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**Evaluation of Consumer-Related Scales: A
Structured Schemata Approach**

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EVALUATION OF CONSUMER-RELATED SCALES:
A STRUCTURED SCHEMATA APPROACH

ABSTRACT

Constructs related to consumer behavior collectively comprise one of the most frequently studied areas of marketing endeavor. Moreover, within the domain of multi-item scale construction and application, consumer-related constructs have been assessed through the use of multi-item scales more frequently than any other area of marketing research. In order to assess the current state of scale development for each construct area in consumer behavior, a set of mutually exclusive and collectively exhaustive categories must exist. Yet a comprehensive set of such categories has not been proposed. The current study presents an initial systematic classification for consumer-related constructs, groups domains of scales into each category, assesses the psychometric properties of grouped scales, and proposes directions for future scales research.

EVALUATION OF CONSUMER-RELATED SCALES:
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The decade of the 1980s was a time of intensive development and use of psychometric scales in marketing. In marketing literature published between 1980 and 1990, consumer-related constructs were assessed through the use of multi-item scales more frequently than any other area of marketing research (Hensel and Bruner 1992). As integral as scales have become to contemporary consumer research, it is surprising that so little is known about them. There has been no analysis of consumer-related scales, either as a group or by construct area, to determine such things as the adequacy of scales in various construct area and the degree to which our measures are improving over time.

One factor which has prevented comprehensive analysis of consumer-related scales is the absence of a well-defined and generally accepted group of mutually exclusive and collectively exhaustive consumer-related constructs. Short of that, an extensive inventory of marketing scales has recently been compiled, including an identified subset of consumer-related scales (Bruner and Hensel 1992). However, until more manageable groups of constructs are identified, such a listing will be of limited use in critically analyzing the field of consumer behavior to determine areas of research concentration and, conversely, of research neglect.

The purpose of this study is to, first, develop a systematic classification of consumer-related constructs, and then to group a domain of multi-item scales into each construct category in order to assess certain characteristics of each group. The outcome of the psychometric assessment should provide a clearer picture than previously available of the extent to which various topics in consumer behavior have been studied vis-a-vis multi-item scales, the variety of measures which have been developed for each construct, and the reliability of those measures. This analysis facilitates the final purpose of this study, which is to identify and propose appropriate directions for future scale development in consumer behavior.

SCALE DEVELOPMENT IN CONSUMER BEHAVIOR

The lack of development of scaled measures specifically designed for use in marketing research has been lamented by various marketing academicians for over twenty years (e.g., Kassarjian 1971; Malhotra 1988; Peter 1981). While noting that construction and application of marketing-specific scales increased somewhat in the 1980s, a review of the "state of the

art" in marketing research strongly advocated the continued development of measurement scales specifically designed for marketing (Malhotra 1988). Moreover, while there is a sense that progress has been made in terms of scale development and usage, there is little comprehensive knowledge about how far the field has progressed in the nature and quantity of that usage.

In concert with the call for development of more marketing-specific scales is recognition of the need for improvement in measurement techniques. Only in the last twenty years have marketing researchers begun to routinely ascertain the reliability and validity of the measures they use (Heeler and Ray 1972). Evidence of a similar trend has also been provided specifically within the domain of consumer behavior (Jacoby 1976). An appeal for attention to areas of particular measurement improvement include the need to assess reliability (Churchill 1979; Peter 1979), unidimensionality (Gerbing and Anderson 1988), construct validity (Churchill 1979; Peter 1981), and validation of scale generalizability (Peter and Churchill 1986; Rentz 1988).

Given these twin challenges, to produce high-quality yet marketing-specific measurement tools, the appropriate point of inception is to conduct a rudimentary analysis of the current state of measurement tools within the consumer behavior domain. Identification of particular areas in need of future developmental attention must be preceded by an inventory and assessment of what exists. When the gaps are identified then adaptation of scales from other disciplines can occur or measures can be constructed by consumer researchers themselves.

However, no inventory of consumer-related scales was available in the 1980s. The recent publication of two handbooks concerned with scales used in marketing changes that (Bearden, Netemeyer and Mobley 1993; Bruner and Hensel 1992). An initial grouping and assessment of scales employed in consumer-related research may now be undertaken. Such an analysis could provide useful information, particularly when applied in a macro perspective to compare consumer behavior to other domains of marketing inquiry (e.g., advertising, sales, channels). Considering the vast scope of constructs embodied within consumer-behavior, however, a micro-analysis of the constituent construct areas would be much more fruitful (e.g., personality, attitudes, motivation). By determining the number of scales that have been used in consumer research, the number and variety of alternative multi-item measures available for each construct area, the reliability of these measures, as well as other important measurement characteristics, identification of an appropriate research agenda is possible.

