LIST VALENCE AND HAIRE'S SHOPPING LIST PROJECTIVE TECHNIQUE

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ABSTRACT

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By

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In 1950 Mason Haire introduced the projective technique in marketing and consumer research. His projective technique (Haire, 1950) consisted of presenting two groups of married women with shopping lists that were identical except for a single "test product" and asking these groups of women for a description of the woman who had bought the groceries. Haire assumed that differences in descriptions of the stimulus woman obtained from the two groups were solely due to the connotative differences in the two test products. However, research by Asch (1946) and Hill (1968) strongly suggests that the valence of the embedding context or list has an effect on impressions formed about a stimulus person.

This study was designed to investigate the effect of differentially valent shopping lists on character ratings of a stimulus woman. Two constant test products with differing desirabilities were placed within differentially valent shopping lists. It was hypothesized that both list valence and test product factors would be significant, and that there would be a significant interaction between the two.

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Three preliminary phases of stimuli development were employed to construct a positive valent, neutral valent, and negative valent food shopping list. A positive valent and negative valent test product were also obtained from these preliminary phases. Valence was operationalized as the desirability of a food product or list of products. The subject sample consisted of 60 married women (20 for each list valence condition). The repeated measures procedure employed was adapted from Robertson and Joselyn (1974). The stimulus woman was rated on eight, seven-point bi-polar adjective scales where each scale was treated as a separate dependent measure. A multivariate analysis of variance with repeated measures was employed in testing the hypotheses.

Support was found for the multivariate hypothesis which predicted a significant interaction between list valence and test product factors. A significant univariate interaction was found for three of eight dependent variables. The implication of this finding for the validity of Haire's (1950) projective technique was discussed. An ancillary finding of neutral valent list instability was consonant with findings in the area of behavioral expectation scale development.

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INTRODUCTION

A marketing research study by Mason Haire (Haire, 1950) has sparked a number of research studies over the years. These studies, through replication and empirical manipulation, have attempted to answer questions concerning the validity of Haire's research technique. The present research study, melding this accumulated research with relevant psychological research, proposes and empirically tests an effective approach for assessing the validity of Haire's research technique.

Haire (1950) examined the problem in marketing research of obtaining the "real" reasons or motives underlying consumer actions and purchase decisions. In Haire's judgment, respondents often are either unwilling or unable to relate their genuine motives or reasons for product usage or non-usage. In his view, direct questioning tends to elicit stereotypic answers or cliches which are seen by the respondent as both socially acceptable and satisfactory to the experimenter.

In a questionnaire concerning attitudes toward Nescafé instant coffee, Haire asked respondents first if they used instant coffee. If they did not use it, Haire asked what they disliked about instant coffee. In response to this question, the majority of respondents answered something to the effect that they disliked the <u>flavor</u> of instant coffee. Haire considered this answer as too simple, and suspected that it was a facade for the real reasons and motives for not using instant coffee. So, to circumvent this facade, Haire utilized a projective test. "Basically, a projective test involves presenting the subject with an ambiguous stimulus - one that does not quite make sense in itself - and asking him to make sense of it. The theory is that in order to make it make sense he will have to add to it - to fill out the picture - and in so doing he projects part of himself into it" (Haire, 1950, p. 650).

The ambiguous stimulus Haire employed was a seven-item shopping list. Two shopping lists were composed which were identical except for one item. On one list Nescafé instant coffee appeared fifth, while on an alternate list 1 lb. Maxwell House coffee (Drip Grind) appeared fifth. The two lists employed by Haire (1950, p. 651) were:

Shopping List I	Shopping List II
Pound and a half of hamburger	Pound and a half of hamburger
2 loaves of Wonder bread	2 loaves of Wonder bread
bunch of carrots	bunch of carrots
1 can Rumford's Baking Powder	1 can Rumford's Baking Powder
Nescafé instant coffee	1 lb. Maxwell House Coffee (Drip Ground)
2 cans Del Monte peaches	2 cans Del Monte peaches
5 lbs. potatoes	5 lbs. potatoes

Fifty subjects responded to each list, unaware that two different shopping lists were being utilized. The instructions subjects received were "Read the shopping list below. Try to project yourself into the situation as far as possible until you can more or less characterize the woman who bought the groceries. Then write a brief description of her person

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personality and character. Wherever possible indicate what factors influenced your judgment" (Haire, 1950, p. 651). Each elicited description was content-analyzed to extract the main characteristics of the stimulus woman, and these main characteristics were summed across descriptions to provide the analysis dimensions as well as the values for each stimulus woman on these analysis dimensions. Haire's findings are presented in Table 1.

Table 1

Main Characteristics Ascribed to Stimulus Woman in Haire's First Experiment

If They Use	Maxwell House Coffee (Drip Grind)	Nescafé Instant Coffee
They are seen as:	Percent	Percent
Lazy	4	48
Poor planner	12	48
Thrifty	16	4
Spendthrift	0	12
Not a good wife	0	16
Good wife	16	4

Generally, the stimulus woman who used Nescafé instant coffee was seen as lazy, a poor planner, a spendthrift, and not a good wife while the stimulus woman who used Maxwell House (Drip Grind) coffee was seen conversely. Haire attributed the negative descriptions of the stimulus woman who used Nescafé to the labor-saving aspect of instant coffee, which carried negative value in the then prevailing U.S. culture. Haire hypothesized that if another shortcut item were added to both lists, both the Maxwell House stimulus woman and Nescafé stimulus woman would be evaluated and described similarly "since the former [Maxwell House stimulus woman] would now have the same guilt that the Nescafé woman originally had, while the Nescafé woman already convicted of evading her duties, would be little further injured" (Haire, 1950, p. 654).

To test this hypothesis, Haire conducted a second experiment which was reported in the same paper (Haire, 1950). Seventy-five subjects were presented with the first list, and an equal number received the second list. An additional sample of forty subjects received lists (20 subjects received each list) identical to the above lists, except for the addition of a fictitious short-cut item, Blueberry Fill Pie Mix, to each list. The results of the Haire's second experiment are presented in Table 2. Haire interpreted the results as supporting his hypothesis and concluded, "The group with an additional prepared food. . .brought the Maxwell House coffee woman down until she is virtually indistinguishable from the Nescafé" (Haire, 1950, p. 654).

An alternate and more cogent explanation of Haire's results can be made. In the second experiment, the embedding context or list in which both Nescafé and Maxwell House

Table 2

Main Characteristics Ascribed to
Stimulus Woman in Haire's Second Experiment

If They Use	No Prepared Food (Maxwell House alone)		Nescafé (alone)		Maxwell House (Plus Pie Mix)		Nescafé (Plus Pie Mix)	
They are seen as:	Number	%	Number	%	Number	%	Number	%
Not Economical	12	17	24	32	6	30	7	35
Lazy	8	11	46	62	5	25	8	40
Poor Personality and Appearance	28	39	39	53	7	35	8	40
N =	72		74		20		20	

appeared was altered. In this altered list the added item, Blueberry Fill Pie Mix, may have become the central list item and most determinant of the evaluations and descriptions of the stimulus woman than either the Nescafé or Maxwell House coffee items. This use of Blueberry Fill Pie Mix as the main determinant of evaluation and description would also explain why the Maxwell House coffee stimulus woman was indistinguishable from the Nescafé stimulus woman in the second experiment. Concerning the addition of another short-cut food item, Haire predicted that "the Nescafé woman already convicted of evading her duties would be little further injured" (Haire, 1950, p. 654). However, it can be seen from the results that the Nescafé stimulus woman was actually partially exculpated on two dimensions of analysis, results unexplained by Haire's interpretation. The stimulus woman who used Nescafé instant coffee and Blueberry Fill Pie Mix was evaluated and described as less lazy and having less of a poor personality and appearance than the stimulus woman who used Nescafé alone. In fact, within a single percentage point, the stimulus woman who used Nescafé instant coffee and Blueberry Fill Pie Mix was evaluated and described the same as the stimulus woman who used Maxwell House coffee alone (no short-cut items) on the analysis dimension of poor personality and appearance. How can the addition of another short-cut food item lead to an overall improved evaluation and description of the stimulus woman when it was the short-cut nature of a food item (Nescafé) to which Haire attributed the original unfavorable evaluations and descriptions?

