

Cognitive Style Preferences and Financial Management Decision Styles

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The purposes of this paper were to describe the development of a scale which measures preferred financial decision making styles of individuals (FDMDSI), report results of an exploratory study which examined the relationships among the cognitive style preferences of 80 adults and their financial decision styles, recommend modifications in the instrument based on correlation and reliability analyses, and suggest hypotheses for future research. Items for the FDMDSI were developed using the conceptual definitions of analyst, synthesist, idealist, realist, and pragmatist thinking styles of Harrison and Bramson (1982a,b). Results of the analyses indicated 22 internally consistent items which clearly distinguished between the analyst-synthesist and realist-pragmatist approaches to financial decision making. The analyst-synthesist and realist-pragmatist decision makers vary in reflectiveness versus impulsivity in considering and weighing alternatives; quantitative and specific versus qualitative and general information preferences; and a time orientation emphasis on long versus short-term goals.

KEY WORDS: *Cognitive styles, financial decision styles, management*

The relationships between an individual's cognitive style preferences and his/her financial decision making processes have not yet received much research attention (Prochaska-Cue, 1988, 1990) despite the importance of thinking styles in financial planning. The textbooks in financial management assume normative planning processes where it is "better" to have definite financial goals, written spending plans, accurate records, and carefully planned strategies if one wishes for long-term financial security. These assumptions imply that "good financial management" practices are implemented by people who have high preferences for an analytical style of thinking and high levels of competence in the use of

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this cognitive style. A person with a preference for the analyst thinking style prefers: (a) well-formulated, structured problems that can be solved; (b) detailed, factual information; (c) using formulas and objective methods for analyzing alternatives; (d) logical, methodological analyses of problems; and (e) cautious, predictive and factual planning (Harrison & Bramson, 1982a,b).

Cognitive style preferences may influence how financial educators and advisers need to work with students and clients during learning and problem-solving processes to obtain satisfactory results. Research findings are not yet available to indicate whether individuals with thinking style preferences other than analyst manage their financial resources more or less effectively or learn the content of financial management with greater or lesser difficulty.

The purposes of this paper were to explore the relationships between individual cognitive style preferences and preferred financial decision styles, explain the development of an instrument to measure styles of financial decision making, report on an exploratory study which examined cognitive style preferences and financial decision making styles, recommend modifications in the instrument based on findings of the study, and suggest hypotheses to be tested in future research.

Related Literature

The research on cognitive style preferences is extensive and no attempt has been made to report on this literature in detail. However, some explanation has been provided which may be helpful to financial management educators and advisers.

Cognitive Style Preferences

Most descriptions of the construct "cognitive style" include the mental activities of (a) perceiving information and (b) formulating knowledge from the assimilated information (Mann, Watson, Cheney, & Gallagher, 1986). "Cognitive style refers to the many ways in which thought is structured and the behavioral consistency which results from that structure" (Goldstein & Blackman, 1978, p. 3). "Cognitive style" has also been defined as "the characteristic, self-consistent mode of functioning which individuals show in their perception and intellectual activities" (Simon, 1960, p. 72) and "consistent patterns of perceiving, organizing, and processing information during the processes of remembering, thinking, and problem solving" (Knox, 1983, p. 447).

Blaylock and Rees (1984) emphasized that cognitive style, as a representation of the individual, is an important change from personality traits. Cognitive style shifts the unit of study from global traits, inferred from behavioral signs, to the individual's cognitive activities and behavioral patterns in relation to the specific conditions that maintain and modify them (Mischel, 1973, p. 256). There is a distinction between what an individual thinks (personality) and the way an individual thinks (cognitive style) (Pratt, 1980). Cognitive styles have been treated as "traits" in some of the psychological literature because styles are characteristics which can be independent of situational influences (Goldstein & Blackman, 1978, p. 2). Contrary to that position, it has also been recognized that cognitive style does not remain constant across various decision making tasks (Dickson, Senn, & Chervany, 1977). There is further evidence that cognitive style preferences change with age and educational training. People tend to become more analytic and reflective with age (Knox, 1983; Kolb, 1984).

Previous research has established individual differences in cognitive styles in the following dimensions as outlined by Knox (1983, p. 447-448): (a) tolerance versus intolerance for incongruity, or the extent of acceptance of perceptions that differ from conventional experience; (b) reflectiveness versus impulsiveness, or the extent to which various possibilities are considered before deciding; (c) constricted versus flexible control, or the extent of susceptibility to distraction and cognitive interference; (d) focusing versus scanning, or the extent and intensity of attention deployment and span of awareness; (e) leveling versus sharpening, or the extent to which memory blurs and merges similar objects or events; (f) complexity versus simplicity, or the extent to which social behavior is construed in a multi-dimensional way; (g) conceptual differentiation versus description, or the extent to which categorization uses many differentiated concepts, such as thematic, functional, descriptive, and class membership; (h) analytic versus global, or the extent to which items are perceived as discrete from their backgrounds and embedding contexts; (i) breadth versus narrowness, or the extent of preference for an acceptable category range that is broad and inclusive, rather than narrow and exclusive.

Cognitive style researchers have examined a variety of individual variations in cognitive style preferences: (a) the amount of data (Dickson et al., 1977; Kerin & Slocum, 1981); (b) aggregate or raw data (Kilmann & Mitroff, 1976; Bariff & Lusk, 1977); (c) qualitative versus quantitative information (Eason, 1976; Kerin & Slocum, 1981); (d) tabular versus graphic information (McKenny & Keen, 1974; Lucas & Nielson, 1980); (e) preferences for social information

(Blaylock & Rees, 1984); and (f) variations in processes of analyses of information (Henderson & Nutt, 1980).

