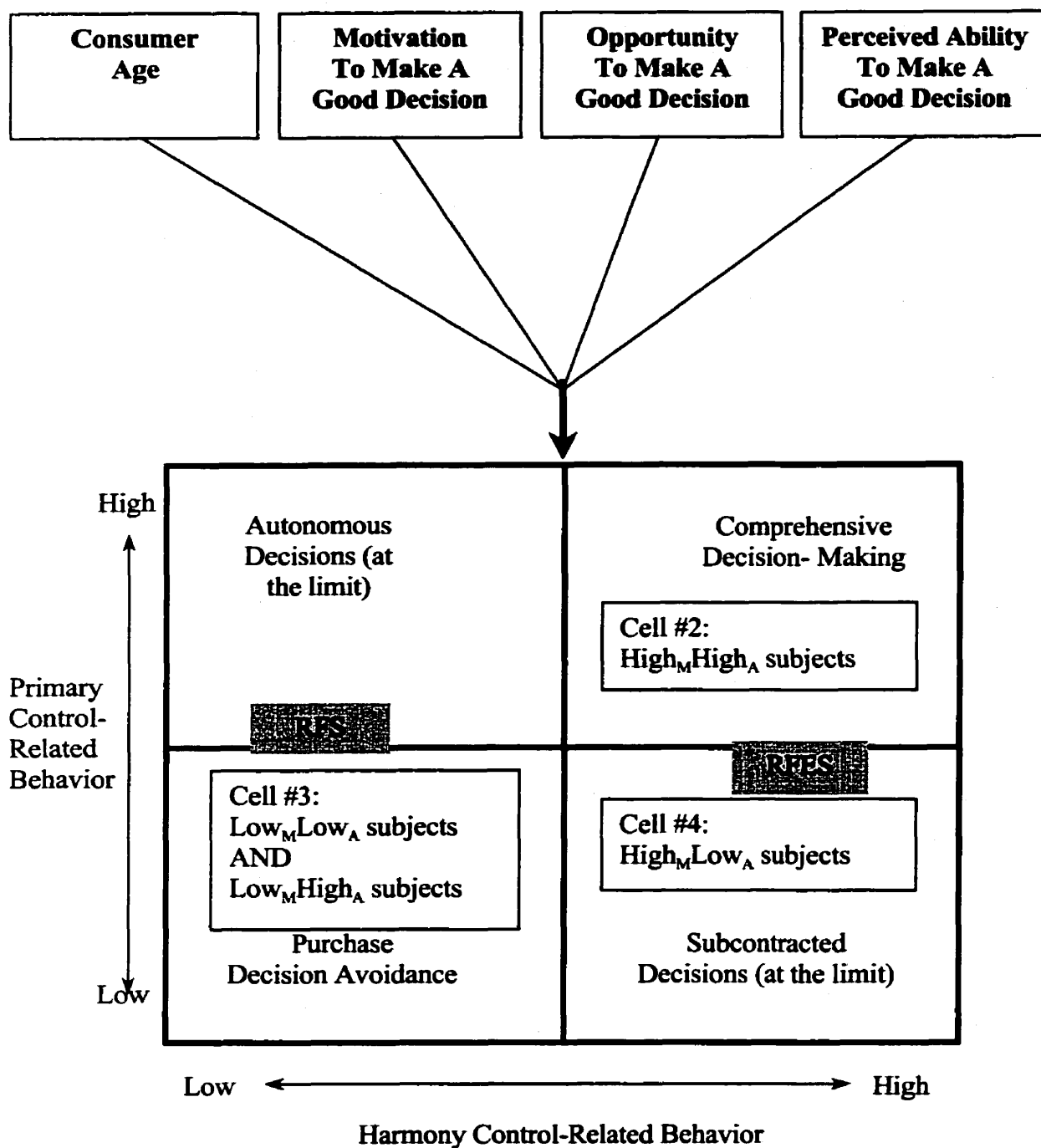


Figure 6. Assignment of Experimental Conditions (groups) to the Full Model of Control-Related Dependency in Decision Making. Older adults score higher in Primary control-related decision behavior. Older adults score lower in Harmony control for important decisions.

Follow-up Analysis

Follow-up analysis was conducted for six purposes. First, the Need for Cognition covariate interacted with Motivation to affect Primary control levels. This relationship will be evaluated below. Second, for purposes of follow-up analysis only, the Experience covariate was removed from the MANCOVA in order to ascertain its influence on the Ability/ dependent variable relationships. Third, the multivariate analysis revealed an effect of Motivation on Harmony control, which will be evaluated further. Existing literature does not provide predictive insight about this relationship, hence, no hypotheses had been advanced. Fourth, main and interactive effects of Age on Primary control-related decision behavior were not predicted, but left to follow-up analysis. Fifth, as previously discussed, selecting between the two different methods of operationalizing the age variable was not straightforward. Changes in results of the hypothesis tests, had the repeated measure MANCOVA been conducted using cognitively defined age groups in favor of chronologically-defined groups, are presented. Finally, as pointed out by Dr. Beth Morling (personal communications, March 19, 1998), it is important both for confirmatory and exploratory reasons to assess the factor structure of the Harmony control scale given these data. Specifically, this dissertation presents the opportunity to explore, and possibly identify, age-related differences in decision-making style that might exist as defined by the factor structure. Principal components analysis was used to identify potential objects of Harmony control (e.g., Friends, Relatives, Higher Power, Luck, etc.). The possibility that

subjects of different ages may vary in their relative utilization of those objects of Harmony control was also evaluated.

Interaction of Need for Cognition and Motivation Level on Primary Control

As previously indicated, the repeated measures MANCOVA identified a significant multivariate effect of Need for Cognition on the combination of the dependent variables (Wilks' Lambda = .939, $p < .05$). This effect was moderated by an interaction with motivation (Wilks' Lambda = .930, $p < .01$). Within-subjects contrasts showed that Primary control scores were significantly influenced by the interaction of Need for Cognition and Motivation level, $F(1, 131) = 6.56, p < .05$, but that Harmony control scores were not, $F(1, 131) = .634, p > .05$.

To explore this interaction, a median split on the Need for Cognition variable was performed ($Ns = 71$ and 68 for low and high Need for Cognition, respectively). A repeated-measures ANOVA was performed with Motivation (within-subjects variable) and Need for Cognition (split into high and low) as independent variables, and Primary control as the dependent variable. The interaction was significant, $F(1, 141) = 4.839, p < .05$. Simple effects tests showed that high Need for cognition subjects scored higher on Primary control in the high-motivation condition ($M = 5.63, SD = .70$) than in the low-motivation condition ($M = 5.19, SD = .85$), $F(1, 67) = 5.929, p < .05$. Low Need for cognition subjects scored marginally higher on Primary control in the high-motivation condition ($M = 5.17, SD = .70$) than in the low-motivation condition ($M = 5.04, SD = .70$), $F(1, 68) = 2.984, p = .089$. The difference in Primary control scores between high and low Need for Cognition subjects in

the low-motivation condition is not significant, $F(1, 141) = 1.29, p > .05$. Finally, the difference between high and low Need for Cognition subjects in the high-motivation condition is significant, $F(1, 142) = 13.62, p < .001$. Thus, this analysis showed that high Motivation and high Need for Cognition each lead to higher levels of Primary control-related decision behavior. These main effects are qualified, however, by the interaction between these two variables. Figure 7 shows these effects graphically.

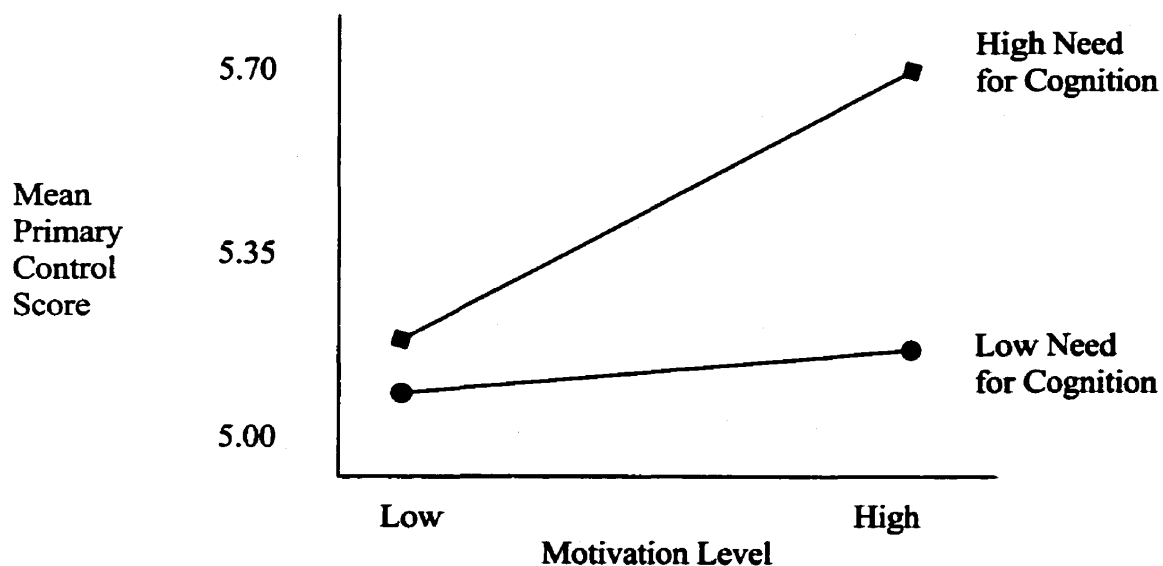


Figure 7. Interaction Effect of Need for Cognition and Motivation Level on Primary Control.

Effect of the Experience Covariate on the Ability/Dependent Variable Relationships

The test of hypothesis H3a revealed an insignificant influence of ability perceptions on the combination of dependent variables (Wilks' Lambda = .976, $p > .05$) when Expertise was included in the analysis as a covariate. Recall that Expertise was measured for each of

the specific decision scenarios within each subjects' experimental booklet, and then averaged across all decision scenarios. Ability, on the other hand, was operationalized in this study as subjects' perceptions about their consumer decision-making abilities in general (that is, without reference to any specific decision). Hence, as it is operationalized in this study, Ability may be considered a measure of subjects' broad, self-perceived consumer decision-making skill. Clearly, the Expertise covariate statistically accounts for variance in the dependent variables in this study (thus reducing the effect of Ability to insignificance). But it is nonetheless worth evaluating the possibly more domain-wide influence of the less situationally-specific Ability variable.

Accordingly, for the purposes of follow-up analysis only, the repeated measures MANCOVA was run again after removing the Expertise covariate. As before, motivation was a within-subjects variable, and age and ability were between-subjects variables. Primary and Harmony control were dependent variables. The multivariate effect of Ability was marginally significant (Wilks' Lambda = .962, $p = .078$). Tests of between-subjects effects revealed a significant univariate effect of ability on Harmony control, $F(1, 132) = 4.206, p < .05$, and a marginally significant univariate effect of ability on Primary control, $F(1, 132) = 3.096, p = .081$. High-ability subjects ($M = 3.39, SD = .68$) scored lower than low-ability subjects ($M = 3.60, SD = .59$) on Harmony control. For the marginally significant effect on Primary control, high-ability subjects ($M = 5.35, SD = .65$) scored higher than low-ability subjects ($M = 5.17, SD = .60$). Figure 8 presents these mean scores graphically. The results of this follow-up analysis suggest that overall ability perceptions may affect consumers' utilization of Primary and Harmony control-related decision

behaviors, but that situational perceptions (specifically, expertise in the focal decision context) may take precedence over these more global self-evaluations.

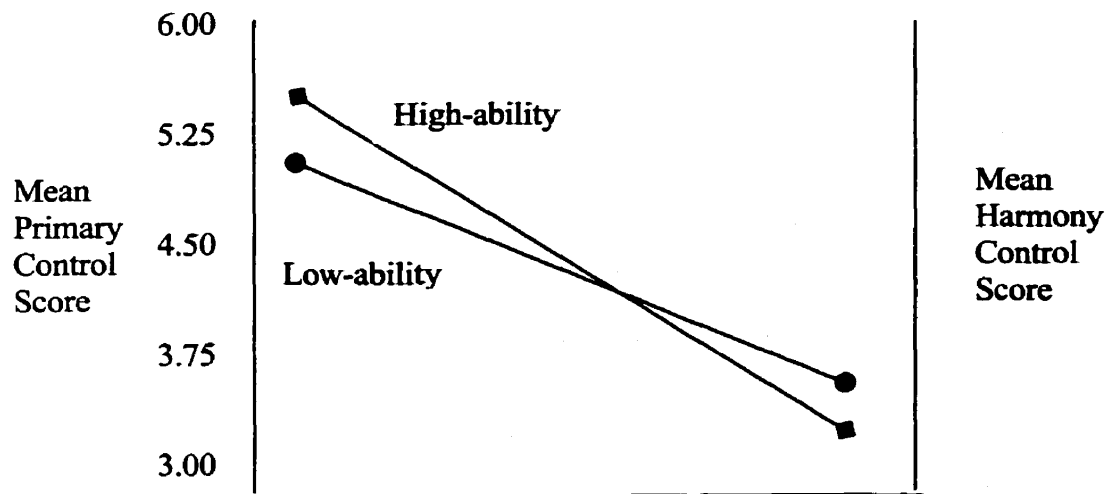


Figure 8. Effect of Ability Level on the Primary and Harmony Control in the Absence of the Expertise Covariate.

Relationship Revealed by the Main Analysis

Effect of motivation on harmony control. No hypotheses regarding the effect of motivation on harmony control levels were proposed. Hypothesis H2a had predicted that highly motivated subjects would exhibit higher levels of primary control. The multivariate effect was marginally significant (Wilks' Lambda = .966, $p = .106$). Planned within-subjects contrasts, however, showed that this effect was not significant for Primary control, $F(1, 132) = .321, p = .572$, but that it was significant for Harmony control, $F(1, 132) = 4.564, p < .05$. Harmony control scores for high-motivation subjects ($M = 3.89, SD = .70$) were greater than those for low-motivation subjects ($M = 3.10, SD = .74$; see Figure 9).

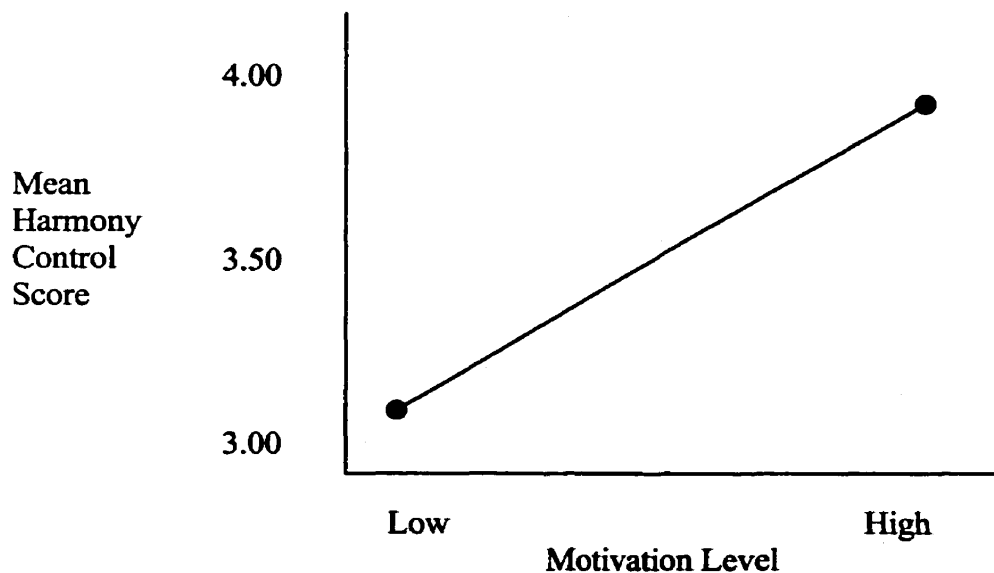


Figure 9. Effect of Motivation Level on Harmony Control.