Haire's second experiment illuminates two potential problems with his projective technique. First, another item or items on the stimulus list other than the "test product" may be the most determinant in eliciting the evaluations and descriptions of the stimulus woman from subjects. Second, another item or items on the stimulus list may interact with the "test product" in determining the evaluations and descriptions of the stimulus woman elicited from subjects. Either one of these problems would lead to a spurious interpretation of the characteristics of a stimulus person using the test product.

Westfall, Boyd, and Campbell (1957) believed that the findings uncovered by Haire's indirect, projective technique could be obtained by traditional survey research techniques.

The researchers employed a more structured, direct questioning procedure to examine the differences between women who used instant coffee and women who did not. Westfall, Boyd, and Campbell presented housewives with 19 short descriptions of women, such as "the poorest cook you know" or "a thrifty housewife" (Westfall, Boyd, and Campbell, 1957, p. 136). after each description housewives were asked if they thought the woman who was described prepared coffee by one of the regular methods or used instant coffee. These researchers compared their findings with those of Haire's original study. Westfall, Boyd, and Campbell's findings generally supported Haire's except on the thrifty-spendthrift analysis dimension in which the converse was found.

Several further studies have been conducted which are basically replications of Haire's original study. These differ from Haire (1950) primarily in the time (Webster and von Pechmann, 1970; Sheth, 1971) and culture (Arndt, 1973) in which they were done. Webster and von Pechmann (1970), in a study done in 1968, replicated Haire's original study (Haire, 1950) as closely as possible. Correspondence with Haire minimized differences in methodology. Webster and von Pechmann hypothesized that because of the widespread acceptance of convenience food items by 1968, significant differences found by Haire would not be found between the stimulus woman who used Maxwell House coffee and the stimulus woman who used Nescafé instant coffee. This hypothesis was supported by their results, as no significant differences were found on the six analysis dimensions (lazy, poor planner, thrifty, spendthrift, and good wife, bad wife) on which differences were found by Haire. Webster and von Pechmann noted that both the Nescafé shopper and the Maxwell House shopper were evaluated more negatively than in 1950. They attributed this to the old-fashioned nature of some items on the list and the exclusion of any convenience items.

Sheth (1971) conducted a replication of Haire's original study during 1966 and 1967. Sheth's hypothesis was similar to Webster and von Pechmann's (1970). He hypothesized that no differences would be found between characterizations elicited from the regular coffee (Maxwell House) or instant coffee (Nescafé) lists, or if differences were found, these differences would be less than those found by Haire (1950). Sheth made two minor changes in Haire's original shopping list. Rumford's baking powder was changed to Calumet's baking powder because of Calumet's popularity with Sheth's sample, and Maxwell House coffee (Drip Grind) was changed to Maxwell House coffee (Regular Grind). Sheth found differences in descriptions between a stimulus woman who used Maxwell House regular grind coffee and a stimulus woman who used Nescafé instant coffee, but they were considerably smaller than the differences found by Haire. A significant difference was found between the stimulus woman who used Maxwell House (Regular Grind) coffee and the stimulus woman who used Nescafé instant coffee on only one of six analysis dimensions (lazy) in which differences were found by Haire (statistical analysis done in Arndt, 1973). Thus the latter part of Sheth's hypothesis was supported. Gratuitous comments by subjects suggested that items on the stimulus list were seen as being somewhat dated.

Arndt (1973) replicated Haire (1950) in a study done in Bergen, Norway in the fall of 1971. Arndt reported several changes in the stimulus list for its utilization in Norway. The brand names Rumford and Maxwell House were respectively changed to Freia and Friele, brands popular in Bergen. Also, pilot testing criticisms of the lack of proportionality in Haire's original list led to the following changes: bunch of carrots was changed to 2 bunches of carrots, and 5lbs. potatoes was changed to 1 bag of potatoes. A change not reported by Arndt but appearing in his version of the stimulus list was the exclusion of the brand name "Wonder" from the bread item. The analysis characteristics were obtained in the same manner as Haire. That is, descriptions of the stimulus woman elicited from subjects were content-analyzed to extract the main characteristics, and the main characteristics were summed across descriptions to provide the analysis dimensions as well as the values of each stimulus woman on these dimensions. Nineteen analysis dimensions were obtained from this procedure, four of which were the same as those found by Haire (lazy, poor planner, thrifty, spendthrift). On only one of these nineteen dimensions (spendthrift) was there a significant difference between the stimulus woman who used Friele coffee and the stimulus woman who used Nescafé instant coffee. Arndt concluded that this lack of significant differences was due to the acceptance of convenience foods by Norwegian women. Arndt also stated that it appeared that shopping list items other than the "test product" affected the responses. Arndt summarized, "The general approach proposed by Haire -- that is, the indirect approach as such, seems to be still applicable. However, the specific research instrument used, the shopping list in its original version, seems to have lost its sharp edge." (Arndt, 1973, p. 61).

Hill, in a critique (Hill, 1960) of Haire (1950) and a modified empirical replication (Hill, 1968), has suggested (and found support showing) some problems in Haire's projective technique and methodology. Hill (1960) questioned the overlap in Haire's analysis dimensions and suggested that several represented a single underlying planning dimension. Hill also suggested that placing Rumford's baking powder on the list just before the coffee item caused response bias against instant coffee. He reasoned that baking powder, intuitively an item with a positive value, immediately preceding instant coffee, an item with a negative value, created a strong contrast effect which caused the stimulus woman who used Nescafé instant coffee to be evaluated more negatively.

Hill's (1968) study, in a limited manner, began to examine the valence effects of stimulus list items in Haire's projective technique on the elicited descriptions of the stimulus woman who used either Maxwell House coffee (Drip Grind) or Nescafé instant coffee. A quote by Levinger

(1957, p. 330) expresses Hill's concept of valence. "The attractive or repulsive character of a region corresponds to its 'positive valence' or its 'negative valence.' Regions of positive valence induce approach, whereas regions of negative valence induce avoidance." In terms of Haire's projective technique, each stimulus item has a value (valence) and intensity (strength of valence) associated with it. Concerning the valence effects of list items on the descriptions elicited from subjects, Hill stated, "Product imagery, a commonplace marketing concept, says that all products and brands have a distinct image among consumers--including Haire's items. These images consequently may be expected to exert congeries of positive pulls or negative pushes upon subjects so that a final description of a shopper represents a reconciliation of conflict" (Hill, 1968, p, 469). Hill (1968) again brought up the possible effects on response resulting from the position of Rumford's baking powder, intuitively an item with a positive valence immediately before Nescafé instant coffee, an item with a negative valence. This positioning, Hill reasoned, created a strong contrast effect which caused the stimulus woman who used Nescafé instant coffee to be described more negatively. Hill suggested that Rumford's baking powder be replaced by salt, an intuitively neutral valent item. He then asked if a neutral-negative valence pairing of salt and Nescafé instant coffee would elicit similar descriptions from subjects as would a positive-negative valence pairing of Rumford's baking powder and Nescafé instant coffee.