The Myers-Briggs Type Indicator (Myers, 1962) is a self-report measure of cognitive style based on Carl Jung's theory of psychological types (1970) which stated that individuals differ in their ways of accessing information (perception) and processing information (judgment). The Myers-Briggs Type Indicator is a valid, reliable, self-report measure of cognitive styles (Lake, Miles, & Earle, 1973; Zmud, 1978; Henderson & Nutt, 1980; Kerin & Slocum, 1981; Blaylock & Rees, 1984; Horner & Barrett, 1986; Russnogle, 1987), but was not used in the present study because it included measures of both perception and information processing aspects of cognitive style, as well as introversion or extroversion in relating to other people. The present study focused on the information processing aspect of decision making.

Financial Management Decision Styles

The limited research on financial decision styles has focused primarily on the implementation of financial decisions, rather than the cognitive information processing which occurs during financial decision processes. Examples of this approach include reports on the few couples who have written budgets (Mullis & Schnittgrund, 1982; Schnittgrund & Baker, 1983; Davis, 1987; Davis & Weber, 1990); the extent to which there are written records of spending (Schnittgrund & Baker, 1983; Godwin & Carrol, 1986; Davis, 1987) or yearly calculations of net worth (Davis, 1987). Scannell (1990) reported that keeping written records, an analyst cognitive style preference, was significantly related to feelings of financial well-being. A second approach to the study of implementing financial decisions includes the economic adjustment activities of individuals and families experiencing changes in income due to unemployment (Voydanoff, 1983; Wilhelm & Ridley, 1988); inflation (Caplovitz, 1979; Rettig, 1982); or recession (Moen, 1979; Rettig, Bauer, & Danes, 1990).

Studies which relate cognitive dimensions to financial behaviors have been previously limited to locus of control (Furnham, 1986). Prochaska-Cue (1988, 1990) has now developed an inventory to measure personal financial management styles which was not available at the time the present study was initiated. The Prochaska-Cue Inventory measures how information is perceived and processed and includes the subscales of analyzing, holistic, and paradox. Many of the items in the analyzing subscale are similar to the Harrison and Bramson (1982a) conceptualization of analyst thinking style because they represent the need for detailed, factual information (#3, 6, 8, 9), order and

structure in problem solving (#10, 14), and objective criteria for analysis (#11, 13). Holistic subscale items are related to realist and pragmatist thinking styles (Harrison & Bramson, 1982a) in the indication of preference for global and qualitative information (#3), impulsiveness (#2), quick, expedient pay offs (#7), and lack of interest in long-term goals (#8) (Prochaska-Cue, 1990, p. 15-17).

Conceptual Foundation of the Study

The overall conceptual framework for the study was based on Rettig (1988) which describes individual and family managerial decision styles as including perceiving, deciding, and actuating styles. The present study focused on the portion of the framework representing individual decision makers (DM) and their preferred deciding styles. The deciding stage of the management process involves thinking about a problem by analyzing the alternatives, information, and available resources in order to decide on a course of action. The decision situation (DS) represented in the present study involves financial management situations. The major decision processes (DP) are assumed to be economic and technical.

The Harrison and Bramson Inquiry Modes Questionnaire (InQ) (1982a,b) provided a conceptual means for categorizing personal styles of information processing which could apply to financial decision situations. The InQ is based on the modes of inquiry outlined in five philosophical methodologies which are related to the five styles of thinking: analyst, synthesist, idealist, realist, and pragmatist. Leibniz's symbolic logic, a scientific methodology developed by Descartes, corresponds to the analyst thinking style, Hegel's dialectic phenomenology closely corresponds to the synthesist thinking style, while Kant's philosophical idealism is related to the idealist style. Locke's empiricism and its central idea of utilitarianism is like the realist thinking style, while Singer's philosophical pragmatism is correlated to the pragmatist style (Harrison & Bramson, 1982b, p. 179). The most productive thinkers are those who are capable of thinking effectively in all five dimensions.

The reported research on the InQ instrument has been minimal. Bruvold, Parlette, Bramson, and Bramson (1983) reported that the items comprising each thinking style correlated highly with total subtest scores and differentiated high and low scorers in each subtest. A test-retest reliability of $r = .63$ for the total scale with a six-week time interval was reported. Validity testing was initiated by assessing profiles of six dissimilar occupational groups. The groups were

small, but the results fit what is generally assumed to be the typical thinking styles of the groups. Engineers were highest on the analyst thinking style, while social workers were highest on the idealist and lowest on the analyst style. Insurance staff were highest on the pragmatist thinking style. Factor analyses indicated the synthesist and analyst subscales to be the most pure.

Kienholz (1984) compared the thinking styles of medical students and graduate students in architecture using the InQ. Significant differences were found between the two groups ($p < .02$) on the idealist scores preferred by the architects and the realist scores ($p < .04$) favored by the medical students. The author suggested that individuals may select areas of study which best fit personal cognitive styles, and that education also encourages the development of cognitive styles consistent with the particular area of study.

Analyst Thinking Style Preference

The analyst is described as representing about 35% of people tested on the InQ and is one who approaches problems in a careful, logical, methodological way, paying great attention to facts and details. Planning carefully, analysts gather as much information as possible before making a decision, and they seldom "shoot from the hip" (Harrison & Bramson, 1982b, p. 15). People with analyst thinking style preference like to search for one best solution, systematically analyze alternatives, want to search for more data when there is uncertainty, and prefer to isolate one variable at a time when looking at a problem. Analysts prefer to chart the situation in order to view the dimensions of the problem and improve the focus. A deductive reasoning approach is preferred and conclusions are reached with impersonal and objective rules, or formulae or charts whenever possible. The value emphases of predictability, stability, rationality, and order are present in decision making processes.

The analyst thinking style preference as outlined by Knox (1983, p. 447-448) is characterized by reflectiveness, rather than impulsiveness, in considering alternatives; quantitative, rather than qualitative, data preference; constricted control over cognitive interferences; focusing in the span of attention or awareness; conceptual differentiation; analytic, rather than global, in separating problems from context; and narrowness, rather than breadth, in categorizing ideas.