Age Effects

Effects of Age on Primary Control. The MANCOVA revealed a marginally significant effect of Age on the linear combination of the two dependent variables (Wilks' Lambda = .943, $p = .102$). The planned test of between-subjects effects failed to support hypothesis H1b, which predicted that older adults would exhibit greater levels of Harmony control-related decision behavior than younger adults. However, Primary control did vary by Age. A test of between-subjects effects revealed that older adults ($M = 5.43$, $SD = .61$) exhibit higher levels of Primary control than middle adults ($M = 5.19$, $SD = .61$) and younger adults ($M = 5.15$, $SD = .65$), $F(2, 141) = 3.106$, $p < .05$ (see Figure 10).

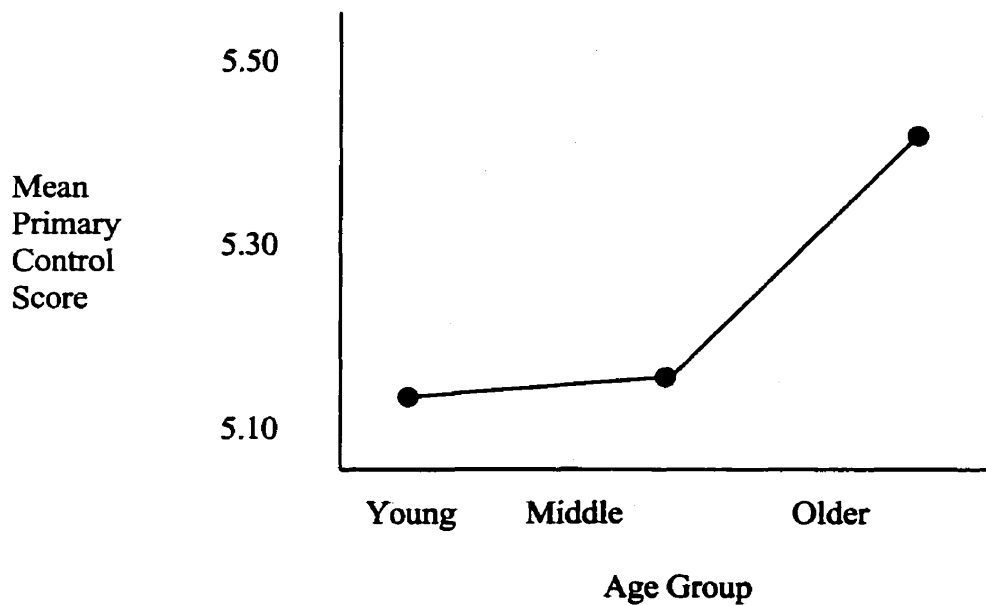


Figure 10. Effect of Age Group on Primary Control.

Interaction of Age and Motivation on Harmony Control. MANCOVA revealed that the main effect of motivation on Harmony control (identified above; see “*Effect of Motivation on Harmony Control*” subsection) is qualified by an interactive effect of Age and Motivation (Wilks’ Lambda = .890, $p < .01$). Tests of within-subjects contrasts revealed a significant interactive effect of Age and Motivation on harmony control scores, $F(2, 131) = 3.803, p < .05$. Univariate ANOVAs revealed that low-motivation Harmony control mean scores did not differ among age groups (older adults, $M = 3.15, SD = .84$; middle-aged adults, $M = 3.02, SD = .67$; young adults, $M = 3.13, SD = .67$). However, older adult Harmony control scores ($M = 3.72, SD = .82$) were lower than those of young adults ($M = 4.08, SD = .67; p < .01$) and middle-aged adults ($M = 3.86, SD = .53; p < .05$) in the high-motivation condition. Middle adult and young adult scores did not differ significantly (see figure 11).

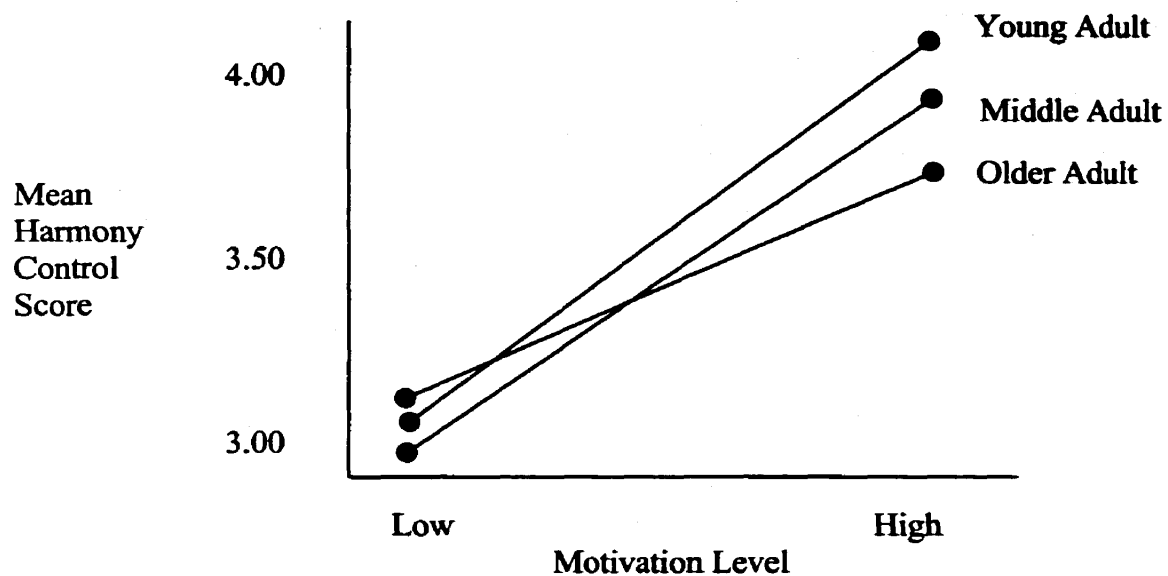


Figure 11. Interaction Effect of Age and Motivation Level on Harmony Control.

Age Operationalized Cognitively versus Chronologically

Prior to evaluating changes in the results of the hypotheses due to using cognitive versus chronological age, it was noted that some subjects, when aged cognitively instead of chronologically, “fell” into a different age group. The young, middle, and older adult cognitively-defined age groups consist of 49, 49, and 45 subjects respectively. Because the median split for ability was conducted within age groups, it had to be recomputed for these newly defined age groups. The median split resulted in 23 low and 26 high-ability young adults, 24 low and 25 high-ability middle adults, and 21 low and 24 high-ability older adults. There were no changes in the covariates selected for inclusion in the model. That is, the follow-up analysis was conducted in precisely the same manner as was the case for the original tests of hypotheses, with the exceptions of the redefined age groups and

recomputed median split on the ability variable. Only results that differed from those identified under the chronological operationalization of age are presented here.

Hypothesis H2a. Hypothesis H2a predicted that subjects who are highly motivated to make a good decision would exhibit more primary control-related decision behavior than subjects whose motivation was low. Whereas the original test of the multivariate effect of Motivation was marginally significant (Wilks' Lambda = .966, $p = .106$), the effect of operationalizing Age cognitively was to further reduce the significance of this effect (Wilks' Lambda = .975, $p = .194$). The planned within-subjects contrast again failed to identify a significant main effect of Motivation on Primary control, and reduced the significant effect on Harmony control $F(1, 132) = 4.564, p < .05$, to marginal significance, $F(1, 131) = 3.266, p < .08$. Thus, as before, Hypothesis H2a is not supported. Furthermore, evidence for an effect of Motivation level on Harmony control is reduced to marginality.

Hypotheses H5a, H5b, H5c. Together, these hypotheses anticipated an interactive effect of Motivation and Ability on Harmony control levels. As had been found previously (tests of hypotheses H4a, H4b under the chronological operationalization of Age), the preplanned analysis again revealed a marginally significant multivariate interaction of the two variables (Wilks' Lambda = .964, $p < .09$). Whereas in the first tests of hypotheses H5a – H5c the interaction was not significant for Harmony control, $F(1, 131) = 1.897, p > .05$, the interaction under the cognitive age operationalization does achieve marginal significance, $F(1, 131) = 2.749, p = .10$. High-motivation/low-ability subjects ($M = 4.05$, $SD = .62$) scored highest of the four groups, lending support to hypothesis H5a. As

predicted by H5b, high-motivation/high-ability subjects scored second highest ($M = 3.73$, $SD = .72$). These two groups differed significantly, $F = 9.902$, $p < .01$ (simple effects test). Finally, low-motivation/high-ability subjects ($M = 3.05$, $SD = .72$) and low-motivation/low-ability subjects ($M = 3.17$, $SD = .75$) scored lowest, as had been predicted by hypothesis H5c. Hence, when age is operationalized cognitively, hypotheses H5a – H5c receive conditional support, qualified by the marginal statistical significance level of the interaction (see figure 12). MANCOVA provides cautionary evidence that the main effect of motivation on Harmony control (identified above; see “*Effect of Motivation on Harmony Control*” subsection) may be qualified by an interactive effect of Ability and Motivation.

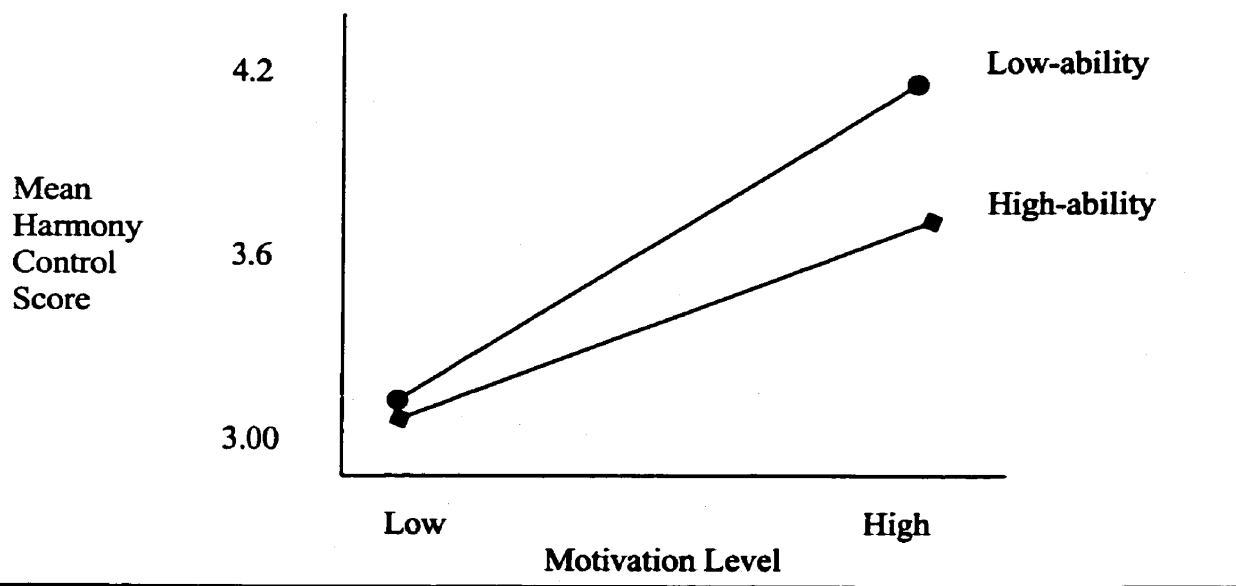


Figure 12. Marginally Significant Interaction Effect of Motivation and Ability Level on Harmony Control.

Follow-Up Analysis of the HC Scale: Principal components Analysis

Chapter III underscored the importance of evaluating the factor structure of the consumer decision version of the harmony control scale (see “Dependent Variables” subsection). For each subject, mean scores were computed across decision scenarios for each of the 18 items of the scale. A principal components analysis was performed on these scores. Varimax rotation was used to facilitate interpretation of factors (Tbachnick and Fidell, 1996). Rotation converged in 5 iterations. Four components with eigenvalues > 1 were extracted by the algorithm, explaining 62.42 % of variance. Items are listed according to their corresponding factors in Table 18. Also included in Table 18 are the items’ rotated factor loading scores.

Table 18. Named factors and corresponding HC scale items.

<u>Factors and Items</u>		<u>Rotated Factor Loading Score</u>
“Higher Power”		
Item 7	I know that a higher power will arrange for my ultimate well-being in this decision.	.870
Item 10	I would not look to a higher power for guidance.	.768
Item 11	The will of a higher power affects the outcome of this decision.	.899
Item 12	Some higher power will decide the “goodness” or “badness” of this decision.	.841
Item 17	There is no point trying to learn from some higher power what decision I should make.	.744

Table 18 (continued).

Factors and Items		Rotated Factor Loading Score
“Gain Support and Approval”		
Item 1	Meeting other people’s expectations would make the decision a good one for me.	.832
Item 3	I would not worry about anticipating anyone else’s expectations.	.662
Item 4	In this decision I would ask friends or relatives for help.	.570
Item 5	I would try to get along with others by trying to anticipate what they want or need.	.819
Item 6	I would try to fit in by doing what others would do.	.693
Item 13	It wouldn’t be that important for me to know that others will support me in this.	.619
“Wait on Luck”		
Item 2	In some sense, my decision doesn’t matter, since there is no use fighting fate.	.593
Item 14	Luck would probably determine the best choice for me.	.821
Item 15	Good and bad decisions even out in the end.	.744
Item 18	I trust luck to make the right decision for me.	.834
“Trust and Rely on Others”		
Item 8	By asking others for advice, I know the final choice won’t be a bad one.	.680
Item 9	I would not trust other people to make this decision for me.	.698
Item 16	I can rely on other people to help me.	.719

“Higher Power” is a factor that reflects subjects’ tendency to consult or rely upon a deity in decisions. “Gain Support and Approval” has a social normative connotation. The items of that dimension, collectively, suggest that meeting expectations of others may be part of making a “good” decision. “Wait on Luck” measures subjects’ propensity to view

chance or fate as playing a role in a decision process. Finally, "Trust and Rely on Others," rather than capturing social normative tendencies, measures subjects' valuation of others as advisors or even surrogate decision-makers.