To test this hypothesis, two seven-item shopping lists were employed. One list was the original Nescafé instant coffee list utilized by Haire while the other list differed only in that the salt item appeared in place of Rumford's baking powder. These two lists were presented to 100 subjects (50 subjects received each list) who had been qualified as non-users of instant coffee, and descriptions of the stimulus woman who had made the list were obtained. These descriptions were then classified as positive, neutral, or negative analytical units of subjects' attitudes toward the stimulus person from the appearance of descriptive polarities within the descriptions. Descriptions were classified as neutral either because a mixture of positive and negative polarities were present, or there was no clearly defined direction in the description. Hill found that the neutral-negative list elicited a significantly greater proportion of negative descriptions than did the positive-negative list. This result was the converse of the "contrast effect" that Hill (1960) had reasoned. Nevertheless, a significant difference in elicited descriptions was found by substituting a product (salt) for Rumford's baking powder in Haire's original shopping list. This result shows the import of valences of other list items in determining elicited descriptions of the stimulus woman.

Hill's coding procedure was somewhat arbitrary on two points. The first point was the decision as to what was classified as positively valued or negatively valued (e.g., a large family classified as positively valued and a small family as negatively valued). The second point was how much of a descriptive polarity mixture placed a description into the neutral classification. Nevertheless, Hill's main finding remains valid. Hill pointed out that branded items especially would have non-neutral valences. In conclusion Hill stated, "A key first task in test design...is to assess the valence of proposed stimuli in order to avoid potentially biasing interpretations of data," and "these present findings suggest that Haire-type designs seem valid provided valence effects of all stimuli are properly delineated" (Hill, 1968, p. 471 and 472, respectively).

After reviewing research findings and criticisms by Hill and others, Robertson and Joselyn (1974) proposed several modifications in Haire's projective technique and concomitant methodology to make it a more viable research tool. The researchers then empirically tested their modified version of Haire's projective technique. The first modification by Robertson and Joselyn was to utilize a paired-measures design to cancel group-specific bias and obtain perfect matching of subjects. Each subject received both lists, separated by a buffer list and with item order rearranged to disguise the similarity of the two lists. Each list appeared on a separate page, and the presentation order of the test lists was alternated with the buffer list always appearing second.

The second modification by the authors was in the design of the shopping lists. The authors used Hill's (1968) statement that brand names especially would have non-neutral valences to introduce another possible interpretation of Haire's original findings. Haire's original shopping lists differed not only in type of coffee but also in brand name of coffee. So, the differences in elicited descriptions could be partly attributed to different brand images (Maxwell House versus Nescafé). Robertson and Joselyn dealt with this problem by excluding brand names from products on the stimulus lists. However, they dealt inadequately with the effects of differential product valences. Instead of empirically assessing the valences of all products on the lists as Hill (1968) suggested, Robertson and Joselyn simply made an effort, "to include items on a typical shopping list with little emotional content surrounding their use" (Robertson and Joselyn, 1974, p. 30). Also quantities of items on the lists were eliminated. The shopping lists utilized by Robertson and Joselyn (1974, p. 29) were:

Shopping List I	Shopping List II	Shopping List III
Tuna fish	Mustard	Bread
Coffee	Soft drinks	Milk
Bread	Breakfast cereal	Catsup
Hamburger	Sugar	Coffee
Apples	Detergent	Tuna fish
Milk	Green beans	Tomato soup
Tomato soup	Tomato soup	Hamburger
Catsup	Cheese	
	Cookies	
	Tuna fish	
	Ice cream	
	Catsup	
	Butter	

The third modification by the authors was to employ a structured response technique. Past studies utilizing Haire's projective technique had employed open-ended, unstructured response techniques in the form of written descriptions. Interpretation and classification problems are inherent in open-ended, unstructured response techniques as well as increased time and financial costs to obtain and interpret responses. After reading each list, respondents checked one of the following for each of six characteristics: definitely applies, could possibly apply, probably does not apply, definitely does not apply. The six characteristics used were thrifty, concerned for others, lazy, quality conscious, concerned about nutrition, and wasteful. As can be seen from the above lists, the two test lists (I and III) were identical except for item order and the inclusion of an eighth item, apples, on one list. Only for the category "concerned for others" was a significant difference found in response patterns between lists. The paucity of significant differences between lists may be attributed to the nature of the "test product." Apples, viewed as a neutral valent product, would have little effect on response patterns. So, both lists would be expected to elicit similar response patterns because of the nondeterminant nature of apples. However, the purpose of the Robertson and Joselyn study was to illustrate their modified version of Haire's projective technique in an empirical study rather than explore the characteristics of apple consumers.

In research endeavors other than consumer research, interaction between a test stimulus and other stimuli in the embedding context has been found in two studies. Asch (1946), in a classic study on the formation of impressions, found "that the [cognitive] content and functional value of a trait changes with the given context" (Asch, 1946, p. 285). Subjects were presented with the stimulus trait "aggressive" embedded in two contexts. One list was composed of the traits active, helpful, and aggressive while the other list was composed of the traits lazy, unhelpful,and aggressive. Nineteen of 20 subjects judged the stimulus trait "aggressive" to be different in the two lists. In another experiment reported in the same study, subjects were presented with the stimulus trait "gay" embedded within two contexts. One list was composed of the traits gay, intelligent, and industrious while the other list was composed of the traits gay, stupid, and lazy. Twenty-seven of 30 subjects judged the trait "gay" to be different in the two lists. Representative subject reports suggest that when the "test trait" was embedded in a positive context (i.e., active, helpful or intelligent, industrious), it was judged to have a positive value. Conversely, when the "test trait" was embedded in a negative context (i.e., lazy, unhelpful or stupid, lazy), it was judged to have a negative value.

Asch also found that list traits dynamically interact and "in the process of mutual interaction the concrete character of each trait is developed in accordance with the dynamic requirements set for it by its environment" (Asch, 1946, p. 284). In the process of dynamic interaction, some traits emerge as dominant in forming an impression, but this dominance is determined by the whole system of relations for a given set or list of stimulus traits.

Utilizing a modified version of the technique employed by Asch (1946), Haire and Grunes (1950) found that a trait other than the test trait had a strong influence on elicited descriptions of the stimulus person (factory worker) who possessed the list traits. Haire and Grunes' projective technique and concomitant methodology were very similar to that used by Haire (1950). The focal trait which appeared on one list but not the other was "goes to union meetings." So, one list (Form I) was composed of eight traits (works in a factory, reads a newspaper, goes to movies, average height, cracks jokes, intelligent, strong, active), the other (Form II) nine. When the lists were presented to subjects, Haire and Grunes found that the trait "intelligent" conflicted with "works in a factory," making it difficult for college students to give a description of the stimulus person.

It is important to note that "intelligent" was not the "test trait" but that it still exerted a strong influence on the elicited descriptions of the stimulus person. To explore this finding further, Haire and Grunes composed two additional lists (Forms III and IV, respectively) which were identical to the first lists except that the stimulus trait "intelligent" was deleted from both lists. Haire and Grunes reported only findings from Form I and Form III. They found that the list with the trait "intelligent" elicited descriptions of the stimulus person (factory worker) different from the list without the trait "intelligent." Haire and Grunes concluded, "Two things seem to be true: (a) the meaning of an item is partly a function of its relation to other items, and (b) the phenomenal characteristics of items in an organization determine their relational effects" (Haire and Grunes, 1950, p. 410). Haire and Grunes' conclusions were basically the same as those of Asch (1946).