Synthesist Thinking Style Preference

The preference for synthesist thinking style is least common among people who have taken the InQ (11%) and is represented by combining ideas, that originally

seem very different into something new and original, a dialectic and integrative thinking pattern. Synthesists seek conflicts which clarify values and underlying assumptions. People with synthesist thinking style preferences are prone to express opposite points of view, employ speculation, suggest far-out solutions, and tend to point out absurdities when analyzing problem situations. Synthesists enjoy speculative, philosophical, intellectual arguments that are not too somber. Problem analyses proceed with suspending opposite ideas, negative analysis, and asking "dumb-smart" questions in order to anticipate possible outcomes of alternative actions. Synthesists prefer problem situations where the important issues are values and emotions (Harrison & Bramson, 1982b, p. 1-31).

The comparison with dimensions of cognitive style as outlined by Knox (1983) would characterize synthesists as reflective, rather than impulsive, in considering and weighing alternatives; preferring flexible control over interferences; focusing, rather than scanning, in the span of attention awareness; complexity in viewing social behavior in a multi-dimensional way; conceptual differentiation; analytic, rather than global, in separating problems from context; and qualitative, rather than quantitative, data preferences.

Idealist Thinking Style Preference

The idealist thinking style preference has represented 60% of those tested on the InQ and is characterized by assimilative thinking with a focus on a broad view of the problem and the long-range view. Idealists are future oriented, show interest in social values, and like to think about goals or where they are going and why. Idealists find conflict unpleasant and seek to avoid conflict when analyzing alternatives by finding ways in which the argument can be humanized and values and goals can aid in facilitating agreement. The thought processes of idealists are receptive to a diversity of views which they wish to assimilate into an umbrella solution with something in it for everyone. They are more likely to reach conclusions based on personal and special considerations or intuition, rather than objective criteria. Often idealists have very high standards.

The cognitive dimensions outlined by Knox (1983) would characterize idealists as tolerant of perceptions which differ from conventional experience; reflective in considering possibilities before deciding; flexible control over distraction; scanning, rather than focusing, in the span of awareness; leveling in the extent to which memory blurs and merges similar objects or events; complexity in viewing multi-dimensional social behavior; global, rather than analytic, in

perceiving problems within their embedding contexts; and breadth, rather than narrowness, in defining category ranges.

Realist Thinking Style Preference

Realist thinking style preferences are represented in 24% of those tested on the InQ. The style is described as one that induces reality from concrete observation of the facts. Realists insist on defining clear objectives and in identifying immediately available resources. They prefer to get to the specifics of a problem very quickly and to reduce the problem to its essential facts and simplest form, focusing attention on the work presently at hand. Realists have little hesitation in seeking professional assistance when the facts of the problem are not clear and to make incisive corrections when plans are going wrong. Structured problems and factual data are preferred with attention given to resources and concrete results. Choices are made with objective rules after questioning the facts and resources.

A comparison with the cognitive styles of Knox (1983) would identify realists as impulsive in the extent to which various possibilities are considered before deciding; global in perceiving problems embedded within their context; focusing, rather than scanning, in their span of awareness; leveling, rather than sharpening, in conceptual distinctions; and a preference for factual data.

Pragmatist Thinking Style Preference

The pragmatist thinking style is represented in 18% of the people tested by Harrison and Bramson (1982b, p. 13) and is focused on solving problems in a flexible, adaptive way in whatever way that works for the situation. Decisions are based on intuition and personal experience more than on factual data. Pragmatists excel at finding new ways of doing things with existing resources. They approach problems in a piecemeal, incremental fashion, one thing at a time. They have less interest in the "big" picture, the high standards of the idealist, or the logical, planned, well-thought-out strategy of the analyst. Pragmatists are more interested in getting things done and are willing to try experiments and innovations in looking for a quick pay-off. They tend to do market-oriented, tactical thinking and contingency planning to find whatever works. Pragmatists have high tolerance for ambiguity, meaning they have less need to know exactly where they are going, or to have a sense of predictability about events.

A comparison with the cognitive styles outlined by Knox (1983) would characterize pragmatists as having high tolerance for incongruity;

impulsiveness, rather than reflectivity, in considering various courses of action; global, rather than analytic, in viewing problems within embedding contexts; qualitative, rather than quantitative, data preferences; flexible control over cognitive interferences; scanning, rather than focusing, in span of awareness; and leveling, rather than sharpening, in conceptual distinctions.

Theoretical Assumptions Underlying the Research

Exploratory research begins with general hypotheses which guide the researcher in the design of the study. These hypotheses are reported as assumptions underlying the research since the first attempt to measure a construct typically lacks the precision necessary for statistical hypothesis testing. The following assumptions were present prior to initiation of the research:

1. "Good" financial management practices assume the financial manager has a high preference for and a high level of competence in the use of an analytical style of thinking.
2. Financial management styles of individuals will vary according to their cognitive style preferences and abilities.
3. Individuals with high levels of competency in the analyst thinking style may show evidence of more effective financial planning and decision making.
4. Financial decision making is more difficult and unpleasant for individuals with lower preferences for the analyst thinking style and/or lower competency with the style.
5. Individuals with analyst cognitive style preferences may be more likely to do their own financial planning, rather than consult a financial professional.
6. Persons with realist thinking style preferences may be most likely to consult financial professionals.
7. The person with a preference for the analyst cognitive style will approach financial decision making as a well-formulated problem that can be solved; seek detailed, factual information; use quantitative data, formulas and objective methods for analyzing alternatives; use a logical, methodological approach in facing a problem situation; and prefer cautious, predictive, and factual planning.

Methodology

The "Inquiry Modes Questionnaire (InQ) (Harrison & Bramson, 1982a) and the Financial Decision Making Styles (FDMDS1) instrument were administered in 1987 to 300 County Extension personnel in a Midwestern state during five one-day training sessions on decision making. The research objectives were not the primary purpose of the training and respondents could choose whether or not to allow their responses to be used for research purposes. The time limitations of the training session also limited the number of respondents, since two complete questionnaires were needed in order to provide usable data.