These four factors were analyzed for their internal consistency characteristics. For "Higher Power," internal reliability, as measured by Cronbach's alpha, was .8874 (n of cases = 144; 5 items). No items were identified as able to improve alpha if deleted. For "Gain Support and Approval," Cronbach's alpha was .8213 (n of cases = 144; 6 items). None of the items on this factor were marked for deletion. For "Wait on Luck," Cronbach's alpha was .7548 (n of cases = 144; 4 items). For this factor, Item 2 ("... no use fighting fate.") was identified as a candidate for deletion. Deletion of the item improved alpha to .7733 (n of cases = 144; 3 items). However, because (a) alpha = .7548 indicates acceptable internal consistency (Nunnally, 1979; Robinson, Shaver, and Wrightsman, 1991), (b) actual improvement in consistency (.7548 versus .7733) is small, and (c) deletion implies losing the ability to measure propensity to attribute influence in decisions to fate, all four items of this factor were retained. Finally, for "Trust and Rely on Others," Cronbach's alpha was .5908 (n of cases = 144; 3 items). No items were suggested for deletion.

Factors 1 and 2 ("Higher Power" and "Gain Support and Approval") meet commonly accepted rules of thumb regarding acceptable levels of alpha. Nunnally (1979) suggests a minimum of .70. Robinson, Shaver, and Wrightsman (1991) advocate a lower standard, .60. Similarly, factor 3 ("Wait on Luck) achieves acceptable levels of internal consistency. Factor 4, however, achieves a marginal level of internal reliability (.5908), just less than Robinson et al.'s (1991) standard of .60. Bearden, Netemeyer, and Mobley

(1993, p. 4) state the following: "...scale length must be considered. As the number of items increases, alpha will tend to increase, and, since parsimony is also a concern in measurement, an important question is 'how many items does it take to measure a construct?' ... given that most scales are self-administered, and respondent fatigue and/or non-cooperation need to be considered, it would seem that scale brevity is often a concern" (see also Churchill and Peter, 1984). Bearden et al. suggest examination of the inter-item correlation matrix (see Table 19), and recommend Robinson et al.'s (1991) "exemplary" levels of .30. Table 19 shows that the inter-item correlations between the items of factor 4 are approximately equal to, or better than, this .30 standard. Accordingly, factor 4 is acknowledged here as being marginal in the internal reliability aspect of its psychometric properties. With that caution, however, it does offer the opportunity to examine subjects' propensity to place faith in the assistance of others in decisions. The consumer decision version of the harmony control scale might well benefit from further development, specifically, the careful addition of items to those that currently make up the "Trust and Rely on Others" factor.

Table 19. Correlation coefficients and significance levels for items of the "Trust and rely on others" factor.

	Item 8	Item 9	Item 16
Item 8			
Item 9	.296**		
Item 16	.389**	.295**	

** . Correlation is significant at the 0.01 level (2-tailed)

Follow-Up Analysis of the HC Scale: Age-Related Differences in Decision-Making Style

Though the multivariate analysis failed to support the (main effect) hypothesis that harmony control varies by age, it is entirely possible that adults of different ages might vary on the principal components of harmony control. In other words, beyond the possibility that younger and older adults might differ in terms of dependency, this dissertation provides the opportunity to explore how consumers of different ages might vary in their choices of (harmony control-related) objects of dependency.

Factor Descriptive Statistics. Harmony control scores were computed for each of the four factors, for each subject. Each factor's respective items were summed (across all decision scenarios), and means were calculated both overall and for each age group (see Table 20). Overall means ranged from a high of 4.81 (Trust and Rely on Others; Young Adults) to a low of 1.85 (Wait on Luck; Middle Adults). Overall mean scores fell within these extremes. In Table 20, overall means are compared for statistically significant differences. Age differences for each of the four dimensions are evaluated in the following section.

Table 20. Means and standard deviations for the four factors of the consumer decision harmony control scale (Overall $ns = 144$; ns within age groups = 48).

	Mean	SD
Trust and Rely on Others (Overall)	4.38 ^{ab}	1.03
(Young Adult)	4.81	0.95
(Middle Adult)	4.35	0.71
(Older Adult)	3.98	1.22
Higher Power (Overall)	4.13 ^{ab}	1.40
(Young Adult)	4.10	1.34
(Middle Adult)	4.52	1.26
(Older Adult)	3.78	1.50
Gain Support and Approval (Overall)	3.26 ^a	0.91
(Young Adult)	3.50	0.89
(Middle Adult)	3.16	0.95
(Older Adult)	3.12	0.87
Wait on Luck (Overall)	2.09 ^a	0.88
(Young Adult)	2.00	0.83
(Middle Adult)	1.85	0.75
(Older Adult)	2.41	0.98

^a Overall means differ, $p < .001$
^{ab} Overall means differ, marginal significance, $p = .069$

Correlations between the factors were computed for the sample in total and for each age group (see Tables 21 – 24). Overall correlations ranged from -.013 to .379. These modest correlations suggest that the four factors of the consumer decision version of the harmony control scale may measure relatively independent dimensions of harmony control in the decision context.

Table 21. Correlation coefficients and significance levels for the four factors of the consumer decision harmony control scale ($ns = 144$).

	Trust and Rely On Others	Higher Power	Gain Support and Approval	Luck
Trust and Rely on Others				
Higher Power	.141 ^b			
Gain Support and Approval	.379**	.085		
Luck	.162 ^a	-.013	.202*	
* Correlation is significant at the 0.05 level (2-tailed)				
** Correlation is significant at the 0.01 level (2-tailed)				
^a Correlation approaches significance ($p = .053$; 2-tailed)				
^b Correlation approaches significance ($p = .092$; 2-tailed)				

Table 22. Young Adults: correlation coefficients and significance levels for the four factors of the consumer decision harmony control scale ($ns = 48$).

	Trust and Rely On Others	Higher Power	Gain Support and Approval	Luck
Trust and Rely on Others				
Higher Power	.070			
Gain Support and Approval	.165	-.143		
Luck	.278 ^a	-.046	.381**	
** Correlation is significant at the 0.01 level (2-tailed)				
^a Correlation approaches significance ($p = .056$; 2-tailed)				

Table 23. Middle Adults: correlation coefficients and significance levels for the four factors of the consumer decision harmony control scale ($ns = 48$).

	Trust and Rely On Others	Higher Power	Gain Support and Approval	Luck
Trust and Rely on Others				
Higher Power	-.030			
Gain Support and Approval	.321*	-.109		
Luck	-.020	-.113	.123	

* Correlation is significant at the 0.05 level (2-tailed)

Table 24. Older Adults: correlation coefficients and significance levels for the four factors of the consumer decision harmony control scale ($ns = 48$).

	Trust and Rely On Others	Higher Power	Gain Support and Approval	Luck
Trust and Rely on Others				
Higher Power	.242 ^a			
Gain Support and Approval	.532**	.483**		
Luck	.338*	.216	.197	

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

^a Correlation approaches significance ($p = .097$; 2-tailed)

Age Differences on HC Dimensions. Because of the significant and marginally significant correlations identified above, a 3 (Age Group) x 4 (Dimension) repeated measures MANOVA was performed for Harmony control. Age Group was a between subjects factor. Dimension was a within subjects factors. The analysis revealed a

significant multivariate main effect of Dimension (Wilks' Lambda = .180, $p < .001$), indicating that the four dimension-specific harmony control scores differ (i.e., Rely on Others vs. Luck, etc.). Tests of between-subjects effects showed only a near-significant effect of Age Group, $F(2, 141) = 2.288, p = .105$, indicating (as noted in the test of Hypothesis H1b) that Harmony control does not differ by Age group at commonly accepted levels of statistical significance. The main effect of Dimension and the marginally significant effect of Age Group were qualified, however, by a significant interaction of Age group and Dimension, Wilks' Lambda = .770, $p < .001$. Thus, scores on one (or more) of the four dimensions vary by Age group.

Follow-up univariate ANOVAs were used to examine the age differences on each of the four Harmony control dimensions. Tests revealed that the mean scores for each of the four dimensions varied by age group (the effect is marginally significant for the Gain Support and Approval dimension). These univariate analyses are examined in turn in the following paragraphs. Table 20 (in the previous sub-section of this Chapter) summarizes the mean scores and standard deviations included below for each dimension, both overall and for each age group.

There was a significant effect of Age group on the Trust and Rely on Others dimension, $F = 8.50(2, 141), p < .001$. Post-hoc examination of means revealed that younger adults ($M = 4.81, SD = .95$) scored higher than middle adults ($M = 4.35, SD = .71$) and older adults ($M = 3.98, SD = 1.22, ps < .05$). Middle adults' means were marginally higher than older adult's means ($p = .068$).

There was a significant effect of Age group on the Higher Power dimension, $F = 3.49 (2, 141), p < .05$. Post-hoc tests of means showed that older adult scores ($M = 3.78, SD = 1.50$) were significantly lower than those of middle adults ($M = 4.52, SD = 1.26, p < .01$).

As indicated above, there was a marginally significant effect of Age group on the Gain Support and Approval dimension, $F = 2.56 (2, 141), p = .081$. Post-hoc tests of means revealed that young adults ($M = 3.50, SD = .89$) scored marginally higher than middle adults ($M = 3.16, SD = .95, p = .065$), and higher than older adults ($M = 3.12, SD = .87, p < .05$).

Finally, there was a significant effect of Age group on the Wait on Luck dimension, $F = 5.48 (2, 141), p < .01$. Post-hoc tests showed that older adults ($M = 2.41, SD = .98$) scored higher than both young adults ($M = 2.00, SD = .83$) and middle adults ($M = 1.85, SD = .75, ps < .05$). Young adults' means were not significantly different from those of middle adults ($p > .05$).

Figure 13 graphically summarizes the significant and marginally significant age differences in mean scores for each of the four dimensions. Figure 14 presents profiles of each age group on the four dimensions (not all profile differences are statistically significant, as indicated in the discussion above).

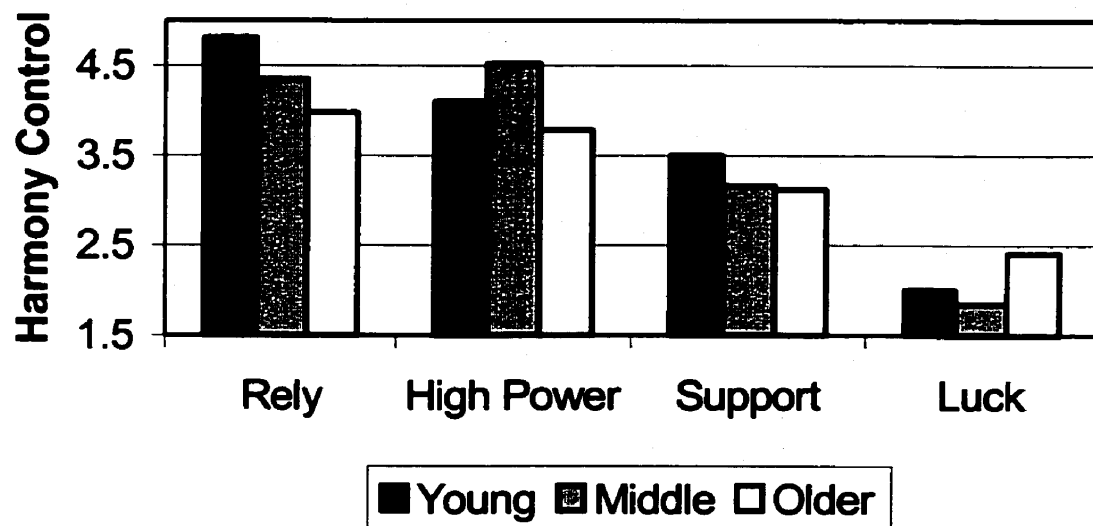


Figure 13. Age Differences on Dimensions of Harmony Control.

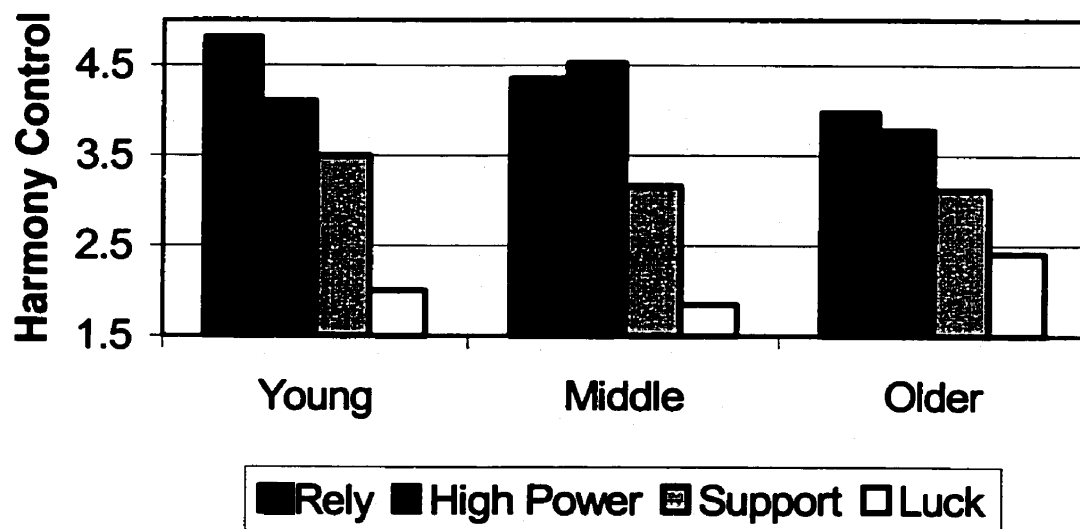


Figure 14. Age Group Profiles on Dimensions of Harmony Control.

Chapter V

Discussion

This dissertation has taken, as its point of departure, the empirical confirmation by Olshavsky and his colleagues (Formisano, Olshavsky, and Tapp, 1982; Olshavsky and Granbois, 1979; Olshavsky and Rosen, 1985; Rosen and Olshavsky, 1987a, 1987b) that consumers do not always choose to retain full control over their decisions. Rather, consumers make some purchases under partial or even full dependence upon some outside source(s) of influence. This and other elements of the consumer research literature, the psychological literature regarding perceived control, and aspects of the gerontological literature were integrated in an attempt to provide a previously missing theoretical explanation for consumer decision dependency. Both the perceived control and the gerontological literatures provide evidence that certain types of decision-related behaviors of younger and older adult consumers might be different. The purpose of this dissertation was to articulate and test a theoretical model of control-related dependency in decision making.

The purpose of this Chapter is to examine and discuss the results of testing this theoretical model. It proceeds on two fronts. First, implications of the research and its findings for consumer behavior researchers are discussed. Summary observations about the findings are presented and evaluated. Second, ramifications pertinent to marketing personnel are described. These include conclusions, drawn from the results of the research, that may help marketers better understand their customers' decision processes.

Implications for Consumer Researchers

One contribution of this research has been to bring together a number of elements in a single study that have either not been studied together in consumer research or, even more importantly, have not been studied by consumer researchers at all. As was acknowledged early in Chapter I, consumer decision making has been studied extensively. Dependency in decisions, as was examined at some length by Olshavsky and his colleagues, had been studied but never explained in a theoretical sense. Table 25 presents correlation coefficients between the dependent variables, independent variables, and control variables used in this study, and is presented here as a tool to think concurrently about the elements from the research that pertain to consumer decision dependency. Note that it does not include Motivation, as it was a within-subjects variable. Also note that for the purposes of the calculation of correlation, Age and Ability were operationalized as measured variables, rather than categorical variables, as they had been in the main analysis.

Table 25. Correlation coefficients and significance levels for dependent variables, independent variables, and control variables.