Ample research evidence has been presented to show that the cognitive meaning and functional value of a focal trait (or product) changes with the context within which it appears. This interaction between the focal trait and other traits within the embedding context was found by Asch (1946) in two experiments. Hills' findings (Hill, 1968) also support Asch. Asch (1946) in a number of interrelated experiments also found that in the process of dynamic interaction, some traits emerge as dominant in forming an impression, but this dominance is in turn determined by the whole system of relations for a given set or list of stimulus traits. Haire and Grunes (1950) found that stimulus traits other than the focal trait strongly influenced descriptions of a stimulus person. It follows that in Haire's projective technique (Haire, 1950), another product (or products) other than the "test product" could influence elicited descriptions of a stimulus woman. There is some evidence that this effect may have occurred in the second experiment by Haire (1950) when Blueberry Fill Pie Mix was added to both lists.

Wackman (1974) reviewed the first two experiments in Haire (1950) and stated that Haire's conclusions may have been invalid because all stimuli in a trait list contribute to the impression formed about a stimulus person. Wackman then suggested a research process to assess the validity of Haire's projective technique. His last phase is relevant to the present study and consisted of embedding the same test products within lists composed of different items. Wackman concluded, "If impressions varied by context (stimulus list), it might be difficult to interpret what symbolic meaning is connoted by the product" (Wackman, 1974, p. 216).

Research evidence by Hill (1968) suggests that product valence may be an effective means of varying the embedding context. Valent products could be combined to form embedding contexts or lists of differential valences. Support for varying embedding context by valence was found in Asch (1946). Asch found that a stimulus trait presented within a positive context was positively valued, while the same trait presented within a negative context was negatively valued.

Based on the research evidence presented, three hypotheses were tested:

First Hypothesis: The list valence factor has a significant effect on elicited descriptions of a stimulus woman.

Second Hypothesis: The "test product" factor has a significant effect on elicited descriptions of a stimulus woman.

Third Hypothesis: The interaction effect between the list valence factor and "test product" factor is significant.

METHOD

Subjects

One-hundred ninety-two married women residing in university married housing complexes at Michigan State University served as subjects. All subjects were native United States citizens, thus excluding foreign persons residing in university married housing. This qualification was made because of foreigners' possible unfamiliarity with United States food products or shopping practices. The apartment numbers of prospective subjects were selected by means of a random number table.

Demographic data on formal education, age, number of children living with subject, total family income per month, average weekly amount spent on food products and proportion of family food shopping done by subject were obtained from each subject. Frequencies and percentages within each demographic variable appear in Appendix A.

Procedure

The study was carried out in four phases; three preliminary phases of stimuli development and the phase of primary interest where the list valence and test product factors were varied.

Each subject participated in only one phase. Before participation, each subject was asked if she was presently married and a native United States citizen.

The concept of valence has been operationalized as the desirability of an outcome in several studies of expectancy theory and job behavior (Galbraith & Cummings, 1967; Dachler & Mobley, 1973; Lawler & Suttle, 1973). Valence was operationalized similarly in the present study as the desirability of a food product, or list of food products.

In Phase One 31 subjects completed questionnaires in which they were asked to list five food products which were (a) very desirable to them, (b) very undesirable to them, and (c) neutral in desirability (neither desirable nor undesirable) to them. Parts (a) and (b) were alternated with part (c) always given last. This was done to give subjects reference anchors to facilitate their thinking of neutral food products. Of the 31 questionnaires, seven were completed by subjects in person and the remainder were completed by telephone interviews with subjects. From this phase groups of positive, neutral, and negative valent food products were obtained.

In Phase Two a questionnaire was constructed from the groups of food products obtained in Phase One. Food products which were ambiguous with respect to desirability (food products named as very desirable and very undesirable in an approximately equal number of times) were discarded. This questionnaire consisted of 132 food products, of which 44 were desirable, 52 were undesirable, and 36 were neutral in desirability.

Each food product was rated on a seven point, bi-polar adjective scale as follows:

very desirable			neutral			very undesirable

The direction of the scale polarities was randomly assigned for each food product. Each food product was then randomly placed within a page and the page order within questionnaires was randomized. The instructions given subjects were: "Please rate each of the following food products on its desirability <u>to you</u>." These instructions appeared on the front page of the questionnaire with a cover letter from the experimenter. This questionnaire along with an addressed, business reply envelope was personally delivered to 100 married women at their apartments in university married housing. These women were asked to complete the questionnaire, seal it in the accompanying envelope, and drop it in a convenient mailbox.

Sixty-seven usable questionnaires were received within one week after distribution and were used as the data for this phase. The mean and standard deviation for each food product were computed. The very desirable scale point was scored seven, the neutral scale point was scored four, and the very undesirable scale point was scored one with intervening scale points receiving respective values. These means and standard deviations are presented in Table 3.

Table 3

Rated Desirability[1] of Food Products

Product	$\bar{X}$	σ	Product	$\bar{X}$	σ
American cheese	4.94	1.87	Cd. peas	3.80	2.09
Anchovies	2.06	1.75	Cd. salmon	4.57	2.12
Apples	6.44	1.17	Cd. sardines	2.74	1.86
Apple cider	5.62	1.59	Cd. spaghetti	2.73	1.87
Apple sauce	5.60	1.45	Cd. spaghetti sauce	3.90	1.92
Bacon	5.23	2.04			
Beef kidneys	2.09	1.74	Cd. stew	2.93	1.75
Beef tongue	2.49	1.95	Cd. stewed tomatoes	4.54	2.11
Bologna	4.38	1.81			
Boxed macaroni & cheese	3.82	1.86	Cd. tuna fish	5.64	1.51
			Catsup	5.67	1.24
Bread	5.66	1.61	Cheddar cheese	5.86	1.37
Butter	5.61	1.81	Chicken	6.06	1.53
Camembert cheese	3.85	1.69	Chicken gizzards	2.58	1.94
Candy bars	4.33	2.07	Chow mein	4.51	2.05
Cd.[2] baked beans	4.43	1.92	Clams	4.55	2.07
Cd. chili	2.94	1.73	Coffee (regular grind)	3.69	2.31
Cd. corn	4.69	1.75			
Cd. cream of celery soup	3.81	1.88	Cooking oil	4.99	1.58
			Corn meal	4.84	1.46
Cd. Fr. style green beans	4.52	1.79	Cottage cheese	5.00	2.12
			Creamed cheese	5.34	1.66
Cd. green beans	4.50	2.02	Dates	4.73	1.91
Cd. ham	5.23	1.84	Dried apricots	4.45	2.00
Cd. lima beans	2.84	1.90	Ears of fresh corn	6.34	1.23
Cd. lunch meat	3.10	1.86			
Cd. macaroni & cheese	2.23	1.57	Eggplant	4.15	1.97
			Eggs	6.08	1.49
Cd. mushroom soup	5.18	1.78	Flavored gelatin	4.87	1.52

Table 3 (continued)