Sample

Complete data from 80 adults were usable for research, 75% of these were women and 75% were county agents or home economists rather than state subject matter specialists or administrators. County agents and home economists typically have a baccalaureate degree and are generalists in a subject matter, while state subject matter specialists and administrators typically have Ph.D. degrees and a subject matter specialty. The average age of respondents was 36 years and the modal category for personal income was \$30,000-\$35,000 annually for full-time employment (88%). The respondents were primarily Caucasian (96%) and Protestant (79%, 18% Catholic, 3% other) with 17 years of schooling (mean). Thirty-two percent of the respondents had Master's degrees and 9% had completed Ph.D. degrees. Most of the people were married (72%) for an average length of 13 years and had two children living at home. Nineteen percent of the sample were single, never having been married. The research sample differed from the population of state Extension personnel in gender and educational level. Complete responses were received from more women and individuals with advanced educational degrees.

Measures

Inquiry Modes Questionnaire (InQ).

The InQ (Harrison & Bramson, 1982a) contains 18 items in which the respondent must rank order the five responses from the one that is "most like you" (coded 5) to the one that is "least like you" (coded 1). Each of the responses represents a preference for asking questions or making decisions representative of a particular thinking style. The first question asks: "When there is conflict between people over ideas, I tend to favor the side that: (a) identifies and tries to bring out the conflict (synthesist); (b) best expresses the values and ideas involved (idealist); (c) best reflects my personal opinions and experience (pragmatist); (d) approaches the situation with the most logic and

consistency (analyst); (e) expresses the argument more forcefully and concisely (realist). The thinking styles in the above example were not labeled for respondents. The responses to questions are presented in random order so that thinking styles are not in the same order for questions on any one page. The instrument consists of five subscales representing the five thinking styles. Each subscale has a total score for 18 responses.

Preferred Financial Management Styles.

The Financial Decision Making Styles (FDMS1) was first developed in 1986 following procedural guidelines outlined by Skinner (1985). The cognitive styles of analyst, synthesist, idealist, realist, and pragmatist (Harrison and Bramson, 1982a,b) were used as the basis for the development of individual items. Twelve items representing each thinking style were generated and then edited by two judges for wording, social desirability bias, conciseness, and clarity. The instrument was evaluated by seven graduate faculty members. Minor changes were made in wording and ordering of items before it was administered to 20 research faculty and doctoral students for critique. The result of the critique was an instrument with 50 items and two open-ended questions. The open-ended questions asked for behaviors that would more accurately describe the financial management style of the respondent. The instrument was then administered to 25 adults in a continuing education class and again modified for clarity.

The individual questions were generated with the respondent as actor: "I want to consider as many detailed facts as possible before I make a financial decision" (analyst). The possible responses were: "Exactly like me" (coded 6), "a lot like me," "slightly like me," "generally not like me," "not at all like me" and "not like me due to resources available, too many or too few" (coded 1). Items were presented to respondents in random order to minimize the order effects of response bias. Respondents were instructed to respond in a way that described how they would be likely to manage their finances if they were "free to act independently". The emphasis was on their preferred style of financial decision making.

Analyses

SPSSX routines (Norusis, 1984) were used for all statistical procedures. Items and scales in the FDMS1 were examined for variance and skewness, internal consistency, and correlation and co-variance with subscales of the InQ. Factor analyses were not feasible because the sample size was too small for the number of items on the inventory. The results of item analyses were completed using

the Inquiry Modes Questionnaire (InQ) as a standard against which the financial decision-making style items and subscales were evaluated.

Results

Item Analyses for Inquiry Modes Questionnaire (InQ)

The descriptive data for the thinking style preferences (InQ) of respondents in this sample are reported in Table 1. The maximum score on any one thinking style was 90 and the minimum score 18 points. The scores indicate these respondents had higher preferences for the realist and pragmatist thinking styles which are described by an interest in concrete results, getting quickly to the specifics of a problem, rapid closure on the collection of information, a search for quick and expedient pay-offs, and less interest in long-term goals.

Variables are normally distributed when the mean, median, and mode have the same value and skewness and kurtosis are zero. The means, medians, and modes are fairly similar for all thinking styles and best for the idealist subscale. Negative kurtosis values on all thinking styles except the idealist indicate there is more variation in the responses of the small, homogeneous study sample than would be true of a normal distribution. A negative value for skewness on analyst and pragmatist styles indicates a negatively skewed distribution in which there are more positive responses than would be true of a normal distribution.

Table 1
Descriptive Statistics for Thinking Style Preferences (InQ)

| Thinking Style | n | Mean | Median | Mode | S.D. | Kurtosis | Skewness | Range |
|----------------|----|-------|--------|-------|------|----------|----------|-------|
| Analyst | 80 | 52.15 | 53.00 | 53.00 | 8.30 | -.448 | -.170 | 36 |
| Synthesist | 80 | 46.13 | 44.50 | 43.00 | 7.68 | -.539 | .395 | 33 |
| Idealist | 80 | 56.90 | 56.00 | 56.00 | 7.34 | .092 | .395 | 34 |
| Realist | 80 | 57.06 | 57.00 | 53.00 | 7.38 | -.041 | .096 | 38 |
| Pragmatist | 80 | 57.44 | 59.00 | 61.00 | 6.98 | -.058 | -.462 | 34 |

Table 2
Pearson Correlations of Thinking Style Preference Subscales (InQ)

| | <u>n</u> | <u>Analyst</u> | <u>Synthesist</u> | <u>Idealist</u> | <u>Realist</u> | <u>Pragmatist</u> |
|------------|----------|----------------|-------------------|-----------------|----------------|-------------------|
| Analyst | 80 | 1.00 | | | | |
| Synthesist | 80 | -.21* | 1.00 | | | |
| Idealist | 80 | -.31** | .13 | 1.00 | | |
| Realist | 80 | -.20* | -.60** | -.39** | 1.00 | |
| Pragmatist | 80 | -.43** | -.39** | -.39** | .32** | 1.00 |

* $p < .05$

** $p < .01$

The correlation matrix for the subscales of the InQ is reported in Table 2. Results indicate the analyst thinking style preference is negatively correlated and distinct from all other styles. However, the positive correlation ($r = .32$) between the realist and pragmatist styles suggests a lack of conceptual independence. There is also some relationship ($r = .13$) between synthesist and idealist thinking style preferences. These positive relationships may, to some extent, affect the results of item analyses on the FDMDS1 and may be a threat to construct validity when there is overlap between definitions and measures of two constructs.