	Primary Control	Harmony Control	Expertise	Ability	Ncog ^a	Age
Primary Control						
Harmony Control	-.466**					
Expertise	.283**	-.318**				
Ability	.294**	-.299**	.223**			
Ncog ^a	.291**	-.108	.169*	.179*		
Age	.212*	-.183*	.065	.016	.010	

*Correlation is significant at the 0.05 level (two-tailed)
 **Correlation is significant at the 0.01 level (two-tailed)
^a Need for Cognition

Integrating Olshavsky's decision dependency findings with perceived control theory opened several doors to a greater understanding of those findings. The nature of decision dependency itself may be clarified by understanding it in terms of perceived control-related behavior. What Olshavsky and his colleagues called an autonomous decision may properly be understood to be a decision in which primary control-related behavior is emphasized. A subcontracted decision, on the other hand, is one in which harmony control-related behavior dominates. Hybrid decisions occur when primary and harmony control-related decision behaviors are employed, each to a varying degree, concurrently. The negative but non-perfect correlation between primary and harmony control in Table 25 suggests that (a), in decisions, autonomy and subcontracting are negatively related, but (b) they are not mutually exclusive. This result supports

Olshavsky's observations about hybrid decision-making. Several additional results observed in the main and follow-up analyses are pursued in the sub-sections below.

Need for Cognition and Motivation

The main analysis identified a main effect of Need for Cognition on Primary control, which is consistent with the correlation between the two variables identified previously. This effect, however, was qualified by an interaction with Motivation level. This interaction was evaluated in the follow-up analysis section. The low Need for Cognition group did not differ on Primary control across the low and high-motivation conditions, and was similar in its Primary control mean scores to the low-motivation/high Need for Cognition group. However, high Need for Cognition subjects scored higher on Primary control. Of all customers, then, high Need for Cognition people making an important decision are likely to show the greatest propensity for autonomy in decisions. Inasmuch as Need for Cognition measures individuals' propensity to engage in effortful cognitive activity (Cacioppo and Petty, 1982), this result is not surprising. Note, however, that there was no effect of Need for Cognition on Harmony control, and that the correlation coefficient between these two variables in Table 25 is not statistically significant. These two results, together, suggest that (a) though it is possible to make some predictions about high Need for Cognition subjects' use of Primary control-related decision behavior, (b) it is not possible to reliably predict their use of Harmony control-related decision behaviors.

Ability and Motivation

Interactive Effects on the Dependent Variables. Ability (and, similarly, Expertise) is positively related to decision autonomy. However, as was observed in the tests of hypotheses H4a and H4b, this simple relationship is moderated by the importance of the decision. It is further clarified by the understanding that “autonomy” means, specifically, primary control-related decision behavior. For unimportant decisions, primary control-related decision behavior is not influenced by ability perceptions. Important decisions, however, lead to increased preference for decision autonomy among high-ability subjects. Figure 6 showed this interactive effect of Motivation and Ability on Primary control-related decision behavior. Low-motivation subjects always scored below the overall mean level of Primary control, as did high-motivation subjects with low Ability perceptions. High-motivation/high-ability subjects, however, scored significantly higher in Primary control than subjects in the other three conditions. Note also from Figure 6 that no group exhibited autonomous decision behavior, i.e., a decision style characterized by higher than mean levels of Primary control combined with lower than mean levels of Harmony control. It may be that consumers believe that a decision important enough to require primary control-related behavior also merits a degree of dependence, as well, and that unimportant decisions do not require high levels of either form of control-related decision behavior. It raises questions about the actual frequency of purely autonomous consumer decisions.

Thus, criticality of the decision increases primary control-related decision behavior only for individuals who perceive themselves to be efficacious decision-makers. In tests of hypotheses H4a and H4b, Primary control-related decision behavior did not vary

significantly across Motivation levels for subjects in the low-ability group. It is of some note that the Ability groups were formed by means of a median split. This, and the positive correlation between Primary control and Ability (Table 25) begs the question: for customers who perceive themselves to possess very low levels of ability, might highly important decisions lead to purposeful avoidance of primary control? Given that possibility, along with the negative correlation between Ability and Harmony control, it may also be that harmony control would be most employed by customers lacking confidence in very important decisions.

The current data provide some support for these notions. The sample was split into three ability groups; high, medium, and low. MANOVA was performed with the new three-group ability variable as the grouping variable. Primary control and Harmony control, both computed across high-motivation scenarios, were entered as dependent variables. The multivariate effect of Ability was significant, Wilks' Lambda = .865, $p < .001$. Tests of between-subjects effects showed that the effect was significant for both Primary control, $F(2, 142) = 8.517, p < .001$, and Harmony control, $F(2, 142) = 6.468, p < .01$ (see Table 26 for means and standard deviations for the three ability groups).

Table 26. Means and standard deviations for High-Motivation Primary and Harmony control scores for the three ability level groups (i.e., low, medium, and high).

	Mean	SD
Primary Control (Overall; $n = 142$)	5.41	0.75
Low Ability; $n = 53$	5.12 ^a	0.75
Medium Ability; $n = 46$	5.46 ^{a,b}	0.74
High Ability; $n = 43$	5.72 ^{a,b}	0.63
Harmony Control (Overall; $n = 142$)	3.86	0.74
Low Ability; $n = 53$	4.12 ^a	0.64
Medium Ability; $n = 46$	3.78 ^{a,c}	0.80
High Ability; $n = 43$	3.61 ^{a,c}	0.69

^a Means differ, $p < .05$

^{a,b} Means differ, marginal significance, $p = .084$

^{a,c} Means do not significantly differ

Post-hoc tests of means showed that, for Primary control, lowest Ability subjects scored lower than medium-ability subjects, and lower than high-ability subjects, all $ps < .05$ (see Table 26 above). It is worth noting, though the difference is not statistically significant, that these lowest ability subjects scored lower on Primary control than the mean score of the larger low-ability group to which they had belonged under the simple median split ($M = 5.25$, $SD = .74$). For Harmony control, lowest Ability subjects scored higher than medium-ability subjects, and higher than high-ability subjects, all $ps < .05$. Though the difference is again not statistically significant, it is similarly worth noting that these lowest Ability subjects scored higher on Harmony control than the mean score of the larger low-ability group to which they had belonged under the median split ($M = 4.01$, $SD = .74$).

Persistence of Interactive Effects Within the Analysis of Covariance. Finally, it is important to note that the significance of the interactive effects of Motivation and Ability perceptions on primary and harmony control behavior persist (in the case of harmony control, at a marginal level of significance), even when the effects of Expertise and Need for Cognition are controlled statistically. In the main analysis MANCOVA, hypotheses H4a and H4b, which together predicted an interactive effect of Motivation and Ability on Primary control, were supported. In the follow-up MANCOVA, when Age was operationalized cognitively instead of chronologically, hypotheses H5a – H5c, which together predicted an interactive effect of Motivation and Ability on Harmony control, also received support, though statistically marginal, $F(1, 131) = 2.749, p = .10$.

Why might operationalizing Age cognitively, rather than chronologically, make a difference? Recall that the cognitively formed age groups were different from the chronologically formed age groups in their composition. In other words, some adults considered themselves to be, cognitively, of a different age than their actual, chronological age. Thus, the age groups that were “cognitively formed” were composed, in part, of different subjects than those that had been defined (formed) chronologically.

Because the two grouping methods produce age groups composed of different subjects, it is possible that the high and low-ability groups formed under the two methods similarly differ (recall that the Ability split was conducted within age groups). A simple cross-tabulation of the groups formed under the two methods showed this to be the case (for the cross-tabulation, there were data for 143 of the 148 subjects). Of 70 subjects from the chronologically-formed low-ability group, 3 became a part of the high-ability group

under the cognitive formation method. Of 73 subjects from the chronologically-formed high-ability group, one became a part of the low-ability group under the cognitive formation method. Thus, whereas the chronologically-formed low and high-ability groups had included 70 and 73 members, respectively, the cognitively-formed low and high-ability groups included 68 and 75 members. Further, a few of the subjects in the two chronologically-formed high and low-ability groups “switched” groups.

Examination of mean levels of Ability perceptions under the two grouping methods did show that the cognitively formed low-ability group had slightly lower decision Ability levels, $M = 14.71$, $SD = 4.60$, than the chronologically formed low-ability group, $M = 15.00$, $SD = 4.68$. Given that Ability is inversely related to Harmony control, it may be that the cognitively formed low-ability group showed stronger tendencies toward Harmony control than did the chronologically formed group (both within the high-motivation condition). This was, in fact, the case. The cognitively formed low-ability group, within the high-motivation condition ($M = 4.08$, $SD = .62$) scored slightly higher on Harmony control than its chronologically-formed counterpart ($M = 4.04$, $SD = .63$). Though this difference seems exceedingly small, it may have been sufficient to lead to the marginal significance of the interaction observed in the follow-up analysis.

The fact that the interactive effects of Motivation and Ability persist even when Expertise is statistically controlled suggests that consumers’ enduring perceptions of decision-making ability influence their decision styles beyond, that is, in addition to, the effects of their situational perceptions of expertise/familiarity. Though familiarity with a product and its purchase may affect the way consumers conduct their decision, their more

lasting, over-arching perceptions of decision-making ability seem to further influence their use of primary and harmony control-related decision behaviors.

Age and Decision-Making

Viewing consumer decisions from a perceived control perspective raises the question of whether age might play a role in the determination of decision styles. If so, it might be added to the other, more well-studied variables discussed above. It, too, may be helpful in explaining decision dependency. This section of the Chapter proceeds by discussing the results of the research within this conceptual model: how do age, motivation, ability, expertise, and need for cognition work together to influence these different forms of control-related decision behavior? Two immediate observations may be taken from the correlation coefficients presented in Table 25: Age is positively correlated with Primary control-related decision behavior, and negatively correlated with Harmony control. One objective of the following subsections is to aid in understanding these basic findings.

Decision Self-Efficacy. Though decision-making self-efficacy had been predicted to be lower among older adults than younger adults, no such tendency was observed among the subjects sampled in this research. Whether this equality is due to the nature of the sample itself or is instead reflective of a fundamental characteristic of older adult consumers in general is not clear. This specific sample of older adults did view itself as being about as healthy and as socially active as its younger counterparts. It was also equal in terms of social position. It seems that, for this sample, any age-related variation in decision styles cannot plausibly be explained by depreciated capacities among the older

subjects. In terms of tendencies toward decision autonomy as suggested in Table 25, the older adult subjects in this study consider themselves to be as able in body and mind as their younger adult counterparts.

Age, Primary Control, and Harmony Control. The prediction that harmony control-related decision behavior would be more prevalent among older adults was also disconfirmed. No main effect of Age was noted on Harmony control. However, there was a significant main effect of Age on Primary control-related decision behavior, and an interaction between Age and Motivation on Harmony control. Older adults scored higher on Primary control than middle-aged and young adults, and, for important purchases, scored lower on Harmony control. Together, these results suggest three conclusions about this sample of older adults. First, as for all age groups, older adults showed a preference for orchestrating their own decision process. Second, they were even more strongly inclined to do so than were younger adults. Third, when presented with an important decision, these older adults were less likely than younger adults to hybridize or subcontract their decision.

One possible explanation for these results is that older adults in this sample have actually lost the ability to seek aid, guidance, and approval, and have attempted to compensate for that loss by pursuing autonomy in their decisions. This explanation is consistent with the compensation model of aging (e.g., P. Baltes, 1987; M. Baltes and P. Baltes, 1986; P. Baltes and M. Baltes, 1990; P. Baltes, Dittmann-Kohli, and Dixon, 1984; P. Baltes and Kliegl, 1986), in which aging is viewed as a period of loss in cognitive abilities, and not gain, in the sense that aging is (at best) a zero-sum game.

These results may, however, be understood differently from an alternative perspective. Consider again that young adults are less inclined toward Primary control behavior in decisions, and more inclined toward Harmony control (see, again, the correlation coefficients presented in Table 25). Implicit in the comparison is an unspoken issue that may be important in understanding decision-making differences: clearly, young, middle, and older adults are different in terms of the lives they have lived. If this is the case, responsive changes in control-related decision behavior may have occurred over the life-span. These changes could be accommodative to life experiences, rather than compensatory for losses of (primary control) ability. As discussed in Chapter II, the life-span/accommodative counterargument to the compensation model is found in the gerontology literature, and is exemplified by works such as those of Adams (1991); Adams, Labouvie-Vief, Hobart, and Dorosz (1990); Adams, Smith, Nyquist and Perlmutter, 1997; Gould, Trevithick and Dixon (1991); Labouvie-Vief (1982, 1985); and Labouvie-Vief and Schell (1982). These authors would argue that it is possible that differences in decision behaviors between younger and older adults result not from compensation, but from a life-long process of accommodating to the consumer world as they have experienced it.

One result from this dissertation that would cast doubt on the plausibility of the accommodative model would be the observation that older adults score lower for total decision-related control behavior (that is, primary and harmony combined; it would imply a loss of total cognitive capabilities). However, this is not the case. A total control score was computed for each subject by (a) computing mean scores for both primary and harmony control across decision scenarios, for each subject, and (b) summing these scores. A

univariate ANOVA was performed with this total control score as the dependent variable, and Age group as the grouping variable. The effect of Age group was not significant. Mean scores for young adults, middle adults, and older adults were nearly equal (8.78, 8.61, and 8.81, respectively). In the paragraphs below, an interpretation of the data that is consistent with the accommodative perspective is offered.

An Interpretation of Age Effects on Primary and Harmony Control. In the sample, young adults were all constrained to being on their own, living outside their parental home. However, young adults from 18 – 30 years are only a few years past the time of their life when they relied on, and needed to “fit in with,” their parents. Fitting in may have been important, as activities could have been subject to approval or disapproval. For those young adults who are significantly attached, the relatively new union may provide a new reason to “fit,” as well as the opportunity to utilize an important other as an advisor (for the sample, 27 young adults were married, 21 were not). The recent and current “harmonious” elements of a young adult’s life may be weighty influences.

By middle age, adults have accumulated several years of decision experience. However, they may have also learned that the world is a complicated place, and that making good decisions can be difficult. Though the age groups did not differ in their self-perceived decision-making ability, they did differ in terms of the degree to which they considered themselves to be expert on the decision scenarios presented in this study. A univariate ANOVA was performed with Expertise as the dependent variable, and Age group as the grouping variable. The effect of Age was significant, $F = 3.205 (2, 141), p < .05$. Post-hoc examination of the means showed that young ($M = 12.34, SD = 3.34$) and

older adult subjects ($M = 12.67$, $SD = 2.91$) did not differ in their Expertise perceptions ($p = .589$). However, middle adults' Expertise perceptions ($M = 11.19$, $SD = 2.78$) were lower than those of both older adults' ($p < .05$) and younger adults' ($p = .06$, marginal significance). Middle adults' Primary control scores are statistically equal to those of their younger counterparts, as are their Harmony control scores. Middle adults may not live within their parental home. However, many of them live within their own home, complete with a partner and, possibly, children (of the middle-aged adults in the sample, 43 of 48 were married). Like young adults, middle-aged adults have great cause to live harmoniously and, probably, no greater cause yet to strongly engage primary control behaviors in many decisions.