CONSTRUCT DEVELOPMENT IN MARKETING

A systematic analysis of construct areas within the field of consumer behavior requires the availability of a set of mutually exclusive, collectively exhaustive construct groups to which the various multi-item scales may be assigned. As previously noted, such a set has not yet been proposed. Unlike the field of psychology, there has been no systematic organization of marketing or consumer behavior constructs such as that for psychological constructs as found in the Thesaurus of Psychological Index Terms (Sixth Edition 1993). Indeed, marketing researchers admit that the constructs we study take on meanings which "differ across theories and paradigms" (Peter 1992, p.75) and that there has been difficulty in arriving at a "consensus about the meaning of key terms and concepts" (Zinkhan and Hirscheim 1992, p. 84).

A case in point which illustrates this lack of consensus is the developmental process which preceded publication of the American Marketing Association's Dictionary of Marketing Terms (1988). From the initial attempt to construct a glossary of marketing terms in 1931, evolution of a text of marketing definitions was more than a collaborative effort among two or three individuals; it was a process which required a substantial "Committee on Definitions". The latest product of this endeavor was initiated in 1980 with the work of an Ad Hoc Task Force consisting of eleven Marketing academicians. This task force failed to produce a glossary of marketing terms primarily due to lack of consensus among the members.

The Dictionary of Marketing Terms was finally published, however, in 1988. Interestingly, the definitions embodied in this book were not ultimately the result of a collaborative effort of a committee, but rather represented the independent contributions of twenty-three Marketing academicians. Of the hundreds of terms defined in the text, only the definitions of two terms (marketing and marketing research) were universally agreed upon, and this occurred only because the definitions were mandated by the Board of Directors of the American Marketing Association. All other terms were independently defined by scholars considered expert in particular domains of marketing theory. In some cases it was necessary to include competing definitions from several specialists. To make any potential bias clear to the user, the author of each definition was identified.

Clearly, there is considerable variation in construct meanings across the field. Future research decisions regarding development of appropriate scales and related methodologies for investigating consumer-related constructs should depend, to a great extent, on a careful analysis of those that are currently

3

available. It is incumbent, therefore, upon consumer researchers to develop a set of mutually exclusive, collectively exhaustive construct categories to facilitate such a systematic analysis. The following methods section describes an initial attempt to develop a group of such categories.

METHOD

Development of a Schemata

The first task was to identify a collectively exhaustive set of construct categories for consumer behavior. In order to identify potential construct areas, several current consumer behavior textbooks were systematically examined, including those authored by Engle, Blackwell and Miniard (1993); Hawkins, Best and Coney (1992); Mullen and Johnson (1990); Peter and Olson (1993); and Schiffman and Kanuk (1991). Given the lack of consensus regarding definitions in the field of marketing, it would not be surprising to discover that similar confusion exists within the domain of consumer behavior. However, while there is disagreement regarding the hierarchical structuring of specific constructs, there appears to be a relatively high degree of agreement regarding the general body of constructs which collectively comprise the area of consumer behavior.

Lack of consensus regarding the definitions of specific construct areas provided a much greater challenge, particularly in meeting the criterion that the construct categories be mutually exclusive. The initial definition of each construct was derived by examining the text and glossaries of the aforementioned textbooks, as well as the AMA's Dictionary of Marketing Terms. The constructs along with their associated definitions were then independently evaluated by four judges trained at the doctoral level in the field.

After independent evaluations had been completed, it was determined that a number of definitions (and, hence, constructs) could not be classified as being mutually exclusive. Thus, protracted discussions ensued which resulted in tiering of some construct areas, as well as development of definitions which met the criterion of being mutually exclusive while remaining consistent with definitions offered in the AMA's Dictionary of Marketing Terms and in the consumer behavior textbooks previously noted. The constructs and their definitions are presented in Exhibit 1.

[INSERT EXHIBIT 1 ABOUT HERE]

Database Development

The database for this study was developed by identifying the uses of consumer-oriented multi-item scales reported in one or more marketing journals (i.e., JMR, JM, JCR, JAMS, JA, and JAR) during the decade of the 1980s.[1] While these do not represent all possible outlets in which consumer-oriented scales were published during the stated period of time, they are clearly among the most well known and respected in the field of marketing (Browne and Becker 1985; Fry, Walters and Scheuermann 1985; Luke and Doke 1987). Moreover, it is assumed that if a scale was of considerable value to consumer behavior researchers then it would have been used and reported in these journals at least once during the ten year period reviewed.[2]

As previously noted, earlier reviews of the consumer behavior area have mainly examined aspects of scale usage in the 1960s and 1970s. Thus, it seemed reasonable to limit the domain in the present study to the most recent decade. Moreover, investigation of consumer-related research conducted between 1980 and 1990 is particularly apropos since this represents the current state of the art in measurement tools for consumer behavior as well as providing a review of the decade immediately following Jacoby's (1978) "state of the art review" of consumer behavior. Hence, this study does not presume to examine all historical uses of consumer-oriented scales; rather, it endeavors to represent the depth and breadth of measures reported during the 1980s.