Item Analyses for Preferred Financial Management Styles (IFMS1)

The individual items on the FDMDS1 are reported in the Appendix Table, categorized by thinking style preference, and reported by correlations of each item with subscales of the InQ thinking styles. Results indicate that at least ten items representing the analyst approach to financial decision making were good measures. There were no good measures of the idealist approach to financial decision making and few which accurately represented realist and pragmatist financial decision style preferences.

The individual items having highest correlations with the analyst thinking style and lowest correlations with other styles are the first ten items, and items 4-17 are less discriminating. The synthesist approach to financial decision making is represented by items 18-23, but all of the six items also have positive

correlations with other thinking styles, and only items 4, 10, 12, and 16 accurately represent the construct. The realist thinking style approach to financial decision making is represented in items 24-28, but the correlations with the pragmatist thinking style are also positive. The overlap between these two styles on the InQ ($r = .32$) would suggest that the measures of the FDMDS1 would also overlap for these two styles. Items 29-36 represent the pragmatist approach and items 14, 17, 24, 29 and 31 accurately represent the construct.

The items to be retained from FDMDS1 for future versions of the scale would ideally have: (a) accuracy in representing the conceptual definitions, (b) high correlations with the appropriate subscale of the InQ, (c) positive contribution to the overall alpha, (d) adequate variance, (e) absence of extremely skewed distributions, and (f) endorsement by a reasonable number of the sample. Based on the above criteria and results from this small, homogeneous sample, items 37-50 would appear to be questionable for the reasons indicated in the footnotes of the table. Due to the few good items representing synthesist, realist, and pragmatist approaches to financial management decision styles, reliability analyses were completed to investigate the possibility of combined subscales for analyst-synthesis and realist-pragmatist styles.

The strategy of combination seemed to have conceptual validity since the analyst-synthesist (AS) thinking style combination was described by Harrison and Bramson (1982b) as having a respect for structure and logic with an understanding and valuing of the opposite. The AS was described as a planner, who takes the trouble to develop a counterplan, and has a combined interest in speculation and theoretical method which can have immense intellectual and conceptual power (Harrison & Bramson, 1982b, p. 95).

Harrison and Bramson (1982b) further noted that the realist-pragmatist (RP) thinking style combinations are highly task-oriented and approach problems in a less structured and deliberate way. The RP thinking style people were described as prone to make quick decisions, with a minimum of data, and to be more interested in movement and action than in careful planning. They can be impulsive, too quick to move, and too interested in concrete results (Harrison & Bramson, 1982b, p. 91).

A summary of the reliability analyses is reported in Table 3 indicating the items with good internal consistency for each of the subscales. The eleven-item analyst-synthesist subscale had an internal consistency of .813 (Cronbach's

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alpha) and the eleven-item realist-pragmatist subscale had an internal consistency of .753 (Cronbach's alpha). Both combined subscales have higher correlations with the combined subscales of the InQ than existed for the separate subscales. The correlation matrix of newly created subscales are reported in Table 4 indicating the negative correlation of $r = -.341$ as desired.

The correlations of the thinking styles as measured on the InQ and financial decision styles as measured on FDMDS1 with income, age, and education are reported in Table 5. The analyst and analyst-synthesist subscales of financial decision making are positively related to age and income and not significantly correlated with education. None of the financial decision-making style subscales indicate a statistically significant correlation with years of education.

The items for the two internally consistent subscales of the financial decision making styles were as follows:

Analyst-synthesist subscale:

1. I plan financial decisions by gathering as much detailed information as possible to try for a more predictable outcome (Analyst Item 7);
2. I like to contrast two opposite investment possibilities until the answer becomes clear in my mind (Synthesist Item 10);
3. I have a financial plan with strategies in case of long life, disability, or premature death (Synthesist Item 12);
4. I like to consider unusual solutions in order to think more creatively about financial issues (Synthesist Item 16);
5. I use the formulas for future and present value to help me decide about savings and investment choices (Analyst Item 18);
6. I use the formula for my marginal tax rate to decide whether or not to invest in taxable or non-taxable alternatives (Analyst Item 23);
7. I want to consider as many detailed facts as possible before I make a financial decision (Analyst Item 26);
8. I carefully study my financial progress by making a yearly chart of net worth changes (Analyst Item 33);
9. I calculate changes in the ratio of my total net worth to total assets on a regular basis (Analyst Item 38);
10. My financial records are detailed and accurate (Analyst Item 42);
11. I prefer to make current spending decisions based on a long-range financial plan (Analyst Item 43).

Realist-pragmatist subscale:

1. I avoid long-term financial planning (Realist Item 5);
2. I can see the overall financial picture, but do not make detailed written plans (Realist Item 9);
3. I prefer to take advantage of immediate opportunities rather than make an overall savings plan (Pragmatist Item 13);
4. I dislike keeping records of spending so much that it doesn't get done unless someone else does it (Pragmatist Item 14);
5. I would rather talk to a friend than read a financial report to help me decide about an investment (Pragmatist Item 17);
6. I know the financial outcomes I want, but I prefer to have someone else figure out the strategies (Pragmatist Item 24);
7. When it comes to financial decisions, I do what my intuition suggests is best (Pragmatist Item 29);
8. Once I have made a decision about finances, I immediately take action (Realist Item 30);
9. If an unexpected financial opportunity arises, I am likely to seize it, rather than consider a master plan (Pragmatist Item 31);
10. I make spending plans, but I have trouble disciplining myself to carry them out (Realist Item 40);
11. I save money, but not a fixed percentage on a regular schedule (Realist Item 46).