By older adulthood, children would have moved out on their own (recall that the mean age of the older adult group was 63.73; by this time offspring would be approximately between 20 and 40 years of age). They may still be married (39 of 48 were), and if so, their union is likely well-established. There is less call for overt efforts to achieve and maintain harmony, rather, it may exist to a highly satisfying degree. If the older adult has recently retired, emphasis may have shifted from satisfying others to self-gratification. The older adult may be more free to pursue activities and interests that were previously out of reach because of work and family demands. The older adult may feel "in control" of his/her life (in a primary control sense) to a degree greater than ever before (recall that there was a significant main effect of Age observed on Primary control-related decision behavior; see Figure 10). This adult, on average, was born in the early- to mid-1930s. S/he may have watched (and helped) his/her parents work their way through very difficult times, and may

well have adopted that standard for his/her own life. S/he has a strong conviction that the proper thing is to take responsibility for oneself. By this time, many years of experience in making successful decisions have accumulated, leaving his/her levels of decision confidence intact. Of course, some decisions would have turned out well, others not so well. But, regardless of those outcomes, life has continued. Perhaps the older adult has concluded that individual decisions, however important they may be at the moment, matter less in the long run than they might have believed in years past. S/he may have even come to the opinion that it is possible to do everything right and still have the decision come out wrong, or vice-versa.

Age and Dimensions of the Harmony Control Scale

If the above interpretation of the differences observed in decision styles between young, middle, and older adults is plausible, there should be evidence of the described changes in harmony control-related behavior implied by that interpretation. Some of that evidence may be found by evaluating age-related differences across the four principle dimensions of the consumer decision version of the Harmony control scale. The purpose of this section is to describe some of those differences (see Figures 13 and 14, Chapter IV).

Gain Support and Approval; Trust and Rely on Others; Wait on Luck. As discussed in the follow-up analysis (Chapter IV), the consumer decision version of the Harmony control scale is made up of four principle dimensions: Higher Power; Gain Support and Approval; Wait on Luck; and Trust and Rely on Others. As was described, adults of different ages varied significantly on all of the four dimensions (the effect is marginally

significant for the Gain Support and Approval dimension). This section will discuss results from all but the Higher Power dimension.

Older adult scores on the Rely on Others dimension were lower than those of their younger peers, reflecting greater independence and a reduced tendency to seek out advice. This component of the Harmony control construct is most negatively correlated with Primary control (see Table 27; this table is also reproduced as Tables 28 – 30, which are specific to each of the three age groups, at the end of this sub-section). Young adult scores on this dimension, however, were the highest of the three age groups, perhaps indicative of a person not many years removed (and, possibly, only partially removed) from relying upon parental counsel. Predictably, middle adult scores are lower than those of their younger counterparts, but not yet as low as those of older adults.

As suggested above, young adults are likely to be accustomed to fitting into a familial unit, and some decisions could be conducted with an eye toward that objective. Consistent with this notion, young adult scores on the Gain Support and Approval dimension are higher than those of middle-aged adults (approaches significance; $p = .065$), and significantly higher than those of older adults. By middle adulthood, “fitting in” in a dependent sense may have declined in salience, as the middle-aged adult may be leader or co-leader of the household, and any dependents could be expected to fit in with them. The propensity for fitting in has, by that point, probably taken its most precipitous fall of the life-span. Gaining Support and Approval shows, as indicated in Table 27, a relatively strong and inverse relationship with Primary control, which is lowest in young adults.

Finally, Fate and Luck, as objects of decision dependency, play at most a modest role in the lives of any age group in this sample (*Ms* ranged from a low of 1.85 for young adults, to 2.00 for middle aged adults, to a high of 2.41 for older adults). However, it is worth noting that the older adult mean score of 2.41 (*SD* = .98) is significantly higher than those for either of the younger two age groups. It may be that this higher score is indicative of a decision maker who has from time to time, as suggested above, “done everything right” and still had decisions come out wrong – or even sometimes failed to do everything right but received a good outcome, anyway. The older adult, however self-reliant and convinced that one must be responsible for him/herself, may have concluded that perhaps fate or luck does, on occasion, play a role in things.

Table 27. Correlation coefficients and significance levels for Primary control and the four dimensions of the consumer decision version of the Harmony control scale (All age groups; $ns = 144$).

	Primary Control	Gain Support and Approval	Higher Power	Fate/Luck	Rely on Others
Primary Control					
Gain Support and Approval	-.378**				
Higher Power	-.127	.085			
Fate/Luck	-.304**	.202*	-.013		
Rely on Others	-.466**	.379**	.141 ^a	.162 ^a	

*Correlation is significant at the 0.05 level (two-tailed)
 **Correlation is significant at the 0.01 level (two-tailed)
^a Correlation is marginally significant, $p = .092$ (two-tailed)

Table 28. Young Adults: correlation coefficients and significance levels for Primary control and the four dimensions of the consumer decision version of the Harmony control scale ($ns = 48$).

	Primary Control	Gain Support and Approval	Higher Power	Fate/Luck	Rely on Others
Primary Control					
Gain Support and Approval	-.256 ^a				
Higher Power	-.153	-.143			
Fate/Luck	-.363*	.381**	-.046		
Rely on Others	-.522**	.165	.070	.278 ^a	

*Correlation is significant at the 0.05 level (two-tailed)
 **Correlation is significant at the 0.01 level (two-tailed)
^a Correlation is marginally significant, $p < .10$ (two-tailed)

Table 29. Middle Adults: correlation coefficients and significance levels for Primary control and the four dimensions of the consumer decision version of the Harmony control scale (Ns = 48).

	Primary Control	Gain Support and Approval	Higher Power	Fate/ Luck	Rely on Others
Primary Control					
Gain Support and Approval	-.441**				
Higher Power	-.115	.109			
Fate/Luck	-.303*	.123	-.113		
Rely on Others	-.091	.321*	-.030	-.020	

**Correlation is significant at the 0.01 level (two-tailed)
*Correlation is significant at the 0.05 level (two-tailed)

Table 30. Older Adults: correlation coefficients and significance levels for Primary control and the four dimensions of the consumer decision version of the Harmony control scale (Ns = 48).

	Primary Control	Gain Support and Approval	Higher Power	Fate/ Luck	Rely on Others
Primary Control					
Gain Support and Approval	-.436**				
Higher Power	-.186	.483**			
Fate/Luck	-.502**	.197	.216		
Rely on Others	-.606**	.532**	.242 ^a	.332*	

**Correlation is significant at the 0.01 level (two-tailed)
*Correlation is significant at the 0.05 level (two-tailed)
^a Correlation is marginally significant, $p = .097$ (two-tailed)

Higher Power. Though the perceived control-related psychological literature has acknowledged the importance of the spiritual component of people's lives (see especially Heckhausen and Schulz, 1995; and Koenig, George, and Siegler, 1988, for age-related views on this subject), consumer behavior researchers have not widely embraced consumer spirituality as a research topic yet. This dissertation offers evidence that some consumers believe that a higher power may play a role in purchases and their outcomes. Of the four dimensions of harmony control, the Higher Power dimension had the second highest (overall) mean score (overall *M* scores were, Rely on Others, 4.38; Higher Power, 4.13; Gain Support and Approval, 3.26; Wait on Luck, 2.09; see Table 20). It would seem important, for the purpose of acquiring a more comprehensive understanding of consumer decisions, to study this significant component. It is by means of such study that the role of theory in marketing takes on its greatest practical importance: to understand a thing, in a theoretical sense, is also to have the ability to predict it, and to possibly find ways to align marketing practice more closely with the realities of consumers' lives.

Implications for Marketers

Several implications relevant to marketers can be derived from the results of this study. The purpose of this section is to discuss some of these implications. The section includes three parts. First, fundamental, decision-related, behavioral differences between consumers of different ages are discussed. Second, the effects of decision importance and consumer ability perceptions, acting together on primary and harmony control, are

considered. Finally, two examples that illustrate how some of the results of this dissertation can be applied to marketing practice are presented.

Age Differences

The results of the study show that many older adult consumers perceive themselves to be capable decision-makers. There were no differences in decision self-efficacy perceptions between young, middle, and older-aged adults. Consumers of all ages prefer to play a decisive, autonomous role in decisions, as compared to giving up that autonomy. Young adult and middle-aged consumers exhibit this preference to a lesser degree than older adults.

At the same time, all adults evidenced a capacity for harmony control-related decision behaviors. They are capable of trusting and relying on others, and may seek support and approval from those whom they care about and who care about them. Consumers may believe that a higher power might play a role in the purchase. Of all age groups, older adult consumers are the most likely to believe that luck or fate might play a role in their decisions, and that “good and bad decisions even out in the end.”

Younger adult consumers seem to have a greater propensity for harmony control-related decision behaviors, particularly for important decisions. Such a result suggests that marketing personnel who interact with young adult consumers should adjust their styles of behavior. For example, salespersons may need to recognize that young adult consumers may be less inclined to play a controlling role (in the primary control sense) in transactions, and be more likely to act upon perceptions about the salesperson’s trustworthiness. An

intriguing possibility is that a marketer who seems “parental” in his/her demeanor may be more able to influence young adults’ purchase decisions.

Motivation and Ability: Effects On Decision Behavior

Beyond the issue of age, this dissertation has attempted to shed light on the relationship between motivation and perceived ability in decision making. Marketing personnel may benefit from a more structured approach to thinking about these two factors as they attempt to predict consumers’ behavior. Specifically, the results of this study help identify the kinds of control-related decision behavior that follow from specific combinations of motivation and ability levels.

As indicated above, customers prefer primary control behavior over harmony control behavior, though the two behaviors are likely to coexist. Preference for primary control is strongest, however, for customers who consider themselves to be, in general, good decision-makers, and who are faced with an important decision. For example, subjects who are confident in their decision-making ability, and who are engaged in the purchase of an automobile (for most people, an important purchase), are likely to attempt to retain as much personal influence over the decision as possible. Customers who consider themselves to be less capable decision-makers, as well as high-ability customers making unimportant decisions, will tend less strongly toward primary control-related behavior.

Subjects who are less confident in their decision-making ability are likely to engage in harmony control-related behaviors, given an important decision. Wanting a good decision outcome, but lacking confidence that s/he can obtain it alone, low-ability

consumers are more likely to ask for help, try to ascertain what would please a loved one, or even seek the guidance of a higher power. One age-related finding is that, in important decisions, younger adults are significantly more likely to engage in this sort of behavior than are older adults (this effect occurs across ability levels).

Applying the Results to Marketing Practice: Two Examples

The Home Depot™ Example: "Shingling the House Myself? Can I Really Do That?" A person's home is likely to be considered one of his/her most important possessions – and perhaps an investment for the future, as well. Accordingly, decisions about major improvements or repairs may well be viewed as being quite important.

Many homeowners, however, may lack confidence, not only about working on their homes, but even about making decisions about home repair or improvements. Accordingly, purchase decisions of this sort can properly be categorized as important, and many customers would likely consider themselves to lack the capacity to make good decisions. The possibility of saving money may create a desire to not only make decisions themselves, but even to do the work.

Success of DIY (Do-It-Yourself) home improvement outlets, such as Lowe's™ or Home Depot™, may be due in part to their strategy of educating consumers to do what they would like to do, but were heretofore not sure they could do themselves. In this case, a sequence of cause and effect is suggested: education leads to higher ability perceptions, which in turn enables increased use of primary control, which in turn leads to enhanced consumer satisfaction (and, possibly, increased ability perceptions overall).

The Dependent Home Buyer Example: "My Realtor Told Us to Pray About It!"

Perhaps to an even greater degree than was the case in the Home Depot™ example above, the purchase of a home is likely to be viewed as a decision of major importance. And, for some persons, it is also very likely a purchase situation in which they feel a profound lack of confidence to make good decisions themselves. This may be never more true than in the case of young adult, first-time home buyers. Accordingly, this is a situation in which persons of low decision-making ability are forced into making what they may well perceive to be a very important, but difficult, decision.

Recall that, for this sample, young adult decision-makers tended more strongly toward harmony control than adults of any other age. This situation may call for the dual approach of increasing ability perceptions (as in the example above), as well as offering the customer multiple opportunities for harmony control. The Realtor who takes the time to educate his/her young customers on important aspects of home-buying may be perceived as a trustworthy, even parent-like object of trust. The notion of telling a customer to "pray about it before you make a decision" is grounded in reality; this researcher is personally acquainted with a Realtor who advises most of his customers to do that very thing. "Jim" (not his real name) considers it to be a very important element of his sales technique: "It lets them know that I want what is best for them, and not just to make a sale. I tell them clearly that if they buy something from me, and I've pushed hard for the sale, and later they regret buying the house, I've lost the opportunity to sell them another house. I view my clients as lifetime investments. I want to do business with them again" (personal communication, 2/26/1999). In this case, another causal sequence set is suggested: there

may be dual effects of trust, one in the Realtor, the second in a higher power. These could lead to the perception of “being in good hands.” In addition, the educational opportunities provided by the Realtor may lead to higher ability perceptions and greater satisfaction, as was the case in the Lowe’s™ example above.

Key in the successful implementation of strategies like those exemplified above is the ability of the marketer to make an assessment of the age, ability, and motivation levels of the potential customer. Though this is, perhaps, a direction for future research, most experienced marketers may already have notions about how to ascertain these characteristics about their customers. Though imperfect, estimating a person’s age group (i.e., young, middle-aged, or older adult) is fairly straightforward. A few questions about the frequency of past purchases of the sort being considered, and their outcomes, might be helpful in determining customers’ ability perceptions. Similarly, a marketer might easily be able to also ask how important this decision is for their prospect.

Limitations

The limitations of this study fall into two broad categories. First, the nature of the sample obtained must be considered in the interpretation of the results. Second, the collection, measurement, and manipulation techniques should similarly be understood.

Nature of the Sample. The sample obtained for this study is not representative of all adult consumers, of all age groups. Thus, a number of reasons to question generalizability of the results exist. First, the sample consists entirely of volunteers. To the extent that those who are most likely to volunteer to fill out a research study questionnaire are those who are most socially active, most healthy, and most personally outgoing, the sample may not be representative of consumers who do not fit that description. The fact that the sample was obtained from church and community groups (i.e., groups that are inherently social in their nature) further bears out the necessity of this caution.

Second, as stated, much of the sample was taken from church groups. This may have a direct bearing upon the results: a sample taken from the community at large would likely score lower on the Higher Power dimension of the consumer decision version of the harmony control scale. Accordingly, the urgency of studying this aspect of consumer decision behavior could be overstated here. Further, to the extent that "churched" people might differ in the degree to which they value familial relationships, this sample could also evince higher scores on other dimensions of the harmony control scale.

Third, examination of the descriptive statistics of the sample showed, for the older adults, relatively high levels of physical health and social activity. For older adults, then,

the question of whether results would differ for less healthy, less socially active consumers is pertinent. Related to this issue is the fact that the study obtained data from “young-old,” and not from the so-called “old-old” (i.e., those at least 75 years of age; see Menec and Chipperfield, 1997b). It is possible that significantly different results would have been observed for consumers of these more advanced ages. One cannot rule out the possibility of observing harmony control increases, and lower levels of primary control, among those consumers.

Finally, the sample was obtained in Grand Forks, North Dakota. As such, it was comprised almost entirely of Caucasian peoples, predominantly of northern European ancestry. Thus, it is not representative of other North American geographic or ethnic subcultures.