In order to be included in the database, scales had to meet certain criteria. First, measures had to have two or more items. Although single item scales may be justified in some circumstances (e.g., Wells and Tigert 1971), the clear emphasis in the literature has been on the use of multi-item measures (e.g., Churchill 1979; Jacoby 1978). Secondly, a minimum amount of information had to be known about each scale, particularly with regard to reliability and item content. As inadequate as it may be, reliability (internal consistency) is the most widely reported index of scale quality. A knowledge of a scale's item contents was necessary to make a more informed judgment of the construct a scale measured than could be made based solely on what authors said a scale measured.

Coding Procedures

As previously noted, development of the construct schemata resulted in some degree of tiering of the construct areas. In order to obtain the richest data possible, specific tiers of constructs were explicitly incorporated into the coding categories derived from the construct schemata. The full set of scale categories is presented in Exhibit 2. These scale categories,

along with definitions for each category, were used for the judging procedure. Five judges trained at the doctoral level in consumer behavior independently coded each of the scales. This procedure resulted in an inter-judge reliability score of over 89%[3].

[INSERT EXHIBIT 2 ABOUT HERE]

Judgments regarding the vast majority of the scales resulted in four- if not five-way inter-judge agreement. Scales which had agreement of fewer than four judges were reviewed and the code to be assigned was determined through discussion by the two principle investigators. Scales which produced the greatest levels of inter-judge disagreement were those containing items spanning more that one construct area. For scales which contained more than two items representing multiple constructs, a majority rule was used to code the scale. While this rule could not be applied to scales which consisted of only two items, fewer than 2% of the scales fell into this latter category. For the very few multi-construct scales composed of only two items, the author's original purpose and the methodological context in which the scale was administered were critically considered to make the final assignment to a construct category.

At this point, since there was a high degree of reliability in the coded data, the coding process could have been terminated. However, two further coding steps were undertaken. First, scales composing each category were individually examined as a group to determine the degree of communality that existed. This was analogous to examining variables in a factor analysis with a sensitivity towards low loadings and split loadings. This analysis led to a few refinements in code assignments, predominantly involving those multi-construct scales previously noted.

Finally, a coding check was performed by three new judges, all of whom were trained at the doctoral level in consumer behavior. These judges were provided with only the eight major scale categories, along with their associated definitions. Coding of all consumer-oriented scales except those which displayed a high level of multi-dimensionality resulted in an inter-judge reliability of over 94%. Thus, even though there was a considerable amount of subjectivity in identifying and defining construct categories, as well as in assigning scales to the respective categories, the process was approached as objectively as possible, using multiple steps, checks and judges.

FINDINGS

As described earlier, a census of scales from the defined domain was conducted. Hence, the data set used in this study essentially represents the domain population. Thus, "significance testing" could be considered to be more of a conceptual than statistical issue. However, since this domain could be used to represent the larger population of scales reported in numerous scholarly outlets not examined here, the statistical significance associated with the tests performed is reported.

Macro-Analysis of Consumer-Oriented Scales
A total of 358 scales meeting the stated criteria were identified and analyzed. Before analyzing groups of scales by construct categories, several preliminary analyses were performed on the entire set of data in order to obtain a global perspective regarding the progressive development of consumer-oriented scales over the decade of the 1980s. The results of these analyses are presented in Table 1. Several interesting trends which are evidenced in the data are discussed below.

[INSERT TABLE 1 ABOUT HERE]

Originality and Total Scale Use. As previously noted, an area of primary concern to marketing academicians is the need for development of scaled measures specifically designed for use in marketing research. Analysis of the originality of consumer-oriented scales indicates that, on average across the decade of the 1980s, approximately 86% of the scales whose origin could be established represented original attempts to measure consumer-related constructs. In addition, use of original scales increased significantly over the 1980s[4]. While average originality per year of scales was 80% for the first five years (1980 - 1984), scale originality reached an average of 91% per year for the latter half of the decade. Based on both Chi-Square Goodness of Fit analysis and a test of proportions presented in Table 2, use of original scales significantly outpaced use of existing scales from 1985 through 1989 (Chi-Square = 4.544, p = 0.03; Z = 2.986, p = .001).
[INSERT TABLE 2 ABOUT HERE]

In addition, overall use of multi-item scales more than doubled in the second half of the 1980's. While 110 scales were employed in studies during the five year period from 1980 through 1984, more than double that number (248) were incorporated into research activities during the five year period of 1985 - 1989. While this clearly represents a significant increase, this

7

conclusion is supported by the test of proportions presented in Table 2 (Z = -7.904; p = .000).