Product	$\bar{X}$	σ	Product	$\bar{X}$	σ
Flour	5.36	1.56	Fn. peas	4.59	2.07
Freeze-dried coffee	3.39	2.12	Fn. pizza	3.83	1.93
Fr.[3] artichokes	3.60	2.11	Fn. shrimp	5.80	1.60
Fr. avocados	4.06	2.22	Fn. veal patties	2.91	1.66
Fr. beets	4.43	2.29	Ground beef	5.72	1.71
Fr. cabbage	5.27	1.90	Hamburger	5.73	1.39
Fr. carrots	5.99	1.34	Hamburger dinner mixes	2.51	1.69
Fr. cauliflower	5.42	2.27	Horseradish	3.46	1.95
Fr. coconut	4.81	2.03	Ice cream	5.82	1.62
Fr. grapes	6.64	.77	Instant coffee	3.36	2.06
Fr. lemons	5.67	1.50	Instant potatoes	2.47	1.82
Fr. limes	4.83	1.97	Lamb	4.57	2.03
Fr. muskmelon	5.82	1.88	Lettuce	6.22	1.30
Fr. pears	6.02	1.66	Limburger cheese	2.66	1.75
Fr. pineapple	6.06	1.61	Liver	3.89	2.38
Fr. plums	6.34	1.23	Margarine (sticks)	5.17	1.80
Fr. rutabaga	3.79	2.01	Milk	6.40	1.13
Fr. strawberries	6.51	1.34	Mustard	4.97	1.62
Fr. tomatoes	6.30	1.51	Pkd.[5] cake mix	4.66	1.83
Fr. turnips	3.90	2.15	Pkd. chocolate chips	5.26	1.61
Fr. zucchini squash	4.99	2.24	Pkd. cookies	4.18	1.92
Frog legs	2.49	1.81	Pkd. dry baking beans	4.29	1.95
Fn.[4] cod	3.64	1.73	Pkd. dry lasagna	3.66	1.97
Fn. corn	5.55	1.46	Pkd. hot dogs	4.55	1.78
Fn. fish sticks	3.78	1.97	Pkd. licorice	4.16	2.17
Fn. lasagna	3.55	1.85	Pkd. macaroni	4.70	1.70
Fn. lemonade	5.28	1.74	Pkd. noodles	5.08	1.58
Fn. lima beans	3.45	2.81	Pkd. pastry	3.63	1.88
Fn. lobster	5.09	1.98	Pkd. pizza (mix)	4.34	2.03
Fn. ocean perch	4.71	1.88			

Table 3 (continued)

Product	$\bar{X}$	σ	Product	$\bar{X}$	σ
Pkd. pre-sweet-ened cold cereal	3.36	2.11	Regular oatmeal	4.99	1.69
Pkd. rice	5.05	1.63	Sirloin steak	6.48	1.06
Pkd. unsweet-ened cold cereal	4.72	1.68	Skimmed milk	4.91	2.09
Peanut butter	5.25	1.77	Soft margarine	4.67	1.89
Pig's feet	1.79	1.51	Spaghetti noodles	5.09	1.59
Popsicles	4.57	1.99	Stew beef	5.02	1.55
Potatoes	5.58	1.63	Sugar	4.83	1.90
Potato chips	4.71	1.94	Toaster pastries	2.67	1.81
Pot roast	5.46	2.01	Veal	4.15	1.79
Pre-sweetened drink mixes	3.42	1.98	Watermelon	5.79	1.80
Raisin bread	4.97	1.92	Whole wheat bread	5.88	1.61
			Yogurt	4.79	2.01

[1]Very desirable = 7, neutral = 4, and very undesirable = 1.

[2]canned

[3]fresh

[4]frozen

[5]packaged

In Phase Three, six-item lists were composed from food products rated in Phase Two. Three lists were composed with products rated closest to one (with small standard deviations) on the desirability scale. Six lists were composed with products rated closest to four (with small standard deviations). Three lists were composed with products rated closest to seven (with small standard deviations). Some products appeared in more than one list within their respective valence categories. The only qualification to a statistical decision of whether a food product was included in a list was an attempt to construct six-item lists that would resemble "real" shopping lists. The resultant questionnaire contained three positive valent, three negative valent, and six neutral valent six-item food shopping lists. Each shopping list was rated on the seven point, bi-polar adjective scale employed in Phase Two. Each list appeared on a separate page. The direction of the scale polarities was randomly assigned for each list. The food product order within each list was randomly assigned, and the page order within questionnaires was randomized. The instructions given subjects were: "Please rate each of the following food shopping lists on its desirability <u>to you</u>." These instructions appeared on the front page of the questionnaire with a cover letter from the experimenter and instructions on proper scale usage. The questionnaire was personally delivered to 40 married women at their apartments in university married housing. These women were asked to complete the questionnaire by the following night when the experimenter would return to collect them (the women were asked to place the questionnaire inside the screen door if they would not be home). Thirty-four usable questionnaires were collected and used as the data for this phase. The mean and standard deviation were computed for each food shopping list. The six-item lists with their respective means and standard deviations appear in Table 4.

In Phase Four, the one of primary interest, the list rated most desirable (positive valent), the list rated most undesirable (negative valent), the list rated closest to neutral (neutral valent) in Phase Three were selected as the stimuli for the list valence manipulation. The product order within each list was randomly reassigned to provide two lists of the same products for each list valence level. Two test products, one positive valent and one negative valent, were selected from the remaining food products for the test product manipulation. The criteria for selection were that the test products be in the same product class and that one was rated very desirable while the other was rated very undesirable (with small standard deviations). The test products chosen were sirloin steak ($\bar{X} = 6.478$, $\sigma = 1.056$) and beef kidneys ($\bar{X} = 2.090$, $\sigma = 1.743$). These test products were randomly assigned to the two lists within each list valence level, and were placed in the fifth spot within the list as in Haire (1950). A buffer list of twelve food products was also composed. The six resultant shopping lists plus the buffer list employed were:

Table 4

Rated Desirability of Six-Item Food Shopping Lists

List	$\bar{X}$	σ	List	$\bar{X}$	σ
Chicken Milk Fresh grapes Eggs Whole wheat bread Fresh tomatoes	6.788	1.037	Packaged pastry Bologna Packaged dry baking beans Camembert cheese Packaged pizza (mix) Canned spaghetti sauce	3.242	1.478
Sirloin steak Milk Ears of fresh corn Whole wheat bread Lettuce Fresh stawberries	6.588	1.437	Fresh rutabaga Camembert cheese Bologna Frozen pizza Packaged dry lasagna Candy bars	2.879	1.683
Frozen shrimp Milk Fresh plums Ice cream Apples Lettuce	5.824	1.403	Frozen pizza Eggplant Packaged cookies Frozen cod Fresh turnips Candy bars	2.647	1.532

Table 4 (continued)

List	$\bar{X}$	σ	List	$\bar{X}$	σ
Veal	3.455	1.986	Beef tongue	2.912	2.119
Packaged dry baking beans			Canned spaghetti		
Canned peas			Chicken gizzards		
Packaged pizza (mix)			Hamburger dinner mix		
Canned cream of celery soup			Frogs' legs		
Frozen cod			Canned macaroni and cheese		
Boxed macaroni and cheese	3.118	1.694	Instant potatoes	2.206	2.040
Eggplant			Toaster pastries		
Packaged dry lasagna			Canned lima beans		
Canned spaghetti sauce			Canned macaroni and cheese		
Packaged pastry			Anchovies		
Veal			Pigs' feet		
Frozen fish sticks	3.794	1.451	Frozen veal patties	2.588	1.536
Boxed macroni and cheese			Hamburger dinner mix		
Packaged cookies			Canned sardines		
Canned peas			Beef kidneys		
Canned cream of celery soup			Instant potatoes		
Fresh turnips			Canned lima beans		