Collection, Measurement, and Manipulation. The interpretation of the differences in primary and harmony control presented earlier in the Chapter (see Age and Decision-Making subsection) proposes that those age-related differences may be due to the varying accumulation of life experiences for young, middle-aged, and older adults. Such an interpretation can receive, at best, only limited support in a cross-sectional study such as this one. To draw such conclusions with a significant degree of confidence would require, instead, a longitudinal study during which data collection occurs as subjects actually progress through their lives, and accumulate life experiences.

There are other limitations associated with the collection, measurement, and manipulation techniques. First, with regard to collection, data were collected in groups ranging in size from a single participant to a maximum of fifteen, and comprised of a single

age group. It is possible that such group size variation could have produced varying group dynamics. It is also possible that results would differ had the data been collected in groups comprised of respondents of different ages. In reality, consumer decisions are frequently made in a varied-age social context. Second, subjects who tend to work more quickly were not allowed to proceed through the experimental booklet at their own pace, but were instead required to "Please Wait for Instructions to Continue" (see Appendix 3, Experimental Booklet). This artificiality could have influenced their normal decision-making routine.

With regard to measurement, the perceived Ability/Self-Efficacy measures were abstract; they were based upon the instruction to "imagine that you had to make three *COMPLEX* decisions...". Individual subjects undoubtedly differed in their envisioning of complex decisions. For some, it could have meant the purchase of an automobile, for others, a decision to quit a job and go back to school, and for yet others, a decision of whether or not to put a parent in a nursing home. These differences may even be age-related, further complicating the subjectivity issue.

Finally, the attempt was made to manipulate Motivation in a manner that is broader than traditional, product-based manipulation of consumer involvement. For example, each manipulation scenario included situational elements, and each high-motivation scenario included reference to potential impact on a variety of valued states (e.g., a loss of money or prestige). Nonetheless, the manipulations were fundamentally product-based. Certainly, a product purchase that is involving to a given subject would be either more or less involving to another subject. Further, subjects may have varied in their susceptibility to the

situational elements of the scenarios. Accordingly, subjects quite possibly differed in the degree to which the scenarios actually induced Motivation.

Future Research

The preceding sections suggest a number of potential avenues for additional research. Some of these have been described (see earlier section, "Implications for Consumer Researchers"). The purpose of this section is to identify others that arise from the limitations of this study.

An important question is that of generalizability. This study pertains to common consumer decisions. An important direction for additional research would be to test the model in other, non-consumer, contexts such as management decision-making. In addition, there is the issue of whether the results and the associated evidence for and against the model tested would be similar given a sample of a different nature. As was indicated earlier, the sample was drawn from church and community groups in Grand Forks, North Dakota. Samples drawn from a community at large, from other geographic regions, countries, and/or ethnic groups could lead to the observation of different results. Similarly, subjects who are older than 70 years of age, younger than 18, or not living independently may differ from those who comprised this sample. Future research is needed to investigate these issues.

Second, some of the questions raised regarding data collection provide cause for additional research. Studies that vary such methodological elements as group composition

(both group size and age-mix), degree of experimenter control over subjects' pace through the procedure, and specificity of what is meant by a "complex" decision for measuring Ability perceptions could prove fruitful both for the theoretical model presented in this dissertation, as well as for guiding future methodological choices in consumer decision-making research.

Finally, as indicated, cross-sectional studies comparing adults of different ages cannot conclusively rule out the possibility that age-related cognitive differences arise from cohort membership. Instead, a longitudinal study is necessary.

Conclusions

This dissertation investigated decision-making autonomy and dependency. It proceeded by proposing that the behaviors that indicate autonomous, subcontracted (dependent), and/or hybrid decision behavior are simply special cases of primary and harmony control-related behaviors engaged in the consumer decision context.

As discussed in Chapter II, dependency in consumer decision making is a phenomenon that has not been explained. Current choice research does not include study of hybrid or subcontracted decision behavior, perhaps because of this lack of guiding theory. One contribution of this research is that it represents a "first attempt" to shed light on this aspect of consumer decision making.

In so doing, it expands the scope of what we do know about dependency in decision making. By applying the perceived control literature to the issue, the dissertation enables a

structured approach to such issues as whether decision-making dependency should be considered normal (certainly) or abnormal (certainly not) behavior. It provides a basis for knowing what classes of behavior constitute decision independence and dependence (e.g., primary and harmony control-related behavior), and what classes of objects an individual might depend upon, e.g., harmony control-related factors such as friends, including intangible classes such as luck or a deity. The dissertation identifies potential new categories of hybrid decision behavior, for example, comprehensive decision making and decision avoidance, that could not have been predicted nor explained given previous knowledge of decision dependency.

The dissertation also applies the motivation, opportunity, and ability framework to a new context. While Chapter II identified a number of factors that may contribute to motivation, opportunity, and perceived ability to make a good decision, an important avenue for future research could be the development of structured sets of factors that causally affect these variables.

Results of the study confirm some aspects of the developed theoretical model, and refute others. As anticipated, under conditions of high Motivation (i.e., an important decision), subjects preferred Primary control over Harmony control. However, unexpectedly, this was also the case for unimportant decisions. This preference for Primary control was also true for subjects across self-perceived Ability levels.

Important decisions led to higher levels of Primary control than did unimportant decisions for subjects who consider themselves to be able decision-makers. This effect was not found for subjects who have lower decision-making ability perceptions. A similar effect

was found for Harmony control in a follow-up analysis: low-ability subjects making important decisions scored highest on Harmony control. Marginal statistical significance of the effect, however, calls for caution in interpretation and ascription of confidence.

The perceived control literature and age-related literature (from psychology and gerontology) together provide a theoretical basis for the new topic of consumer age and decision dependency. Though lower levels of decision-making ability had been predicted for older adults, no such difference was found. For this sample, older, middle-aged, and younger adults all perceived themselves to possess approximately equal consumer decision-making abilities. It had also been predicted that older adults would score higher in Harmony control, however, this also was found to be not the case. In fact, for important decisions, older adults scored lower on Harmony control than both middle-aged and younger adults. A promising area of research is the finding that older adults seem to exhibit an unexpectedly high degree of primary control-related behavior in their decision making, and that young adults exhibit an unexpectedly high level of harmony control-related behavior in decisions.

When (consumer decision-making) Harmony control is broken into its four principal components, more age-related differences emerge. Older adults score lower on each of the four dimensions except for Luck/Fate, where they score significantly higher than their younger counterparts. In addition, mean scores for the dimensions varied within age groups.

The results of this research suggest that consumers of different motivation states, ability levels, and ages may behave differently in terms of their decision-making styles.

Researchers may pursue further investigation of the model presented, or of the results of this dissertation, independently of consumer age. Continued use of the perceived control perspective in consumer research may, however, provide additional evidence that there are indeed changes in decision-making dependency across the life-span.

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APPENDIX 1:
Dependent Variable Scales

Desire for Control (Primary control) scale items ("Items" correspond to their order of appearance in the original DC scale as developed by Burger, 1992. They are presented here in the order they appeared in the experimental booklet for this study). Items 20, 7, 10, 19, and 16 are reverse-scored.

- | | |
|----------------|--|
| Item 20 | I'd like to wait for someone else to make this decision so that I don't have to be bothered with it. |
| Item 13 | I'd like to get a good idea of what the decision is all about before I make it. |
| Item 12 | I'd rather make my own decision and make my own mistakes than let someone else decide for me. |
| Item 9 | I want full responsibility for the decision. |
| Item 1 | In this decision I'd want a lot of control over what I do and when I do it. |
| Item 8 | I would make my own decision. |
| Item 7 | Others would know what is best for me. |
| Item 10 | If this was a group decision I'd want someone else to be the leader. |
| Item 6 | I would be careful to consider every angle before making a decision. |
| Item 19 | This is a situation in which I would prefer only one choice rather than having to make a decision. |
| Item 16 | I wish I could push this decision off on someone else. |
| Item 17 | In this decision, I'd avoid putting myself in a position where I could be hurt by someone else's mistake. |
| Item 3 | I would avoid allowing someone else tell me what to do. |
| Item 4 | I would rather be the decision maker than an advice follower. |

Harmony Control scale items ("Items" correspond to their order of appearance in the original HC scale as developed by Morling and Fiske, 1999). Items 10, 17, 3, 13, and 9 are reverse-scored.

Factor 1: "Higher Power"

- | | |
|---------|---|
| Item 7 | I know that a higher power will arrange for my ultimate well-being in this decision. |
| Item 10 | I would not look to a higher power for guidance. |
| Item 11 | The will of a higher power affects the outcome of this decision. |
| Item 12 | Some higher power will decide the "goodness" or "badness" of this decision. |
| Item 17 | There is no point trying to learn from some higher power what decision I should make. |

Factor 2: "Gain Support and Approval"

- | | |
|---------|--|
| Item 1 | Meeting other people's expectations would make the decision a good one for me. |
| Item 3 | I would not worry about anticipating anyone else's expectations. |
| Item 4 | In this decision I would ask friends or relatives for help. |
| Item 5 | I would try to get along with others by trying to anticipate what they want or need. |
| Item 6 | I would try to fit in by doing what others would do. |
| Item 13 | It wouldn't be that important for me to know that others will support me in this. |

Factor 3: "Wait on Luck"

- | | |
|---------|---|
| Item 2 | In some sense, my decision doesn't matter, since there is no use fighting fate. |
| Item 14 | Luck would probably determine the best choice for me. |
| Item 15 | Good and bad decisions even out in the end. |
| Item 18 | I trust luck to make the right decision for me. |

Factor 4: "Trust and Rely on Others"

- | | |
|---------|--|
| Item 8 | By asking others for advice, I know the final choice won't be a bad one. |
| Item 9 | I would not trust other people to make this decision for me. |
| Item 16 | I can rely on other people to help me. |

APPENDIX 2:

Pre-Experimental Materials

Informed Consent Forms

Signature to Donate or Receive Stipend

Prize Sign-up Form

INFORMED CONSENT FORM
(Group 1 Subjects: 18 – 30 years of age)

Please be informed that before you consent to participate in the research being conducted, you should consider the following elements:

1. **Purpose of Research.** This exercise involves research designed to ascertain consumer impressions of service experiences. In addition, additional information (e.g., demographic and personality variables) will be collected. It is hoped that the study will benefit consumers by facilitating a better match between consumer requirements and marketing efforts.
2. **Subjects.** Each group 1 subject should be between the ages of 18 and 30 years.
3. **Research Procedure.** Each research subject will be asked to complete all questions included in a test booklet (e.g., self-descriptive data, age, education, occupation, etc.), complete a card sorting task, and to provide a written account of a dissatisfying service experience.
4. **Time Requirements.** The research procedure will be conducted in one session, which is expected to take about 40-45 minutes to complete.
5. **Confidentiality.** Complete confidentiality will be maintained. No individual's responses will be reported, and at no time will any individual's name be associated with their responses. All responses will remain anonymous. You will be asked to provide your name and a means of contact for the purposes of the prize drawing. You are free to opt out of the prize drawing.
6. **Voluntary Participation.** Your participation is completely voluntary. Further, you are free to discontinue participation at any time and for any reason.
7. **Researcher.** If you have any questions about this research or your rights as a research participant, feel free to contact:

Robert Tangsrud, Jr., Assistant Professor of Marketing
Division of Organizational and Systems Technology
College of Business & Public Administration
University of North Dakota
(701) 777-3369

If you agree to participate in the described research, please sign on the line below. Your signature constitutes your consent to participate and attests that you have read and understand this consent form. Please retain a copy of this consent form for your personal records.

Signature _____ Date _____

THANK YOU FOR YOUR ASSISTANCE.

INFORMED CONSENT FORM
(Group 2 Subjects: 35 – 50 years of age)

Please be informed that before you consent to participate in the research being conducted, you should consider the following elements:

1. **Purpose of Research.** This exercise involves research designed to ascertain consumer impressions of service experiences. In addition, additional information (e.g., demographic and personality variables) will be collected. It is hoped that the study will benefit consumers by facilitating a better match between consumer requirements and marketing efforts.
2. **Subjects.** Each group 1 subject should be between the ages of 18 and 30 years.
3. **Research Procedure.** Each research subject will be asked to complete all questions included in a test booklet (e.g., self-descriptive data, age, education, occupation, etc.), complete a card sorting task, and to provide a written account of a dissatisfying service experience.
4. **Time Requirements.** The research procedure will be conducted in one session, which is expected to take about 40-45 minutes to complete.
5. **Confidentiality.** Complete confidentiality will be maintained. No individual's responses will be reported, and at no time will any individual's name be associated with their responses. All responses will remain anonymous. You will be asked to provide your name and a means of contact for the purposes of the prize drawing. You are free to opt out of the prize drawing.
6. **Voluntary Participation.** Your participation is completely voluntary. Further, you are free to discontinue participation at any time and for any reason.
7. **Researcher.** If you have any questions about this research or your rights as a research participant, feel free to contact:

Robert Tangsrud, Jr., Assistant Professor of Marketing
Division of Organizational and Systems Technology
College of Business & Public Administration
University of North Dakota
(701) 777-3369

If you agree to participate in the described research, please sign on the line below. Your signature constitutes your consent to participate and attests that you have read and understand this consent form. Please retain a copy of this consent form for your personal records.

Signature _____ Date _____

THANK YOU FOR YOUR ASSISTANCE.

INFORMED CONSENT FORM
(Group 3 Subjects: 55 – 70 years of age)

Please be informed that before you consent to participate in the research being conducted, you should consider the following elements:

1. **Purpose of Research.** This exercise involves research designed to ascertain consumer impressions of service experiences. In addition, additional information (e.g., demographic and personality variables) will be collected. It is hoped that the study will benefit consumers by facilitating a better match between consumer requirements and marketing efforts.
2. **Subjects.** Each group 1 subject should be between the ages of 18 and 30 years.
3. **Research Procedure.** Each research subject will be asked to complete all questions included in a test booklet (e.g., self-descriptive data, age, education, occupation, etc.), complete a card sorting task, and to provide a written account of a dissatisfying service experience.
4. **Time Requirements.** The research procedure will be conducted in one session, which is expected to take about 40-45 minutes to complete.
5. **Confidentiality.** Complete confidentiality will be maintained. No individual's responses will be reported, and at no time will any individual's name be associated with their responses. All responses will remain anonymous. You will be asked to provide your name and a means of contact for the purposes of the prize drawing. You are free to opt out of the prize drawing.
6. **Voluntary Participation.** Your participation is completely voluntary. Further, you are free to discontinue participation at any time and for any reason.
7. **Researcher.** If you have any questions about this research or your rights as a research participant, feel free to contact:

Robert Tangsrud, Jr., Assistant Professor of Marketing
Division of Organizational and Systems Technology
College of Business & Public Administration
University of North Dakota
(701) 777-3369

If you agree to participate in the described research, please sign on the line below. Your signature constitutes your consent to participate and attests that you have read and understand this consent form. Please retain a copy of this consent form for your personal records.

Signature _____ Date _____

THANK YOU FOR YOUR ASSISTANCE.

Your signature below indicates RECEIPT or DONATION of \$10 recompense for your participation.