   Frequency of Use. While academicians should be applauded for their efforts in developing scales specifically designed to measure consumer-oriented constructs, a somewhat less desirable trend is simultaneously emerging. Of all reported scale uses during the 1980s, 79% of the scales were used in only one study, an additional 9% (33 scales) were used only twice, and only nine scales (3%) were employed in three different studies. Moreover, the Analysis of Variance presented in Table 3 indicates a significant relationship between scale reliability and frequency of scale use (F = 9.28; p =.00). Evidently, scales which are more frequently employed are continually being refined and improved, with a concurrent improvement in their reliability.

[INSERT TABLE 3 ABOUT HERE]

   While continued development of construct-specific scales is to be encouraged, refinement of previously developed scales is also highly desirable. Given the handful of constructs which comprise the area of consumer behavior it is reasonable to assume that some overlap in measurement may exist. Refinement of existing scales offers the opportunity to synergistically build on the work of previous researchers in order to improve the reliability and validity of marketing-specific scales. Hopefully investigators will seize the opportunity to further develop existing scales rather than continually "reinventing the wheel".

   Reliability. Another major area of concern regarding scale development previously identified is the degree to which multi-item scales employed in research are reliable and valid. While few of articles/authors reported statistics regarding the validity of their scales, determination of the reliability of the multi-item scale was a necessary prerequisite for inclusion in the database. Again, a very positive trend is evident in the data presented in Table 1. While the mean reliability of scales used between 1980 and 1984 was 0.75, mean reliability for scales employed during the second half of the decade increased to 0.80. This represents a significant improvement in our measurement techniques over a ten-year period of time as supported by the Analysis of Variance presented in Table 3 (F = 6.76; p =.01). Nevertheless, even greater strides may be evidenced in scale improvement if existing scales were judiciously modified and adapted for use in future studies whenever possible, rather than continually creating new scales to measure the same constructs.

Micro-Analysis By Scale Category

8

In addition to these general trends, a number of "micro" analyses of the individual construct categories were performed. These included originality and reliability of scales within individual categories, and an evaluation of research concentration. A summary of these statistics is presented in Table 4. Each of these characteristics is discussed below; a number of areas which need particular research attention are identified throughout these discussions.

[INSERT TABLE 4 ABOUT HERE]

Originality. Originality of scales grouped by construct area and crosstabulated by year of publication (1980-84 versus 1985-89) are presented in Table 5. While the small sample size per cell (including a number of zeros) prevents further statistical analysis, the data clearly demonstrate the disparity in use of original scales between the two halves of the 1980s. This variability among construct categories is evidenced in the GLM analysis presented in Table 6 (F = 5.84; p = .02). Hence, the general trend toward increased use of original scales identified earlier does not hold true for all construct categories. This variability suggests that future decisions regarding use of existing scales versus development of new scales is category dependent.

[INSERT TABLE 5 ABOUT HERE]

While marketing scholars generally agree that development of marketing-specific scales is, in general, highly desirable, one must consider the construct under consideration before choosing scale development over use of an existing scale from another discipline. For example, our schemata subdivides Personality Traits into General and Consumption-Specific Traits. While it may be not only be desirable but necessary to develop scale items which evaluate consumption-specific traits, highly developed psychological scales for measuring general personality traits are readily available (e.g., Robinson and Shaver 1975; Buros 1992). An additional trend which is evident in the data presented in Table 4 is an apparent relationship between the mean reliability of the scales in a given category and the degree to which those scales are original. In general, as percent originality increases, the overall reliability of the scales (as measured by Cronbach's Alpha) tends to decrease. This relationship is supported by the results of the GLM analysis presented in Table 6 (F = 1.89; p = .03). This suggests that scales "borrowed" from other disciplines may be more reliable, quite possibly because

9

they have been improved through repeated administration. We echo the comments Chun et. al (1973) made to fellow psychologists twenty years ago that the high level of obsolescence indicates a sense of futility and wasted effort in a field's research efforts.