Conclusions

The measures used in this exploratory study and the limitations of a small and homogeneous sample were insufficient to confirm five styles of financial management decision making. The results do suggest there may be a relationship between individual cognitive styles and financial decision making styles, and at least two approaches to financial decision making which can be distinguished. Analyst-Synthesist-oriented financial decision makers are hypothesized to be more: interested in long-term goals; likely to be reflective and slow to act when considering and weighing alternatives; systematic in applying specific, factual information in guiding choices. Realist-Pragmatist financial decision makers are hypothesized to be more: interested in present

Table 3
Descriptive Data for Subscales of Financial Decision Making Styles FDMDS1^a

| <u>Subscale (Item Numbers)</u> | <u>Number of Items</u> | <u>Cronbach's Alpha</u> | <u>Mean</u> | <u>Standard Deviation</u> | <u>Correlation with InQ Subscale</u> |
|---|----------------------------|-----------------------------|-------------|-------------------------------|--|
| Analyst (7, 18, 23, 26, 33, 38, 42, 43) | 8 | .804 | 27.36 | 6.18 | .45** |
| Synthesist (10, 12, 16) | 3 | .534 | 10.82 | 2.56 | .33** |
| Realist (5, 9, 46) | 3 | .627 | 11.36 | 3.07 | .24* |
| Pragmatist (14, 17, 24) | 3 | .617 | 11.30 | 2.95 | .26** |
| Analyst-Synthesist (7, 10, 12, 16, 18, 23, 26, 33, 38, 42, 43) | 11 | .813 | 38.23 | 7.76 | .46** |
| Realist-Pragmatist (5, 9, 13, 14, 17, 24, 29, 30, 31, 40, 46) | 11 | .753 | 41.13 | 7.20 | .33** |

^a n=80

* $p < .05$

** $p < .01$

realities, resources, and short-term goals; likely to be impulsive and action oriented in considering and weighing alternatives; desirous of rapid closure on the collection of information; and likely to use general information and personal experience as guidelines for choice. The differences in these two financial decision styles are hypothesized to be the dimensions of reflectiveness versus impulsivity in weighing alternatives; analytic versus global in perceiving the context of decisions; quantitative versus qualitative data preferences; and long versus short-term time orientations as outlined by Harrison and Bramson (1988a), Kerin and Slocum (1981), and Knox (1983). These hypotheses will require testing in future studies.

Table 4
Pearson Correlations of Subscales for Financial Decision Making Styles (FDMS1)^a

| | <u>Analyst</u> | <u>Realist</u> | <u>Synthesist</u> | <u>Pragmatist</u> | <u>Realist-Pragmatist</u> | <u>Analyst-Synthesist</u> |
|--------------------|----------------|----------------|-------------------|-------------------|---------------------------|---------------------------|
| Analyst | 1.000 | | | | | |
| Realist | .275** | 1.000 | | | | |
| Synthesist | .453** | -.118 | 1.000 | | | |
| Pragmatist | -.386** | .352** | -.106 | 1.000 | | |
| Realist-Pragmatist | -.401** | .770** | -.062 | .760** | 1.00 | |
| Analyst-Synthesist | .956** | -.259* | .696** | -.340** | -.341** | 1.000 |

^a n=80
* p < .05
** p < .01

Discussion

Exploratory studies have many limitations which prevent drawing firm conclusions from the results, or generalizing the results beyond the sample. However, they serve a purpose in generating new ideas and in calling attention to issues which have previously been ignored and deserve research attention. Exploratory studies can be useful in assessing whether or not assumed relationships between ideas can be demonstrated and if a full-scale study would be worthwhile. Hypotheses can be generated for more rigorous testing with diverse samples. The FDMS1 requires additional administrations to larger samples of differing types of people before eliminating items or outlining firm conclusions. Additional items representing the synthesist, idealist, realist, and pragmatist financial decision-making styles need to be generated. These items can best be generated by qualitative methods which interview idealists, for example, to determine the way they think about financial decisions.

Table 5
Pearson Correlations for Subscales of Thinking Styles and Financial Decision Making Styles with Income, Age, and Years of Education^a

| Subscale | Thinking Styles (InQ) | | | Financial Decision Making Styles (FDMS1) | | |
|--------------------|-----------------------|--------|-----------|--|-------|-----------|
| | Income | Age | Education | Income | Age | Education |
| Analyst | .12 | .21* | .15 | .30** | .35** | .05 |
| Synthesist | .39** | .13 | .10 | .29** | .21* | .06 |
| Idealist | -.13 | -.29** | .16 | | | |
| Realist | -.27** | -.06 | -.26* | -.17 | -.10 | -.15 |
| Pragmatist | -.18 | -.09 | -.18 | -.02 | -.04 | -.13 |
| Analyst-Synthesist | .38** | .26* | .20 | .34** | .36** | .10 |
| Realist-Pragmatist | -.28** | -.09 | -.27** | -.08 | -.05 | -.13 |

^a n=80

* $p < .05$

** $p < .01$

The differences between the reflective or contemplative (analyst-synthesist) and the impulsive or action-oriented (realist-pragmatist) financial decision making styles found in the present study are more believable since many of the items in the Prochaska-Cue Inventory (1988, 1990) represent contemplative (analyzing scale) and action-oriented approaches (holistic scale). Prochaska-Cue (1990) also found significant relationships between the analyzing financial management style and income and age. No significant relationship was found between educational attainment and financial management style. The relationships between age, income, and education were also found in the present study.

It may be some time before there will be firm research evidence for the relationships among cognitive style preferences and financial management decision styles. The relationship seems plausible to financial planners who have informally observed cognitive variation in clients. Financial advisers typically have numerous clients who are social workers, therapists, and counselors, who appear to have an idealist thinking style and prefer to hire assistance in doing the financial analyses they dislike. A different advising approach is needed for

analysts who delay decisions with detailed fact finding and realists who want clear objectives and strategies (R.R. Kamla, personal communication, December 17, 1990).

Teachers need to be aware that students who have preferences for idealist, realist, and pragmatist thinking styles may require different teaching and learning methods in order to understand the content presented in financial management courses. The following discussion of educational implications is based on the informal testing and observation of students by the first author between 1984-1989.