Chicken
Milk
Fresh grapes
Eggs
Sirloin steak
Whole wheat bread
Fresh tomatoes

Fresh tomatoes
Eggs
Fresh grapes
Milk
Beef kidneys
Chicken
Whole wheat bread

Frozen fish sticks
Boxed macaroni & cheese
Packaged cookies
Canned peas
Sirloin steak
Canned cream of celery soup
Fresh turnips

Fresh turnips
Canned cream of celery soup
Canned peas
Boxed macaroni & cheese
Beef kidneys
Packaged cookies
Frozen fish sticks

Pigs' feet
Canned lima beans
Toaster pastries
Canned macaroni & cheese
Sirloin steak
Instant potatoes
Anchovies

Instant potatoes
Toaster pastries
Canned lima beans
Canned macaroni & cheese
Beef kidneys
Anchovies
Pigs' feet

Bologna
Eggplant
Packaged dry lasagna
Canned spaghetti sauce
Packaged pastry
Veal
Frozen pizza
Camembert cheese
Packaged dry baking beans
Frozen cod
Fresh rutabaga
Candy bars

The procedure utilized was adapted from Robertson and Joselyn (1974). Each subject received both lists within a list valence level separated by the buffer list. The two lists were alternated within each level of the list valence factor so that both the positive and negative valent test product were presented first and third an equal number of times. Each stimulus list appeared on a separate page preceded by the following instructions (adapted from Haire, 1950):

"Read the shopping list below. Try to project yourself into the situation as far as possible until you can more or less characterize the woman who bought the groceries. Then rate her personality and character on the scales below." Below each list were eight, seven-point, bi-polar adjective rating scales. These scales reflected the dimensions on which past research had found significant (or near significant) differences between stimulus women. The bi-polar adjectives were industrious-lazy, good planner-poor planner, thrifty-spendthrift, a good wife-not a good wife (adapted from Haire, 1950); enjoys homemaking, cooking-does not enjoy homemaking, cooking (adapted from Sheth, 1971); good taste-bad taste (adapted from Arndt, 1971); quality conscious-not quality conscious, and concerned for others-not concerned for others (adapted from Robertson and Joselyn, 1974). The direction of the scale polarities was randomly assigned for each scale, and the scale order for each list was randomized. Following the three stimulus lists was a page on which the six-item shopping list rated in Phase Three appeared. The instructions preceding the list were: "Please rate the following food shopping list on its desirability _to you_." Below the list was the seven point desirability scale utilized in Phases Two and Three. This rating of the six-item list was obtained as a list valence check. On the front page were a cover letter from the experimenter and instructions on proper scale usage. Sixty married women were given one of the three list valence conditions (20 received each condition). The questionnaires, which had been randomized prior to distribution, were personally delivered to these women at their apartments in university married housing and were completed with the experimenter present. The experimenter's presence deterred subjects from examining the questionnaire for extended periods of time (possibly discovering the similarity between stimulus lists).

Design

The two factors which were varied were a list valence factor and a test product factor. The list valence factor was a between subjects factor and the test product factor was a within subjects factor. There was a one-way design over the subjects with three levels; positive valent list, neutral valent list, and negative valent list levels. There was also a one-way design over the repeated measures with two levels; a positive test product level and a negative test product level. The design over the subjects and the design over the repeated measures were completely crossed and subjects were considered a random factor.

Analyses

A modified verion (Scheifley and Schmidt, 1973) of MULTIVARIANCE (Finn, 1972) was utilized to perform a multivariate analysis of variance with repeated measures on the data. With this analysis, the significance of hypothesized effects was tested for all eight dependent measures jointly. Correlated subject response errors across the repeated measures (test product) factor were taken into account by this analysis (see Bock, 1975).

Three degrees of freedom were available for hypothesis tests of the list valence factor, two were available for the test product factor, and two were available for the list valence X test product interaction. The mean contrasts chosen for hypothesis tests of the list valence factor were:

$$\text{constant} + \frac{\text{neutral list mean}}{3} + \frac{\text{positive list mean}}{3} + \frac{\text{negative list mean}}{3}$$

$$\text{neutral list mean} - \frac{\text{positive list mean}}{2} - \frac{\text{negative list mean}}{2}$$

$$\text{positive list mean} - \text{negative list mean}$$

The mean contrasts chosen for the hypothesis tests of the test product factor were:

$$\text{constant} + \frac{\text{positive test product mean}}{2} + \frac{\text{negative test product mean}}{2}$$

$$\text{positive test product mean} - \text{negative test product mean}$$

The interactive contrasts employed for hypothesis tests of list valence by test product interactions were each of the list valence contrasts by the test product contrast. Specifically, these interactive contrasts were:

$$\text{(neutral list, positive test product mean)} - \left(\begin{array}{l}\text{neutral list, negative}\\ \text{test product mean}\end{array}\right) -$$
$$\left(\frac{\text{positive + negative list}}{2}\text{, positive test product mean}\right) +$$
$$\left(\frac{\text{positive + negative list}}{2}\text{, negative test product mean}\right)$$

$$\text{(positive list, positive test product mean)} - \left(\begin{array}{l}\text{positive list, negative}\\ \text{test product mean}\end{array}\right) -$$
$$\text{(negative list, positive test product mean)} + \left(\begin{array}{l}\text{negative list, negative}\\ \text{test product mean}\end{array}\right)$$

The first term for the list valence and test product factors represents a constant term for that factor.

It should be noted that the two contrasts for the list valence factor are Helmert contrasts, and as such are orthogonal. This allows the list valence hypothesis contrasts, and also the interactive contrasts to be tested independently (see Finn, 1974). The positive - negative list valence mean contrast was employed to "capture" the greatest between group differences on the list valence factor. The neutral - $\left(\frac{\text{positive + negative}}{2}\right)$ list valence mean contrast was utilized to determine if the neutral valent list was perceived by subjects as neutral valent. The three preliminary phases of stimuli development had shown that the neutral valent products and lists were not as stable as those in the positive and negative valent conditions. Since the average of the positive and negative valent lists should define the neutral valent point, nonsignificance would be expected on this contrast.

A two-stage significance-testing approach recommended by Hummel and Sligo (1971) was employed. An overall multivariate test was carried out on the eight dependent measures simultaneously using a likelihood ratio criterion (Wilk's Λ). If the overall multivariate null hypothesis was rejected, the univariate F's were interpreted to determine which dependent measures were significantly affected by the hypothesis contrast, and the strength of the effects.

The mean and standard deviation for each of the three, six-item lists were computed from subject's ratings on the seven-point desirability scale for the list valence check.

RESULTS

The multivariate null hypothesis for the postive - negative list valence X test product interaction was rejected, $\underline{F}$ (8,50) = 2.3957, $\underline{p}$ < .0286. The univariate F's for the eight dependent measures were next examined to find which variates were significantly affected. This univariate summary information is presented in Table 5.

Table 5

Univariate Summary Information for Positive - Negative List Valence X Test Product Interaction

Dependent Measure	MS_h	Univ. F	p<
Enjoyment of homemaking, cooking	11.25	7.71	.0075
Industriousness	8.45	6.65	.0125
Thrift	6.61	4.49	.0384
Good taste-bad taste	1.01	1.72	.1951
Good wife-bad wife	.2	.5	.482
Quality consciousness	.31	.37	.546
Good planner-poor planner	.61	.37	.5469
Concern for others df = 1,57	.01	.007	.9298

It can be seen from Table 5 that the positive - negative list valence X test product interaction reaches univariate significance for three of the eight dependent variates. The cell means for these three dependent measures are graphed in Figure 1.