[INSERT TABLE 6 ABOUT HERE]

Reliability. The minimum, maximum and mean reliabilities for each construct category are presented in Table 4. While a significant degree of variation in mean reliabilities exists, as evidenced by the ANOVA results presented at the bottom of Table 3 ($F = 10.15$; $p = .00$), the mean reliabilities for the majority of categories suggest reasonable levels of internal consistency. Only three categories have mean reliabilities which fall below acceptable levels (i.e., Emotions, the General/Cognitions category of Attitudes and Lifestyle). However, examination of the range of reliabilities for each scale category reveals a more distressing picture. Minimum reported reliabilities were as low as 0.28 for an astounding 31% of the categories, with twelve of the sixteen categories (75%) containing minimum reliabilities below 0.50.

Many of these extremely low reliability scores could be a result of the same problem encountered during the coding process, namely, that multiple constructs are being measured in a number of the scales. Moreover, comparison of the range of reported reliabilities with the degree of scale originality for each category again demonstrates the relationship previously noted. In general, the lower the minimum reliability reported, the greater the percent of original scales contained within the category. Taken together, one could surmise that some of the original (i.e., newly developed) scales have not been sufficiently tested and refined to insure scale unidimensionality.

Concentration of Research Effort. As previously noted, there was a dramatic increase in total scale usage during the latter half of the 1980s. On the micro level, substantial increase in scale usage is evident for some categories as well. However, consistent with previous reviews of consumer-oriented research, scholarly activity has concentrated on only a few construct areas. Investigation of Attitudes has received a disproportionately large share of attention, (43% of all reported uses of scales), with investigation of Personality Traits a distant second (13%). Little research employing multi-item scales has focused on Values (3%), Emotions (2%) or Perceptual Processes (1%).

In evaluating these findings it must be remembered that only investigations involving multi-item scales are included in this database. Hence, some constructs may be more suited to exploration vis-a-vis multi-item scales than others. For example,

while Likert-type scales may be particularly apropos for measuring consumer attitudes, it is much more difficult to adapt such scales for investigation of perceptual processes which have historically been measured via physiological techniques (e.g., galvanic skin response and pupil tracking equipment).

SUMMARY AND CONCLUSIONS

The body of evidence assessed here supports the observation made by others over the last twenty years that there has been sporadic thrusts of measurement attention into some construct areas but little continuing effort across the board (Heeler and Ray 1972; Peter 1981). Based on the current research, it is evident that for some individual constructs there are numerous alternative measures available (e.g., Attitude Toward the Brand, Satisfaction, Involvement), while for some entire construct categories very few scales have been developed and used in published consumer research (e.g., Emotions, Values, Perceptual Processes). In spite of the existence of such gaps, many more scales are available now than when the limited choice of "home-grown" measures was lamented by Kassarjian (1971, p. 415) and Peter (1981, p. 138).

Furthermore, we encourage the development of higher and lower levels of the construct aggregation. With sufficient refinement, this could ultimately lead to the production of a hierarchical schemata of consumer-related constructs (cf. the embryonic efforts of Helgeson et. al 1984.) Such a schemata could then be used to develop a thesaurus such as those available in our sister disciplines of psychology (Thesaurus of Psychological Index Terms 1991) and sociology (Thesaurus of Sociological Indexing Terms 1989). A marketing thesaurus could provide the following benefits to a field: it should clarify the meaning and distinction of a field's terminology; it would help determine if "new trends" are really no more than old constructs with new names; it would facilitate the identification of gaps in the areas of research; and, the structured vocabulary could aid in search and retrieval processes.

In developing the database for this study, we noted that too many times reviews occur with little critical analysis of how a construct was measured across studies, and whether or not such studies were actually measuring the same thing. For example, there was a recent meta-analysis of studies involving Attitude Toward the Ad (Brown and Stayman 1992). While a number of the scales they reviewed have been purportedly used to measure the Attitude-Toward-the Ad construct, only a subset of those scales were actually operationalized using the same or very similar sets

of items. While further analysis is clearly necessary, it appears to us that different constructs were actually being measured, yet were collectively treated as the same construct. Hence, more care should be taken in future research when synthesizing several studies of the "same" construct. As Jacoby (1978, p.91) warned, inconsistent findings could result from using widely different measures as well as from tapping into different constructs altogether.

Hence, researchers interested in future scale development must seek a fine balance between continued development of existing scales (in order to avoid "reinventing the wheel"), while insuring that such efforts result in unidimensional scales. When possible, refinement of existing scales represents a parsimonious use of the researcher's time, and should result in improved unidimensionality, and, hence, improved reliability of the measures employed. Conversely, development of new scales for inadequately measured constructs will extend our knowledge and understanding of consumer activities. Whichever endeavor future researchers choose to engage in, we would urge them to measure and report a much wider array of statistical information regarding the scales being developed and employed, including construct, discriminant, convergent and nomological validity.