It can be hypothesized that the student who is an "ideal-type" analyst thinker is one who most enjoys learning financial management because of the factual content. S/he may learn best by calculating case problems, particularly those with formulas. Present and future value formulas are looked upon with favor as a way to find specific answers with concrete facts. The calculations demonstrated by the teacher are intently followed by the analyst student who thinks the details of the calculations are interesting. Computer applications are also appreciated by students with analyst thinking style preferences.

The synthesist student assumes no two people will agree on the facts, that facts require interpretation, and the inferences that are made from facts are the important content. Given the above characteristics, the synthesist student may learn most effectively from class discussions where s/he delights in taking the opposite point of view and questioning the teacher's assumptions. The synthesist student also likes the teacher to play the "devil's advocate role" in responding to the opinions and factual statements provided by students. Such debates help clarify the values and assumptions but create discomfort for the idealist thinker who dislikes conflict.

The personalization of factual information is most important to the idealist thinker. The finance content may have to be introduced on a more emotional level to gain the interest of idealists before proceeding to the more factual content. Subjects, such as retirement planning, can be more easily accepted by idealists when discussing personal job interviews and the need to develop intelligent questions to ask potential employers about retirement benefits. Personalizing the information in this way helps to make it more acceptable to idealist thinkers who get impatient with facts and quantitative data and dislike case problems or computer applications.

The personalized factual information is less pleasing to realist thinkers who want to hear the most important, specific facts of the problem very quickly. Realist students get impatient with long introductions to the content and dislike drawn-out, rambling class discussions. It is important for the teacher to keep classroom discussions clearly focused on factual content from the view point of the ideal-type realist student. A classroom role playing situation concerning the disagreements of a couple about spending priorities would excite the idealist student to think about budgeting processes but would alienate the realist thinker who would find it unpleasant and a waste of time.

The personalization of factual information is also effective for pragmatist students because the teacher has demonstrated the immediate usefulness of the information which is of central concern to pragmatist thinkers. The diversity of students in classrooms is a problem for teachers in choosing immediately useful information for pragmatist thinkers. A wealthy young student receiving income from a trust fund may be more interested in learning about stocks and bonds than an older pragmatist student living on a poverty level income as a single parent. The teacher is likely to be assisted by the pragmatist student who will ask questions in order to understand what can be done today about the issue for the day and how it directly applies to him/her.

Harrison and Bramson (1982a,b) note that many people have strong preferences for two thinking styles, but less than 2% of those tested had strong preferences for three different styles. Informal classroom testing by the first author seems to confirm that students are often competent in at least two thinking styles. The versatility of student thinking styles makes the task of teaching much less difficult than it appeared in the previous discussion of "ideal" types. The study of ideal types does serve a purpose in sensitizing educators to the diverse learning styles of students and the ways in which financial content can best be presented.

It will be important for educators in the future to experiment with teaching methods that are effective with students who dislike money management because of the analytical assumptions about "good" money management practices. Financial counselors also need to consider different treatment approaches to problems which have resulted from impulsive financial decisions compared to those which have resulted from too much reflection and too little action. An awareness of the cognitive styles of students and clients may assist teachers and financial advisers in working with students and clients more effectively. Additional research is also needed in order to fully understand how

cognitive functioning influences financial decision-making patterns of individuals.

Appendix 1

Pearson Correlations of Individual Items in the Financial Decision Making Styles Instrument with Thinking Styles Subscales

| FDMS1 Items with (Item Number) ^{a,b} | Analyst | Realist | Synthesist | Pragmatist | Idealist |
|--|---------|---------|------------|------------|----------|
| ANALYST | | | | | |
| 1. I prefer to make current spending decisions based on a long-range financial plan (43) | .47** | -.14 | .09 | -.42 | -.12 |
| 2. I want to consider as many detailed facts as possible before I make a financial decision (26) | .43** | -.16 | .04 | -.24 | -.16 |
| 3. After financial alternatives seem clear, I try to figure out what could go wrong if I went ahead with them (20 ^b) | .42** | -.13 | .00 | -.36 | -.05 |
| 4. I plan financial decisions by gathering as much detailed information as possible to try for a more predictable outcome (7) | .40** | -.17 | -.03 | -.17 | -.20 |
| 5. I have carefully estimated my financial needs for retirement and know what resources I will create for that purpose (6 ^b) | .34** | -.04 | -.09 | -.32 | -.17 |
| 6. It is very important for me to consider how a financial strategy will affect the other people involved (19 ^b) | .30** | -.05 | -.04 | -.30 | .02 |
| 7. When I am making an important financial decision, I develop a weighting system to analyze the pros and cons (25) | .26** | -.14 | -.03 | -.16 | .01 |
| 8. I carefully study my financial progress by making a yearly chart of net worth changes (33) | .25** | -.15 | .00 | -.23 | .08 |
| 9. I save a given percentage of my income on a regular basis (47) | .24** | -.26 | .18 | -.24 | -.01 |
| 10. I can usually look over the financial situation from several | .22* | .01 | .04 | -.27 | .09 |

Financial Decision Styles

| FDMDS1 Items with (Item Number) ^{a,b} | Analyst | Realist | Synthesist | Pragmatist | Idealist |
|--|---------|---------|------------|------------|----------|
| points of view and see what needs to be done (8 ^b) | | | | | |
| 11. I usually study last month's expenditures to check on over and underspending (39) | .20* | -.02 | -.09 | -.24 | .11 |
| 12. My spending goals for this year are in writing (2) | .21* | -.27 | .17 | -.29 | .15 |
| 13. My financial records are detailed and accurate (42) | .18 | -.01 | .06 | -.30 | .02 |
| 14. I calculate changes in the ratio of my total net worth to total assets on a regular basis (38) | .17 | -.16 | .04 | -.17 | .01 |
| 15. I use the formulas for future and present value to help me decide about savings and investment choices (18) | .17 | -.03 | -.05 | -.07 | -.06 |
| 16. I calculate changes in my liquid assets to current debts ratio on a regular basis (34) | .17 | -.21 | .08 | -.17 | .07 |
| 17. I use the formula for my marginal tax rate to decide whether or not to invest in taxable and non-taxable alternatives (23) | .15 | -.13 | .01 | .02 | -.09 |
| SYNTHESIST | | | | | |
| 18. I like to contrast two opposite investment possibilities until the answer becomes clear in my mind (10) | .13 | -.18 | .21** | -.06 | -.19 |
| 19. I like to consider unusual solutions in order to think more creatively about financial issues (16) | .14 | -.40 | .28** | -.24 | .12 |
| 20. I prefer to get a financial professional's help when I have trouble deciding what to do (11 ^b) | -.18 | -.13 | .26** | .01 | .06 |
| 21. I have a financial plan with strategies in case of long life, disability, or premature death (12) | .11 | -.15 | .24** | -.22 | .01 |