Simple main effects were computed to determine if a significant difference existed between the positive and negative valent lists at each test product level (positive and negative), and if a significant difference existed between the positive and negative test products at each list valence level (positive and negative). This analysis was done for each variate (enjoyment of homemaking, cooking, industriousness, and thrift). Significant differences were found between the positive and negative valent lists at the positive test product level on enjoyment of homemaking, cooking, F (1,38) = 11.4717, $p < .002$, industriousness, F (1,38) = 14.074, $p < .001$, and thrift, F (1,38) = 6.6343, $p < .014$. Significant differences were found between lists at the negative test product level on enjoyment of homemaking, cooking, F (1,38) = 47.12, $p < .0005$, industriousness, F (1,38) = 70.139, $p < .0005$, and thrift, F (1,38) = 20.788, $p < .0005$. Significant differences were found between the positive and negative test products at the positive list valence level on enjoyment of homemaking, cooking F (1,19) = 8.0346, $p < .025$, industriousness, F (1,19) = 6.6029, $p < .025$, and thrift, F (1,19) = 9.0302, $p < .01$. However, no significant differences were found between test products at the negative list valence level on the three dependent variates (the smallest p level was .2). It should be noted that the largest alpha level at which the null hypothesis would

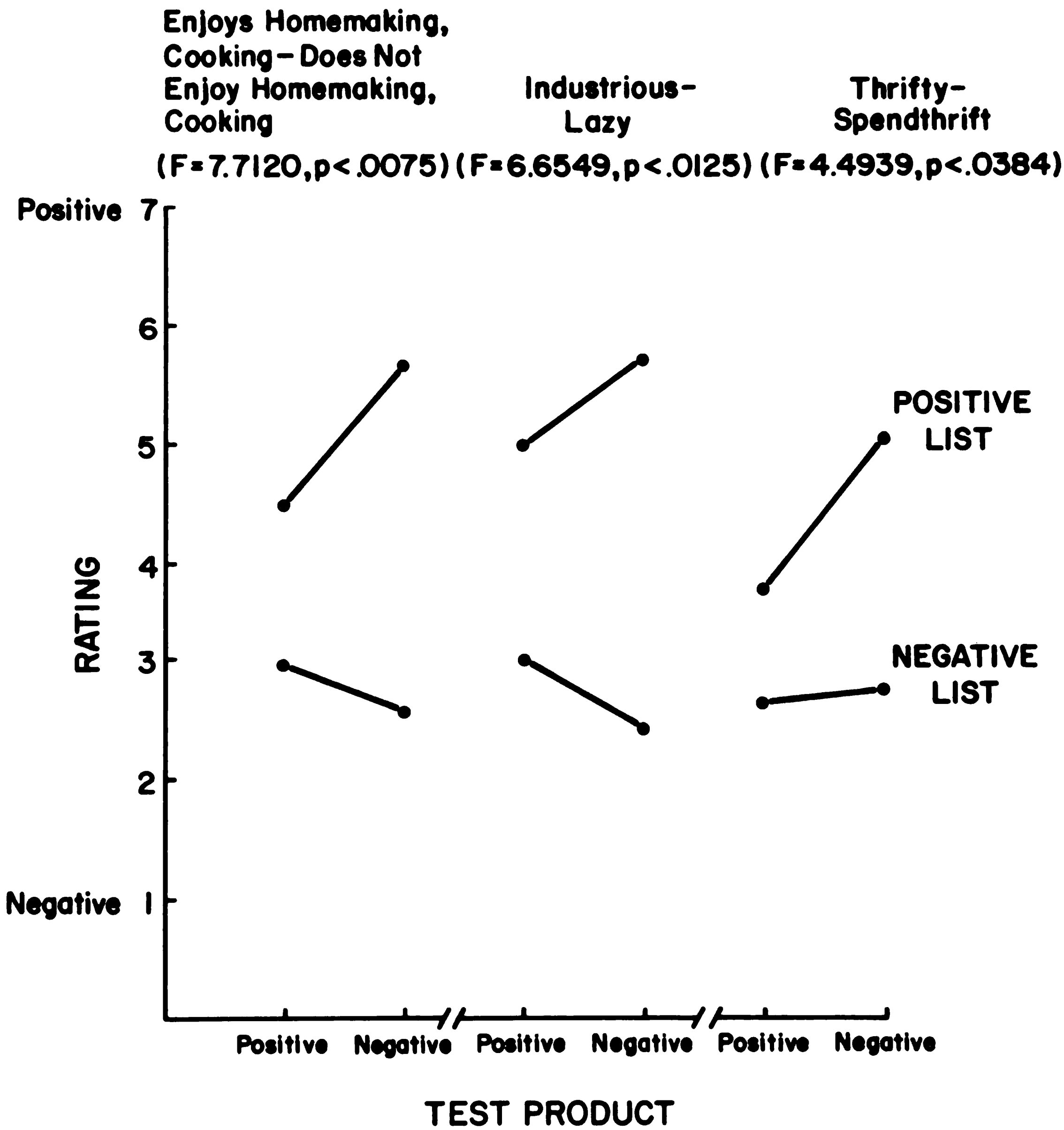

FIGURE 1. Stimulus Person's Homemaking, Cooking Enjoyment, Industriousness, and Thrift as a Function of Positive – Negative List Valence X Test Product Interaction

be rejected was .025. This alpha level was used to maintain the overall alpha level per family of tests (two each for positive and negative valent lists, and positive and negative test products) at .05 for each dependent variate.

The multivariate null hypothesis for the neutral - $\left(\frac{\text{positive + negative}}{2}\right)$ list valence X test product interaction was accepted, F (,50) = 1.0437, p .4169. The multivariate significance of the positive - negative list valence X test product interaction precluded a clear test of positive - negative list valence or test product main effects.

The multivariate null hypothesis for the neutral - $\left(\frac{\text{positive + negative}}{2}\right)$ list valence effect was rejected, F (8,50) = 3.0303, p .0075. Again, following multivariate significance the univariate F's were examined to determine which dependent measures were significantly affected. This univariate summary information is presented in Table 6.

It can be seen from Table 6 that there is univarate significance on six of the eight dependent variates. The mean differences show that the neutral list was rated lower than the average of the positive and negative lists on all eight dependent measures, significantly so on six measures. The average of the positive and negative valent lists should define the neutral valent list point.

The mean of the positive valent six-item list was 5.8 with standard deviation of 1.435. The mean and standard deviation of the neutral valent six-item list were 2.15 and

1.108, respectively. The mean of the negative valent six-item list was 1.15 with a standard deviation of .357.

Table 6

Univariate Summary Information for
Neutral - $\left(\frac{\text{Positive + Negative}}{2}\right)$
List Valence Mean Contrast

Dependent Measure	MS_h	Univ. F	p<	Mean Difference
Quality consciousness	31.54	17.98	.0001	-1.088
Good taste-bad taste	31.54	16.17	.0002	-1.088
Industriousness	26.67	9.0	.0041	-1.0
Good wife-bad wife	16.02	8.87	.0043	- .775
Enjoyment of home-making, cooking	24.07	8.76	.0045	- .95
Good planner-poor planner	9.2	4.29	.043	- .588
Concern for others	5.7	2.41	.1258	- .463
Thrift	.7	.25	.6198	- .163
df = 1,57				

DISCUSSION

The significant multivariate positive - negative list valence X test product interaction supports hypothesis three. Clear tests of overall list valence effects (hypothesis one) and test product effects (hypothesis two) were not possible due to confounding from this significant interaction. However, a partial test of hypothesis one was provided by the neutral - $\left(\frac{\text{positive + negative}}{2}\right)$ list valence mean contrast.