APPENDIX 1
INSTRUCTIONS TO JUDGES

The purpose of the current project is to investigate the psychometric properties of groups of scales used in consumer behavior research. In order to accomplish this, all the behavioral scales must first be classified into groups. We are asking you, as a judge, to undertake this classification task. Judges should evaluate each scale with respect to the process described below, then indicate to which group the scale belongs.

Carefully read the scale name, the scale description, the scale origin information and the individual scale items. Then decide to which of the following categories the scale belongs:

1. **PERSONALITY TRAITS**: Relatively invariant inner psychological characteristics which determine how an individual will, in general, respond to his environment.

   A. **General Personality** traits include those which broadly affect behavior, (e.g., aggressiveness).

   B. **Consumer Behavior Specific** traits which more specifically affect consumption-related activities, (e.g., aggressiveness towards salespeople).

2. **VALUES**: Qualities or principles considered to be morally or intrinsically valuable, generally influenced by one's culture or ethnic affiliation.

3. **EMOTIONS**: Strong, relatively uncontrolled feelings which may be transient and/or situation specific. (Moods are emotional states; mood scales should be included under this category.)

4. **ATTITUDES**

   (A) **Cognitions**: Information in memory; objective knowledge of evaluative criteria.

      i. General (e.g., general product category knowledge)
      ii. Specific (e.g., specific brand information)

(B) **Affect**: Subjective beliefs or opinions about or feelings toward an object; outcome of subjective evaluation of an object (i.e., judgement).

      i.   <u>General</u> (e.g., I pay too much for the products I buy)
     ii. <u>Specific</u> (e.g., Brand A is too expensive)

5. **<u>PERCEPTUAL PROCESSES</u>**: The process by which an individual selects, organizes and interprets stimuli into a meaningful and coherent picture of the world. This process includes such aspects as awareness, attention, and stimulus comprehension.

6. **<u>BEHAVIOR AND BEHAVIORAL INTENTIONS</u>**

(A) **<u>Motivation</u>**: The driving force within individuals that propels them into purposeful, goal-oriented behavior.

(B) **<u>Lifestyle</u>**: The manner in which people conduct their lives, particularly, the structuring of one's time to consistently include certain types or sets of activities, which evolves from the individual's interests (involvement), values and intrinsic psychological characteristics.

(C) **<u>Product-Related Behavioral Intentions</u>**: How the individual plans to act with respect to a product or brand; the specific actions an individual intends to take regarding a product or brand.

(D) **<u>Involvement</u>**: The degree of interest or personal relevance a product, brand, object or behavior has for a consumer (as characterized by the individual's cognitions rather than manifest behavior).

7. **<u>ROLES</u>**: A pattern of behavior expected of an individual in a specific social or familial position.

8. **<u>SHOPPING FACTORS</u>**: All those factors which are particular to the completion of a specific consumption-related task, such as searching for information, comparison shopping, as well as various aspects of the task environment, such as the convenience of a particular store.

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ENDNOTES

1. Only non-advertising scales which specifically measured consumer-related constructs, such as Attitude Toward the Brand, were included in the database. Scales which specifically measured advertising constructs (approximately 100) were omitted. We felt this was appropriate because inclusion of the very large number of non-consumer scales which measured advertising constructs could bias the results of our analyses and, hence, are worthy of separate analysis.

2. The data analyzed in this study is similar to that what can be found in the consumer scales section of the recent AMA publication Marketing Scales Handbook (Bruner and Hensel 1992). However, the database in the current study was constructed separately and does not match the books contents in all respects.

3. Inter-coder reliabilities were calculated using the method recommended by Perreault and Leigh (1990).

4. The origin of a relatively large number of scales could not be identified (i.e., 113 of the 358 scales). Given the fact that the authors who employed these scales did not cite a specific source, it is reasonable to assume that a large majority of them were original in nature. Prudence requires that these results be viewed cautiously, and thus unidentified scales have been omitted from the calculation in Table 1.

EXHIBIT 1

SCHEMATA OF CONSUMER BEHAVIOR CONSTRUCTS

I.   **PERSONALITY TRAITS**

Relatively invariant inner psychological characteristics which determine how an individual will, in general, respond to his or her environment. Personality traits may be general (i.e., broadly affecting behavior) or consumption- specific (i.e., affecting consumption-related activities).

II. **VALUES**

Qualities or principles considered to be morally or intrinsically valuable, generally influenced by one's culture or ethnic affiliation.

III. **EMOTIONS**

Strong, relatively uncontrolled feelings which are transient and/or situation specific. (Moods which are a type of emotional state, are included within the domain of this construct.)