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| FDMDS1 Items with (Item Number) ^{a,b} | Analyst | Realist | Synthesist | Pragmatist | Idealist |
|--|---------|---------|------------|------------|----------|
| 22. I give all of my money to someone else to manage (27 ^b) | -.16 | -.10 | .21* | -.04 | .13 |
| 23. I have definite financial goals for ten years from now (4 ^b) | .04 | -.10 | .13 | -.11 | .02 |
| REALIST | | | | | |
| 24. Once I have made a decision about finances, I immediately take action (30) | -.04 | .20* | -.25 | .19* | -.11 |
| 25. I avoid long-term financial planning (5) | -.13 | .19* | -.13 | .13 | -.01 |
| 26. I can see the overall financial picture, but do not make detailed written plans (9) | -.07 | .19* | -.09 | .18 | -.21 |
| 27. I make spending plans, but I have trouble disciplining myself to carry them out (40) | -.09 | .16 | -.24 | .15 | .03 |
| 28. I save money, but not a fixed percentage on a regular schedule (46) | -.01 | .15 | -.25 | .08 | .08 |
| PRAGMATIST | | | | | |
| 29. When it comes to financial decisions, I do what my intuition suggests is best (29) | -.29 | .04 | .01 | .36** | .02 |
| 30. I would rather talk to a friend than read a financial report to help me decide about an investment (17) | -.38 | .14 | -.14 | .29** | .18 |
| 31. I dislike keeping records of spending so much that it doesn't get done unless someone else does it (14) | -.09 | .01 | -.08 | .21* | -.01 |
| 32. If an unexpected financial opportunity arises, I am likely to seize it rather than consider a master plan (31) | -.12 | .05 | -.13 | .20* | .01 |
| 33. I prefer to take advantage of immediate opportunities, rather than make an overall savings plan (13) | -.11 | -.08 | .00 | .14 | .03 |
| 34. I regularly think about how to reposition assets to fit the economic conditions (32) | .13 | -.08 | .12 | -.21 | -.01 |

Financial Decision Styles

| FDMDS1 Items with (Item Number) ^{a,b} | Analyst | Realist | Synthesist | Pragmatist | Idealist |
|---|---------|---------|------------|------------|----------|
| 35. I have at least three months' living expenses in an emergency savings fund (35) | .14 | -.03 | .06 | -.22 | .01 |
| 36. I know the financial outcomes I want, but prefer to have someone else carry out the strategies (24) | -.13 | .00 | .08 | .09 | -.03 |
| ITEMS CONSIDERED FOR FUTURE ELIMINATION^{c,d,e,f} | | | | | |
| 37. I have a general idea about my savings goals (1) ^{c,e} | .06 | .05 | -.11 | -.04 | .03 |
| 38. I usually have written savings goals with time deadlines for accomplishment (3) ^{c,e} | .17 | -.30 | .15 | -.24 | .14 |
| 39. When it seems difficult to reach a goal, I make a list of all resources in order to think of a new way to do it (15) ^{c,e} | .10 | -.06 | .08 | .17 | -.05 |
| 40. When analyzing financial strategies, my only concern is: Will it work? (21) ^{c,e} | .07 | .08 | .23 | .13 | -.05 |
| 41. I use credit cards without knowing exactly how much money I owe until the bill arrives (22) ^{c,e,d} | .02 | -.05 | -.01 | .07 | -.01 |
| 42. I prefer someone else in the family to make decisions about money use (28) ^{c,e,d} | -.01 | -.06 | -.04 | .10 | .02 |
| 43. I make certain that monthly spending is consistent with my important values and goals (36) ^{c,e} | .13 | -.22 | .15 | -.20 | .11 |
| 44. A small decrease in my income or an unusual expense would seriously affect my financial stability (37) ^{c,e} | .04 | .13 | -.12 | .07 | -.13 |
| 45. I begin making financial plans, but have trouble deciding what to do (41) ^{c,e} | -.26 | .09 | .00 | .12 | .09 |
| 46. I often borrow money to pay monthly bills (44) | .05 | .12 | -.03 | .09 | -.23 |
| 47. I plan for vacations several years ahead but have not yet planned for retirement (45) ^{c,e} | -.23 | .05 | .13 | .09 | -.05 |

| FDMDS1 Items with (Item Number) ^{a,b} | Analyst | Realist | Synthesist | Pragmatist | Idealist |
|--|---------|---------|------------|------------|----------|
| 48. I write checks but don't record them, so I don't know the daily account balance (48) ^{c,d,e} | .09 | .11 | -.09 | -.06 | -.06 |
| 49. I assume there is enough money to buy what I want, but I don't really know the amount I currently have (49) ^{c,d,e} | -.11 | .10 | -.01 | -.09 | .11 |
| 50. I put my financial ideas into practice quickly without worrying about their absolute correctness (50) ^{c,d,e,f} | -.01 | .05 | -.05 | .08 | -.06 |

* p < .05, positive correlations only
 ** p < .01, positive correlations only
^a n=80
^b indicates the item was intended to represent a different construct than the correlation indicates
^c items with lack of discriminant validity on correlations
^d items with lack of variance
^e items with poor face validity
^f items with low correlations with all thinking styles

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