**(PLEASE ✓ TO INDICATE RECEIVE OR DONATE;
indicate group to receive your \$10 donation)**

[illegible]

Prize Drawing Sign-up Sheets

(Age Group 1: 18-30 years)

There will be four prizes for this age group:

1 - \$75

1 - \$50

1 - \$30

1 - \$20

Please PRINT your name below(in case you win!!) **Telephone Number**

1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____
11.	_____	_____
12.	_____	_____
13.	_____	_____
14.	_____	_____
15.	_____	_____
16.	_____	_____
17.	_____	_____
18.	_____	_____
19.	_____	_____
20.	_____	_____
21.	_____	_____
22.	_____	_____

Prize Drawing Sign-up Sheets

(Age Group 2: 35-50 years)

There will be four prizes for this age group:

1 - \$75

1 - \$50

1 - \$30

1 - \$20

Please PRINT your name below(in case you win!!)

Telephone Number

1.		
2.		
3.		
4.		
5.		
6.		
7.		
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22.		

Prize Drawing Sign-up Sheets

(Age Group 3: 55-70 years)

There will be four prizes for this age group:

1 - \$75

1 - \$50

1 - \$30

1 - \$20

Please PRINT your name below(in case you win!!)

Telephone Number

1.		
2.		
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APPENDIX 3:
Experimental Booklet

Retailer-Sponsored Service Experience Study

Conducted by

Robert Tangsrud, Jr.
Assistant Professor, Marketing
Division Of Organizational
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University of North Dakota

Malcolm C. Smith
Associate Professor, Marketing
Department of Marketing
Faculty of Management
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Introduction

A group of prominent retailers have contracted with researchers from the University of North Dakota and the University of Manitoba to conduct a study of service experiences. You are one of several groups of people who will serve as respondents in this study. We thank you for being a participant in one of these groups, and for taking the time to participate in the study. Your opinions are important.

In order to obtain your opinions, we will provide you with an opportunity to describe, in writing, either a good or bad service experience you have had with any retailer you choose. You will not even need to name the retailer. This is because it is your thoughts and feelings -- and especially your reactions to the experience -- that are of interest.

In addition to your opinions, these retailers have asked for a number of other kinds of information. Accordingly, this booklet contains a variety of questions not related to your service experiences, but which help retailers understand their customers better. For the most part, these questions will be used to classify everyone's responses into groups. You will be asked to answer some of these questions before you describe your good or bad service experience.

Please Wait for Instructions to Continue

The following several pages contain a number of different questions. Your answers to these questions will provide information about you, as well as some of the things you do, think about, and believe about yourself and others with whom you associate.

Your answers throughout this booklet will remain completely confidential! There is no need to write your name anywhere in the booklet. Remember also that there are no “right” or “wrong” answers. We are interested in YOUR feelings and opinions.

Please Wait for Instructions to Continue

Please tell about yourself:

1. Sex M _____ F _____
2. Your Occupation _____
Spouse's Occupation
(if applicable) _____
3. Your Age _____
4. Number of years of education _____
(total; for example, Kindergarten through 12th grade = 13 years)
5. Highest level of education:
_____ did not finish high school
_____ high school diploma
_____ some college or university
_____ college or university undergraduate degree
_____ graduate degree
_____ other _____

Please Wait for Instructions to Continue

On a scale of 1 to 7 (one being worst and seven being best), how would you rate the following aspects of your health **RELATIVE TO OTHER PEOPLE YOUR AGE?**

Eyesight:

very poor

1	2	3	4	5	6	7
---	---	---	---	---	---	---

excellent

Hearing:

very poor

1	2	3	4	5	6	7
---	---	---	---	---	---	---

excellent

Overall Health:

very poor

1	2	3	4	5	6	7
---	---	---	---	---	---	---

excellent

Social Activity:

**well below
average**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**well above
average**

Do you suffer from any of the following? (please circle Yes or No)

Chronic headaches?	Y	N
--------------------	---	---

Regular dizziness?	Y	N
--------------------	---	---

Long memory lapses?	Y	N
---------------------	---	---

Blackouts or fainting spells?	Y	N
-------------------------------	---	---

Do you take any medication regularly?	Y	N
--	---	---

Other serious ailments?	Y	N
-------------------------	---	---

Please Wait for Instructions to Continue

During our lives, we make thousands of purchases. Some of them involve simple, easy decisions. These decisions might include choosing products that are not complicated, that we know a lot about, and may even have purchased regularly in the past.

Other purchase decisions, on the other hand, are quite complex and difficult. These decisions might include choosing products that ARE quite complicated, and that we don't know very much about. Sometimes there is a great deal of information – in fact, TOO MUCH information! Complex purchase decisions can seem overwhelming.

Imagine, for a moment, that you had to make three *COMPLEX* purchase decisions. How many of them do you think you would make correctly?

Please Wait for Instructions to Continue

(A) **For three COMPLEX purchase decisions,
would you make a correct choice AT LEAST ONCE?**

*If you **WOULD NOT**, please stop. We will move on shortly.*

*If you think you **WOULD**, how certain are you?*

{**Very Certain** 10 9 8 7 6 5 4 3 2 1 **Very Uncertain**}

After circling your response, please go on to (b) below!

(B) **For three COMPLEX purchase decisions,
would you make a correct choice AT LEAST TWICE?**

*If you **WOULD NOT**, please stop. We will move on shortly.*

*If you think you **WOULD**, how certain are you?*

{**Very Certain** 10 9 8 7 6 5 4 3 2 1 **Very Uncertain**}

After circling your response, please go on to (c) below!

(C) **For three COMPLEX purchase decisions,
would you make a correct choice ALL THREE TIMES?**

*If you **WOULD NOT**, please stop. We will move on shortly.*

*If you think you **WOULD**, how certain are you?*

{**Very Certain** 10 9 8 7 6 5 4 3 2 1 **Very Uncertain**}

After circling your response, please stop and wait!

You will now be given a small, unsealed, white envelope. When you get it, open it and take out the small cards inside. The researcher will give you instructions about what to do with the cards.

Please Wait for Instructions to Continue

The next several pages of your booklet will ask you to imagine yourself in different kinds of purchase decision situations. For example, you might learn that you need to buy a telephone because yours has stopped working and can't be fixed.

After each situation is described, you will find a series of questions similar to ones you have seen earlier in your booklet.

As you read on, please do your best to REALLY imagine yourself in each of the three different purchase decisions!

Please Wait for Instructions to Continue

Purchase Decision Making Situation #1

You need to purchase a new automobile, and plan to treat yourself to one that will be a real pleasure to own and drive. There are many different makes and models to choose from, and each one is different from the others in terms of features, options, advantages, and the image it projects to people who see you driving it. You know automobiles “say a lot” about their owners, and you can be sure that the people around you will notice this one. You wouldn’t want your selection saying the wrong thing about you! The different makes and models are all quite expensive, and (of course) cannot simply be returned if you happen to make a bad decision. In that case, you may be able to sell the vehicle to someone, or you could try again by trading it in on another one, but either way you’d almost certainly take a loss.

Please Wait for Instructions to Continue

Below you will find a series of statements. Please read each statement carefully and respond to it by expressing the extent to which you agree or disagree that the statement applies to you with regard to this decision. **Please do your best to imagine yourself truly in the process of making an automobile purchase decision.** For each question, **circle** the number from 1 to 7 that best reflects your belief.

1. **Meeting other people's expectations would make the decision a good one for me.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

2. **In some sense, my decision doesn't matter, since there is no use fighting fate.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

3. **I would not worry about anticipating anyone else's expectations.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

4. **In this decision I would ask friends or relatives for help.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

5. **I would try to get along with others by trying to anticipate what they want or need.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

6. **I'd like to wait for someone else to make this decision so that I don't have to be bothered with it.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I'd like to get a good idea of what the decision is all about before I make it.
strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I would try to fit in by doing what others would do.
strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I'd rather make my own decision and make my own mistakes than let someone else decide for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

10. I want full responsibility for the decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

11. I know that a higher power will arrange for my ultimate well-being in this decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

12. By asking others for advice, I know the final choice won't be a bad one.
strongly disagree 1 2 3 4 5 6 7 strongly agree

13. I would not trust other people to make this decision for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

14. In this decision I'd want a lot of control over what I do and when I do it.
strongly disagree 1 2 3 4 5 6 7 strongly agree

15. I would not look to a higher power for guidance.
strongly disagree 1 2 3 4 5 6 7 strongly agree

16. The will of a higher power affects the outcome of this decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

17. I would make my own decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

18. Others would know what is best for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

19. Some higher power will decide the "goodness" or "badness" of the decision outcome.
strongly disagree 1 2 3 4 5 6 7 strongly agree

20. If this was a group decision I'd want someone else to be the leader.
strongly disagree 1 2 3 4 5 6 7 strongly agree

21. It wouldn't be that important for me to know that others will support me in this.
strongly disagree 1 2 3 4 5 6 7 strongly agree

22. I would be careful to consider every angle before making a decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

23. This is a situation in which I would prefer only one choice rather than having to make a decision.

strongly disagree 1 2 3 4 5 6 7 strongly agree

24. I wish I could push this decision off on someone else.

strongly disagree 1 2 3 4 5 6 7 strongly agree

25. Luck would probably determine the best choice for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

26. In this decision, I'd avoid putting myself in a position where I could be hurt by someone else's mistake.

strongly disagree 1 2 3 4 5 6 7 strongly agree

27. I would avoid allowing someone else tell me what to do.

strongly disagree 1 2 3 4 5 6 7 strongly agree

28. Good and bad decisions even out in the end.

strongly disagree 1 2 3 4 5 6 7 strongly agree

29. I can rely on other people to help me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

30. There is no point trying to learn from some higher power what decision I should make.

strongly disagree 1 2 3 4 5 6 7 strongly agree

31. I trust luck to make the right decision for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

32. I would rather be the decision maker than an advice follower.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Please Wait for Instructions to Continue

Purchase Decision Making Situation #2

You are planning to surprise *someone* very special in your life with *something* very special. You've decided that diamond jewelry is most appropriate. It's not that you consider yourself pompous or pretentious, it is just that a diamond is the one jewel that expresses the feelings that you have. Diamonds, of course, differ in cut, clarity, color, and carat (weight). It is easy to look at the tag and see the weight of the diamonds in a piece of jewelry, but the other things are another matter. You want to select a jewel that matches the way you feel about your special someone, and that others who know about diamonds will admire. You know that diamond jewelry is very visible, and people tend to notice. You *wouldn't* want people noticing that you'd made a poor choice in expressing your feelings!

Please Wait for Instructions to Continue

Below you will find a series of statements. Please read each statement carefully and respond to it by expressing the extent to which you agree or disagree that the statement applies to you with regard to this decision. **Please do your best to imagine yourself truly in the process of making a diamond jewelry purchase decision.** For each question, **circle** the number from 1 to 7 that best reflects your belief.

- 1. Meeting other people's expectations would make the decision a good one for me.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

- 2. In some sense, my decision doesn't matter, since there is no use fighting fate.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

- 3. I would not worry about anticipating anyone else's expectations.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

- 4. In this decision I would ask friends or relatives for help.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

- 5. I would try to get along with others by trying to anticipate what they want or need.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

- 6. I'd like to wait for someone else to make this decision so that I don't have to be bothered with it.**

strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I'd like to get a good idea of what the decision is all about before I make it.
strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I would try to fit in by doing what others would do.
strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I'd rather make my own decision and make my own mistakes than let someone else decide for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

10. I want full responsibility for the decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

12. I know that a higher power will arrange for my ultimate well-being in this decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

12. By asking others for advice, I know the final choice won't be a bad one.
strongly disagree 1 2 3 4 5 6 7 strongly agree

13. I would not trust other people to make this decision for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

14. In this decision I'd want a lot of control over what I do and when I do it.
strongly disagree 1 2 3 4 5 6 7 strongly agree

15. I would not look to a higher power for guidance.

strongly disagree 1 2 3 4 5 6 7 strongly agree

16. The will of a higher power affects the outcome of this decision.

strongly disagree 1 2 3 4 5 6 7 strongly agree

17. I would make my own decision.

strongly disagree 1 2 3 4 5 6 7 strongly agree

18. Others would know what is best for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

19. Some higher power will decide the "goodness" or "badness" of the decision outcome.

strongly disagree 1 2 3 4 5 6 7 strongly agree

20. If this was a group decision I'd want someone else to be the leader.

strongly disagree 1 2 3 4 5 6 7 strongly agree

21. It wouldn't be that important for me to know that others will support me in this.

strongly disagree 1 2 3 4 5 6 7 strongly agree

22. I would be careful to consider every angle before making a decision.

strongly disagree 1 2 3 4 5 6 7 strongly agree

23. This is a situation in which I would prefer only one choice rather than having to make a decision.

strongly disagree 1 2 3 4 5 6 7 strongly agree

24. I wish I could push this decision off on someone else.

strongly disagree 1 2 3 4 5 6 7 strongly agree

25. Luck would probably determine the best choice for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

26. In this decision, I'd avoid putting myself in a position where I could be hurt by someone else's mistake.

strongly disagree 1 2 3 4 5 6 7 strongly agree

27. I would avoid allowing someone else tell me what to do.

strongly disagree 1 2 3 4 5 6 7 strongly agree

28. Good and bad decisions even out in the end.

strongly disagree 1 2 3 4 5 6 7 strongly agree

29. I can rely on other people to help me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

30. There is no point trying to learn from some higher power what decision I should make.

strongly disagree 1 2 3 4 5 6 7 strongly agree

31. I trust luck to make the right decision for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

32. I would rather be the decision maker than an advice follower.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Please Wait for Instructions to Continue

Purchase Decision Making Situation #3

While you're at the pharmacy, you remember that this morning you used the last few drops of mouthwash, and had made a mental note to purchase some more. The store is sold out of the brand you usually buy, but you don't think it is really worthwhile taking the time to go to another store searching for it. There are many other brands to choose from. Some claim just to freshen your breath, others are supposed to kill germs, some are supposed to help prevent colds, and still others even say they can help prevent mouth disease. Most of them do more than one thing. Then there are the different flavors: cinnamon, spearmint, peppermint, and "fresh mint." But all you want is to not have bad breath!!

Please Wait for Instructions to Continue

Below you will find a series of statements. Please read each statement carefully and respond to it by expressing the extent to which you agree or disagree that the statement applies to you with regard to this decision. **Please do your best to imagine yourself truly in the process of making a purchase decision about mouthwash.** For each question, **circle** the number from 1 to 7 that best reflects your belief.