IV. **ATTITUDES**

Cognitions (thoughts) and affect (feelings) one holds toward an object. These include information in memory; objective knowledge of evaluative criteria; subjective beliefs and/or opinions about or feelings toward an object; and judgments (outcome of subjective evaluation of an object). Cognitions and affect may be general (global) or specific (e.g., brand or product related) in nature.

V. **PERCEPTUAL PROCESSES**

Processes by which an individual selects, organizes and interprets stimuli into a meaningful and coherent picture of the world. These processes include such aspects as awareness, attention, and stimulus comprehension.

EXHIBIT 1 (Cont'd)

SCHEMATA OF CONSUMER BEHAVIOR CONSTRUCTS

VI. **BEHAVIOR AND INTENTIONS**

Any of a number of consumption-related activities, including:

A. **MOTIVATION**

The driving force within individuals that propels them into purposeful, goal-oriented behavior. This driving force may be a result of social motives (i.e., the influence of others, including compliance, imitation and conformity) or consumption motives (i.e., product-oriented factors related to product class, brands and attributes).

B. **LIFESTYLE**

The manner in which people conduct their lives; particularly, the structuring of one's time to consistently include certain types or sets of activities, which evolves from the individual's interests, values and intrinsic psychological characteristics.

C. **PRODUCT-RELATED BEHAVIORAL INTENTIONS**

How the individual plans to act with respect to a product or brand; the specific actions an individual intends to take regarding a product or brand.

D. **INVOLVEMENT**

Enduring interest in or personal relevance of a product, brand, object or behavior to the consumer (as characterized by the individual's cognitions rather than manifest behavior).

VII. **ROLES**

A pattern of behavior expected of an individual in a specific social or familial position.

VIII. **SHOPPING FACTORS**

All those factors which are particular to the completion of a specific consumption-related task, such as searching for information and comparison shopping, as well as various aspects of the task environment, such as the convenience of a particular store.

EXHIBIT 2

SCALE CATEGORIES

1. **PERSONALITY TRAITS**

   A. **General**
   B. **Consumption-Specific**

2. **VALUES**

3. **EMOTIONS**

4. **ATTITUDES**

   A. **Specific/Affect**
   B. **Specific/Cognitions**
   C. **General/Affect**
   D. **General/Cognitions**

5. **PERCEPTUAL PROCESSES**

6. **BEHAVIOR AND BEHAVIORAL INTENTIONS**
   A. **MOTIVATION**

      1. **Social Motives**
      2. **Consumption Motives**

   B. **LIFESTYLE**

   C. **PRODUCT-RELATED BEHAVIORAL INTENTIONS**

   D. **INVOLVEMENT**

7. **ROLES**

8. **SHOPPING FACTORS**

TABLE 1

SUMMARY OF MACRO ANALYSES OF CONSUMER-RELATED SCALES

==

FREQUENCY, RELIABILITY AND ORIGINALITY OF SCALES BY YEAR

Year Published	Frequency	Percent	Mean Reliability	Percent Original*
1980	11	3%	.83	64%
1981	17	4%	.67	73%
1982	23	6%	.74	100%
1983	36	10%	.71	94%
1984	23	6%	.75	71%
1985	72	20%	.73	93%
1986	23	6%	.84	94%
1987	31	9%	.81	100%
1988	51	14%	.76	100%
1989	71	20%	.79	69%

* Percentage calculated based on scales of known origin

FIVE-YEAR SUMMARY STATISTICS

	1980-1984	1985-1989
Average Frequency Per Year	22	54
Average Reliability	0.75	0.80
Average Percent Originality	80%	91%

NUMBER OF TIMES AN INDIVIDUAL SCALE WAS USED

Number Times Used	Frequency	Percent
1	281	79%
2	33	9%
3	9	3%
4	5	1%
>5	30	8%

RELIABILITY OF SCALES

23

Mean Reliability	Minimum	Maximum	Std. Dev.
0.76	0.28	0.98	0.14

TABLE 2

ORIGINALITY AND TOTAL USE OF SCALES ACROSS THE 1980S

	Original Scales	Existing Scales	Total Scales
1980-1984	59	51	110
1985-1989	145	103	248
TOTAL	204	154	358
% CHANGE	246%	202%	225%

Goodness of Fit Test and Test of Proportions for Increase in Original Scale Usage

	Frequencies		Proportions	
	Observed	Expected	Observed	Expected
Original	86	73	.62	.53
Existing	52	65	.38	.47

Chi-Square Factor = 4.544   Prob. = .03

Z = 2.986   p = .001

Test of Proportions for Increase in Total Scale Usage

	Observed Frequencies	Observed Proportions
1980-1984	110	.3073
1985-1989	248	.6927
TOTAL	358	

Z = -7.904   p = .000

25

TABLE 3

ANALYSES OF VARIANCE FOR RELIABILITY

==

MODEL: RELIABILITY X	F VALUE	PROBABILITY
Year (1980-84, 1985-89)	6.76	.01
Frequency of Usage	9.28	.00
Construct Category	10.15	.00

TABLE 4

**COMPARISON OF FREQUENCY, ORIGINALITY AND RELIABILITY
OF SCALE CATEGORIES**

===

	Frequency By Year Pub 80-84	85-89	Total (%)	Originality (Percent*)	Reliability (Mean/Range)
PERSONALITY TRAITS	15	31	46 (13%)	63%	.71 (.28-.92)
General	8	21	29 (8%)	56%	.72 (.57-.92)
Consump. Specific	7	10	17 (5%)	77%	.71 (.28-.89)
VALUES	2	7	9 (3%)	100%	.60 (.42-.96)
EMOTIONS	4	1	5 (2%)	25%	.85 (.72-.89)
ATTITUDES	46	107	153 (43%)	92%	.79 (.28-.98)
Specific/Affect	16	42	58 (16%)	81%	.89 (.70-.98)
Specific/Cognitions	8	40	58 (16%)	95%	.79 (.54-.96)
General/Affect	1	5	6 (2%)	100%	.70 (.28-.83)
General/Cognitions	11	20	1 (9%)	100%	.65 (.28-.94)
PERCEPTUAL PROCESSES	0	4	4 (1%)	33%	.81 (.72-.88)
BEHAVIORAL	36	62	98 (27%)	94%	.74 (.44-.96)
MOTIVATION	9	25	34 (9%)	87%	.74 (.44-.93)
Social Motives	5	14	19 (5%)	73%	.75 (.52-.88)
Consump. Motives	4	11	15 (4%)	100%	.73 (.44-.93)
LIFESTYLE	18	16	34 (9%)	100%	.66 (.40-.95)
BEHAV. INTENTIONS	2	12	14 (4%)	100%	.85 (.73-.96)
INVOLVEMENT	7	9	16 (5%)	100%	.80 (.47-.93)
ROLES	2	21	23 (6%)	100%	.74 (.56-.93)
SHOPPING FACTORS	5	15	20 (5%)	92%	.73 (.53-.85)

• Percentage calculated based on scales of known origin

TABLE 5

CROSSTABULATION OF ORIGINALITY BY YEAR BY CONSTRUCT CATEGORY
==

PERSONALITY

	Orig.	Exist.	
80-84		5	10
85-89	11	20	

General Personality Traits				Consumption Specific		
	Orig.	Exist.			Orig.	Exist.
80-84	1	7		80-84	4	3
85-89	7	14		85-89	4	6

VALUES

	Orig.	Exist.
80-84	2	0
85-89	5	2

EMOTIONS

	Orig.	Exist.
80-84	1	3
85-89	1	0

ATTITUDES

	Orig.	Exist.
80-84	30	12
85-89	79	28

Specific/Affect				Specific/Cognitions		
	Orig.	Exist.			Orig.	Exist.
80-84	11	5		80-84	8	10
85-89	34	8		85-89	24	16

General/Affect				General/Cognitions		
	Orig.	Exist.			Orig.	Exist.
80-84	1	0		80-84	10	2
85-89	5	0		85-89	16	4

TABLE 5 (Cont'd)

CROSSTABULATION OF ORIGINALITY BY YEAR BY CONSTRUCT CATEGORY
===

PERCEPTUAL PROCESSES

	Orig.		Exist.
80-84		0	0
85-89	1	3	

BEHAVIORAL

	Orig.	Exist.	
80-84		16	20
85-89	36	25	

Social Motives

	Orig.	Exist.
80-84	3	2
85-89	5	9

Consump. Motives

	Orig.	Exist.
80-84	4	0
85-89	8	3

Lifestyle

	Orig.	Exist.
80-84	4	14
85-89	7	9

Behavioral Intent.

	Orig.	Exist.
80-84	2	0
85-89	8	4

Involvement

	Orig.	Exist.
80-84	3	4
85-89	8	1

ROLES

	Orig.	Exist.
80-84	2	0
85-89	1	20

29

SHOPPING

	Orig.	Exist.		
80-84	3	2		
85-89			11	4

TABLE 6

GLM ANALYSIS OF ORIGINALITY BY RELIABILITY
FOR MAIN CONSTRUCT CATEGORIES

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Source	F Value	Probability
Model	1.89	.03
GROUP	1.24	.28
ORIGIN	5.84	.02
GROUP X ORIGIN	2.36	.03