1. Meeting other people's expectations would make the decision a good one for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

2. In some sense, my decision doesn't matter, since there is no use fighting fate.
strongly disagree 1 2 3 4 5 6 7 strongly agree

3. I would not worry about anticipating anyone else's expectations.
strongly disagree 1 2 3 4 5 6 7 strongly agree

4. In this decision I would ask friends or relatives for help.
strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I would try to get along with others by trying to anticipate what they want or need.
strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I'd like to wait for someone else to make this decision so that I don't have to be bothered with it.
strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I'd like to get a good idea of what the decision is all about before I make it.
strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I would try to fit in by doing what others would do.
strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I'd rather make my own decision and make my own mistakes than let someone else decide for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

10. I want full responsibility for the decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

13. I know that a higher power will arrange for my ultimate well-being in this decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

12. By asking others for advice, I know the final choice won't be a bad one.
strongly disagree 1 2 3 4 5 6 7 strongly agree

13. I would not trust other people to make this decision for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

14. In this decision I'd want a lot of control over what I do and when I do it.
strongly disagree 1 2 3 4 5 6 7 strongly agree

15. I would not look to a higher power for guidance.
strongly disagree 1 2 3 4 5 6 7 strongly agree

16. The will of a higher power affects the outcome of this decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

17. I would make my own decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

18. Others would know what is best for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

19. Some higher power will decide the "goodness" or "badness" of the decision outcome.
strongly disagree 1 2 3 4 5 6 7 strongly agree

20. If this was a group decision I'd want someone else to be the leader.
strongly disagree 1 2 3 4 5 6 7 strongly agree

21. It wouldn't be that important for me to know that others will support me in this.
strongly disagree 1 2 3 4 5 6 7 strongly agree

22. I would be careful to consider every angle before making a decision.
strongly disagree 1 2 3 4 5 6 7 strongly agree

23. This is a situation in which I would prefer only one choice rather than having to make a decision.

strongly disagree 1 2 3 4 5 6 7 strongly agree

24. I wish I could push this decision off on someone else.

strongly disagree 1 2 3 4 5 6 7 strongly agree

25. Luck would probably determine the best choice for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

26. In this decision, I'd avoid putting myself in a position where I could be hurt by someone else's mistake.

strongly disagree 1 2 3 4 5 6 7 strongly agree

27. I would avoid allowing someone else tell me what to do.

strongly disagree 1 2 3 4 5 6 7 strongly agree

28. Good and bad decisions even out in the end.

strongly disagree 1 2 3 4 5 6 7 strongly agree

29. I can rely on other people to help me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

30. There is no point trying to learn from some higher power what decision I should make.

strongly disagree 1 2 3 4 5 6 7 strongly agree

31. I trust luck to make the right decision for me.

strongly disagree 1 2 3 4 5 6 7 strongly agree

32. I would rather be the decision maker than an advice follower.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Please Wait for Instructions to Continue

Now please tell about a good or bad service experience. As before, there are no “right” or “wrong” answers. We are interested in your thoughts and feelings – and especially your reactions to the experience.

- 1. What happened that was good or bad?**
- 2. What were your reactions? How did you feel during the experience? How did you feel afterward? Did you tell anyone?**

Please Wait for Instructions to Continue

1.	In general, would you consider yourself familiar or unfamiliar with automobiles?	
	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;"> Very Familiar </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 100%;"> 7 6 5 4 3 2 1 </div> <div style="text-align: left;"> Not at all Familiar </div> </div>	

2.	Would you consider yourself informed or uninformed about automobiles?	
	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;"> Very Informed </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 100%;"> 7 6 5 4 3 2 1 </div> <div style="text-align: left;"> Not at all Informed </div> </div>	

3.	Would you consider yourself knowledgeable about automobiles?	
	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;"> Very Knowledgeable </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 100%;"> 7 6 5 4 3 2 1 </div> <div style="text-align: left;"> Not at all Knowledgeable </div> </div>	

In real life, I think a decision about automobiles:

Is a Very Unimportant Decision	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 7 6 5 4 3 2 1 </div>	Is A Very Important Decision
--------------------------------	--	------------------------------

Is a Decision That Would Require Little Thought	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 7 6 5 4 3 2 1 </div>	Is a Decision That Would Require Great Thought
---	--	--

There Would be Little to Lose If You Made The Wrong Choice	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 7 6 5 4 3 2 1 </div>	There Would be A Lot to Lose If You Made The Wrong Choice
--	--	---

Please Wait for Instructions to Continue

1.	In general, would you consider yourself familiar or unfamiliar with diamond jewelry?	
	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;"> Very Familiar </div> <div style="border: 1px solid black; padding: 5px; text-align: center; flex-grow: 1;"> 7 6 5 4 3 2 1 </div> <div style="text-align: left;"> Not at all Familiar </div> </div>	
2.	Would you consider yourself informed or uninformed about diamond jewelry?	
	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;"> Very Informed </div> <div style="border: 1px solid black; padding: 5px; text-align: center; flex-grow: 1;"> 7 6 5 4 3 2 1 </div> <div style="text-align: left;"> Not at all Informed </div> </div>	
3.	Would you consider yourself knowledgeable about diamond jewelry?	
	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: right;"> Very Knowledgeable </div> <div style="border: 1px solid black; padding: 5px; text-align: center; flex-grow: 1;"> 7 6 5 4 3 2 1 </div> <div style="text-align: left;"> Not at all Knowledgeable </div> </div>	

In real life, I think a decision about diamond jewelry:

Is a Very Unimportant Decision	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 7 6 5 4 3 2 1 </div>	Is A Very Important Decision
Is a Decision That Would Require Little Thought	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 7 6 5 4 3 2 1 </div>	Is a Decision That Would Require Great Thought
There Would be Little to Lose If You Made The Wrong Choice	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 7 6 5 4 3 2 1 </div>	There Would be A Lot to Lose If You Made The Wrong Choice

Please Wait for Instructions to Continue

1.	In general, would you consider yourself familiar or unfamiliar with mouthwash?	
	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;"> Very Familiar </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 100%;"> 7 6 5 4 3 2 1 </div> <div style="text-align: left;"> Not at all Familiar </div> </div>	
2.	Would you consider yourself informed or uninformed about mouthwash?	
	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;"> Very Informed </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 100%;"> 7 6 5 4 3 2 1 </div> <div style="text-align: left;"> Not at all Informed </div> </div>	
3.	Would you consider yourself knowledgeable about mouthwash?	
	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;"> Very Knowledgeable </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 100%;"> 7 6 5 4 3 2 1 </div> <div style="text-align: left;"> Not at all Knowledgeable </div> </div>	

In real life, I think a decision about mouthwash:

Is a Very Unimportant Decision	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 7 6 5 4 3 2 1 </div>	Is A Very Important Decision
Is a Decision That Would Require Little Thought	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 7 6 5 4 3 2 1 </div>	Is a Decision That Would Require Great Thought
There Would be Little to Lose If You Made The Wrong Choice	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 7 6 5 4 3 2 1 </div>	There Would be A Lot to Lose If You Made The Wrong Choice

Please Wait for Instructions to Continue

The remaining few pages contain a number of additional questions. As mentioned earlier, the answers you provide will help to categorize respondents into groups.

As indicated before, your answers throughout this booklet will remain completely confidential. Remember also that there are no “right” or “wrong” answers. We are interested in YOUR feelings and opinions.

Please Wait for Instructions to Continue

For each of the following four (FEEL, LOOK, DO, and INTERESTS), please place a mark (✓ or x) under the age decade you think best fits your opinion of yourself: preteens, teens, twenties, thirties, forties, fifties, sixties, seventies, or eighties.

	Preteens	Teens	20s	30s	40s	50s	60s	70s	80s
I FEEL as though I am in my	_____	_____	_____	_____	_____	_____	_____	_____	_____
I LOOK as though I am in my	_____	_____	_____	_____	_____	_____	_____	_____	_____
I DO most things as though I were in my	_____	_____	_____	_____	_____	_____	_____	_____	_____
My INTERESTS are mostly those of a person in his/her	_____	_____	_____	_____	_____	_____	_____	_____	_____

Please Wait for Instructions to Continue

Please circle your response from -4 to +4 as follows:

-4 = very strong disagreement; -3 = strong disagreement;

-2 = moderate disagreement; -1 = slight disagreement;

0 = neither agreement nor disagreement;

+1 = slight agreement; +2 = moderate agreement;

+3 = strong agreement; +4 = very strong agreement.

1. I really enjoy a task that involves coming up with problem solutions.

very										very
strong	-4	-3	-2	-1	0	+1	+2	+3	+4	strong
disagreement										agreement

2. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.

very										very
strong	-4	-3	-2	-1	0	+1	+2	+3	+4	strong
disagreement										agreement

3. Learning new ways to think doesn't excite me very much.

very										very
strong	-4	-3	-2	-1	0	+1	+2	+3	+4	strong
disagreement										agreement

4. I usually end up deliberating about issues even when they do not affect me personally.

very										very
strong	-4	-3	-2	-1	0	+1	+2	+3	+4	strong
disagreement										agreement

5. Relying on thought to get my way to the top is not an appealing idea.
- | | | | | | | | | | | |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
| very
strong
disagreement | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | very
strong
agreement |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
6. The notion of thinking abstractly is not appealing to me.
- | | | | | | | | | | | |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
| very
strong
disagreement | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | very
strong
agreement |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
7. I only think as hard as I have to.
- | | | | | | | | | | | |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
| very
strong
disagreement | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | very
strong
agreement |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
8. I like tasks that require little thought once I've learned them.
- | | | | | | | | | | | |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
| very
strong
disagreement | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | very
strong
agreement |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
9. I prefer to think about small daily projects to long-term ones.
- | | | | | | | | | | | |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
| very
strong
disagreement | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | very
strong
agreement |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
10. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.
- | | | | | | | | | | | |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|
| very
strong
disagreement | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | very
strong
agreement |
|--------------------------------|----|----|----|----|---|----|----|----|----|-----------------------------|

11. I find little satisfaction in deliberating hard and for long hours.

very
strong disagreement

-4	-3	-2	-1	0	+1	+2	+3	+4
----	----	----	----	---	----	----	----	----

 very
strong agreement

12. I don't like to have the responsibility of handling a situation that requires a lot of thinking.

very
strong disagreement

-4	-3	-2	-1	0	+1	+2	+3	+4
----	----	----	----	---	----	----	----	----

 very
strong agreement

13. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.

very
strong disagreement

-4	-3	-2	-1	0	+1	+2	+3	+4
----	----	----	----	---	----	----	----	----

 very
strong agreement

14. Thinking is not my idea of fun.

very
strong disagreement

-4	-3	-2	-1	0	+1	+2	+3	+4
----	----	----	----	---	----	----	----	----

 very
strong agreement

15. I try to anticipate and avoid situations where there is a likely chance I'll have to think in depth about something.

very
strong disagreement

-4	-3	-2	-1	0	+1	+2	+3	+4
----	----	----	----	---	----	----	----	----

 very
strong agreement

16. I prefer my life to be filled with puzzles that I must solve.

very strong disagreement	-4	-3	-2	-1	0	+1	+2	+3	+4	very strong agreement
--------------------------------	----	----	----	----	---	----	----	----	----	-----------------------------

17. I would prefer complex to simple problems.

very strong disagreement	-4	-3	-2	-1	0	+1	+2	+3	+4	very strong agreement
--------------------------------	----	----	----	----	---	----	----	----	----	-----------------------------

18. It's enough for me that something gets the job done; I don't care how or why it works.

very strong disagreement	-4	-3	-2	-1	0	+1	+2	+3	+4	very strong agreement
--------------------------------	----	----	----	----	---	----	----	----	----	-----------------------------

Please Wait for Instructions to Continue

Please indicate by circling the number (3, 2, or 1) which corresponds to your opinion ("agree," "not sure," or "disagree") about each statement.

	(Agree	Not Sure	Disagree)
Whether or not I get to be a leader depends on my ability.	3	2	1
To a great extent my life is controlled by accidental happenings.	3	2	1
I feel like what happens in my life is mostly determined by powerful people.	3	2	1
When I make plans, I am almost certain to make them work.	3	2	1
When I get what I want it is usually because I'm lucky.	3	2	1
How many friends I have depends on how nice a person I am.	3	2	1
My life is chiefly controlled by powerful others.	3	2	1
Whether or not I get in a car accident is mostly a matter of luck.	3	2	1
If important people were to decide they didn't like me, I probably wouldn't make many friends.	3	2	1
When I get what I want, it is usually because I worked hard for it.	3	2	1
My life is determined by my own actions.	3	2	1
It's chiefly a matter of fate whether or not I have few friends or many friends.	3	2	1

Please Wait for Instructions to Continue

APPENDIX 4:

Decision Scenarios

Automobile Scenario

Diamond Jewelry Scenario

Investment of Inherited Funds Scenario

Mouthwash Scenario

Inexpensive Wristwatch Scenario

Light Bulb Scenario

Automobile Scenario.

You need to purchase a new automobile, and plan to treat yourself to one that will be a real pleasure to own and drive. There are many different makes and models to choose from, and each one is different from the others in terms of features, options, advantages, and the image it projects to people who see you driving it. You know automobiles “say a lot” about their owners, and you can be sure that the people around you will notice this one. You wouldn’t want your selection saying the wrong thing about you! The different makes and models are all quite expensive, and (of course) cannot simply be returned if you happen to make a bad decision. In that case, you may be able to sell the vehicle to someone, or you could try again by trading it in on another one, but either way you’d almost certainly take a loss.

Diamond Jewelry Scenario.

You are planning to surprise *someone* very special in your life with *something* very special. You've decided that diamond jewelry is most appropriate. It's not that you consider yourself pompous or pretentious, it is just that a diamond is the one jewel that expresses the feelings that you have. Diamonds, of course, differ in cut, clarity, color, and carat (weight). It is easy to look at the tag and see the weight of the diamonds in a piece of jewelry, but the other things are another matter. You want to select a jewel that matches the way you feel about your special someone, and that others who know about diamonds will admire. You know that diamond jewelry is very visible, and people tend to notice. You *wouldn't* want people noticing that you'd made a poor choice in expressing your feelings!

Investment of Inherited Funds Scenario.

You have inherited a large sum of money, and want to invest it as wisely as possible. You feel that one way to honor the memory of your loved one is to make the money grow, using what you need, and then passing it on to others in your family in time. You want both safety and a good return, so believe that you need a plan that not only includes bank-sponsored accounts, but also investment in a variety of other financial products. These days, there are sure a lot of options available! Unfortunately, though some of them are very good, many others aren't. You feel that the choices made now aren't just for you, but to carry on a legacy and to provide for those you care for.

Mouthwash Scenario.

While you're at the pharmacy, you remember that this morning you used the last few drops of mouthwash, and had made a mental note to purchase some more. The store is sold out of the brand you usually buy, but you don't think it is really worthwhile taking the time to go to another store searching for it. There are many other brands to choose from. Some claim just to freshen your breath, others are supposed to kill germs, some are supposed to help prevent colds, and still others even say they can help prevent mouth disease. Most of them do more than one thing. Then there are the different flavors: cinnamon, spearmint, peppermint, and "fresh mint." But all you want is to not have bad breath!!

Inexpensive Wristwatch Scenario.

You need to buy a new (inexpensive!) wristwatch. You have always had at least two different ones; this is the one that you will wear around the house and yard, get dirty, and sometimes drop on the floor. You know that nowadays even inexpensive wristwatches come in a huge number of varieties, with different features of all kinds, but all you care is that it tells you what time it is. And when it stops doing that, you'll throw it away and buy another one. Because you'll never wear it for dress, this watch is not what anyone would call "visible," that is, other people don't know or care what brand you wear. In fact, it is the sort of product that people really don't even notice at all.

Light Bulb Scenario.

While you're at the store, you remember that yesterday you used the last spare light bulb, and had made a mental note to purchase some more. The store is sold out of the ones you usually buy, but you don't think it is really worthwhile taking the time to go to another store searching for them. There are many other brands and types to choose from. Aside from the different sizes, (100 watts, 60 watts, etc.), they claim to differ in "lumens," hours of life, and electricity consumption. Some are frosted, and some aren't. Others say they are "non-glare." Some are even "three-way" bulbs, though they look like ordinary ones. But all you want is to be able to flick a switch and see!!