The most significant univariate positive - negative list valence X test product interaction was on the dependent measure of enjoyment of homemaking, cooking. When beef kidneys appeared in the presence of very desirable food products (a positive valent context), the stimulus woman was rated as significantly enjoying homemaking and cooking more than when sirloin steak appeared within the same context. However, when beef kidneys appeared in the presence of very undesirable food products (a negative valent context), the stimulus woman was not rated as significantly enjoying homemaking and cooking more than when sirloin steak appeared within the same context. As can be seen from Figure 1, an opposite though nonsignificant trend occurred.

An explanation of these results can be made from the preparatory nature of the test products and valent context connotations. Sirloin steak requires relatively little culinary skill to prepare as a desirable food while beef kidneys, by contrast, require considerably greater culinary skill to prepare as a desirable food. The positive valent context connoted enjoyment of homemaking and cooking while the negative valent context connoted the contrary. The significant difference between the positive and negative valent lists at each test product level supports this conclusion. Thus, when beef kidneys appeared within the positive context, the stimulus woman was seen as a homemaker who enjoyed cooking and possessed the culinary skill necessary for preparing beef kidneys as a desirable food. This cooking ability (to prepare beef kidneys as a desirable food) caused the stimulus woman to be rated significantly higher than when the more easily prepared sirloin steak appeared within the positive context. However, beef kidneys within the negative context was seen as consonant evidence that the stimulus woman did not enjoy homemaking and cooking.

The same pattern of results and a similar explication hold for the significant univariate interaction on the dependent measure of industriousness. The salient difference is that effort and time expenditure rather than cooking ability were tapped by the industriousness measure. When beef kidneys appeared in the positive valent list, the stimulus woman was rated as significantly more industrious than when sirloin steak appeared in the positive list. However, the stimulus woman was not rated as significantly more industrious when beef kidneys as opposed to sirloin steak appeared in the negative valent list. Again, as can be seen in Figure 1, an opposite though nonsignificant trend did occur. Sirloin steak requires little effort or time to prepare as a desirable food. On the other hand, beef kidneys require a considerable amount of effort and time to prepare as a desirable food. Again, differential list connotations were extant. The positive valent list conveyed industriousness while the negative valent list conveyed laziness. The significant difference between lists at each test product level on industriousness supports this conclusion. So when beef kidneys appeared within the positive list, the stimulus woman was perceived as someone who would put forth the effort and additional time necessary for preparing beef kidneys as a desirable food. Because of the relatively greater effort and time expenditure involved in preparing beef kidneys as a desirable food, this stimulus woman was rated as significantly more industrious than the stimulus woman who had sirloin steak (requiring little effort and time) within the positive list. Conversely, beef kidneys within the negative list was perceived as congruent with that list in conveying laziness.

The significant univariate positive - negative list valence X test product interaction on the dependent measure thrift provides further support of the interactive effect between embedding context and test product. When beef kidneys appeared within the positive context, the stimulus woman was rated significantly more thrifty than when sirloin steak appeared within the positive context. This result alone is not surprising as it is an objective fact that there is a great disparity in price between sirloin steak and beef kidneys. However, when beef kidneys appeared within the negative context, the stimulus woman was not rated significantly more thrifty than when sirloin steak appeared within the negative context. An explanation of these results is that the positive valent list suggested thrift while the negative valent list suggested thriftlessness. The significant difference between lists on thrift at each test product level supports this explanation. When beef kidneys appeared within the positive context, the stimulus woman was perceived (accurately) as significantly more thrifty than when relatively expensive sirloin steak appeared within the positive context. When beef kidneys appeared within the negative context, however, they were subjectively perceived as being consistent with the spendthrift nature of that context.

From these results it can be concluded that impressions formed about a stimulus person using a given test product are dependent upon the embedding context (stimulus list) within which that test product is presented. This finding was consonant with those of Asch (1946) in his work on personality impression formation. Hill's (1968) findings on the important influence of product valences of other list items on elicited descriptions and their "contrast" effects with the test products were also supported.

The implications for Haire's shopping list projective technique are clear. Its validity is questioned on the basis of its reliability across varied valent contexts. Reliability is a well-known antecedent of validity. The rated impressions of stimulus women using constant test products were unstable across context lists of differential valence. Within one context the differences between stimulus women using two test products were significant. Within another context these differences were not significant. What valid conclusions can be drawn about the differences between test products?

Mason Haire assumed differences in descriptions of a stimulus woman elicited from two lists which were identical except for two test products were simply a function of those two products. The present data have shown this assumption to be in error. Rather, these differences are a function of the two products _and_ their unique (and therefore differential) interactions with the embedding context. There was evidence of test "trait" and stimulus list interaction in Haire's (1950) second experiment with Blueberry Fill Pie Mix, and his study on perceptions of union-workers with Grunes (Haire & Grunes, 1950). In this latter study, Haire and Grunes obtained different descriptions of a stimulus person (factory worker) from alternate forms of a stimulus list (one trait, intelligent, was deleted to provide the alternate forms). None of the replications of Haire's classic study (Haire, 1950) have addressed this problem.

Another finding of interest is the neutral - $\left(\frac{\text{positive + negative}}{2}\right)$ list valence effect. As stated earlier, the average of the positive and negative valent lists should define the neutral valent list point. Therefore, one would expect the null hypothesis to be accepted. However, the multivariate null hypothesis and six of eight univariate null hypotheses were rejected. Mean differences showed that the neutral list was rated lower than the average of the positive and negative lists for all eight dependent measures, significantly so on six of them. The results from the list valence check provided consonant support that the neutral list was not perceived as being neutral. The positive and negative valent lists held up well while the neutral valent list was unstable. This difficulty in obtaining stable neutral stimuli is common in the development of behavioral expectation scales (e.g., Harari & Zedeck, 1973; Landy & Guion, 1970). Because of the decay of the neutral valent list, the most meaningful test of the list valence X test product interaction, empirically and theoretically, was provided by the positive - negative list valence X test product interactive contrast rather than the neutral - $\left(\frac{\text{positive + negative}}{2}\right)$ X test product interactive contrast or combining the two orthogonal interactive contrasts for a single test of the interaction.

APPENDIX

APPENDIX A

Subject Demographics

1. How much formal education have you had?

	Phase 1 Freq.	%	Phase 2 Freq.	%	Phase 3 Freq.	%	Phase 4 Freq.	%
less than eighth grade	0	0	0	0	0	0	0	0
finished eighth grade, but did not finish high school	0	0	0	0	0	0	0	0
graduated from high school	2	6.5	5	7.7	5	14.7	7	11.7
had some college work	14	45.2	27	41.5	17	50.0	25	41.7
graduated from college	10	32.3	20	30.8	4	11.7	17	28.3
completed some graduate training	5	16.1	13	2.0	8	23.5	11	18.3

2. How old are you?

	Phase 1 Freq.	%	Phase 2 Freq.	%	Phase 3 Freq.	%	Phase 4 Freq.	%
20 and under	4	12.9	3	4.6	4	11.8	9	15.0
21-25	19	61.3	39	60.0	20	58.8	36	60.0
26-30	7	22.6	17	26.1	5	14.7	11	18.3
31-35	1	3.2	5	7.7	5	14.7	3	5.0
36 and over	0	0	1	1.5	0	0	1	1.7

3. How many children are living with you now?

	Phase 1 Freq.	%	Phase 2 Freq.	%	Phase 3 Freq.	%	Phase 4 Freq.	%
None	19	61.3	39	60.0	22	64.7	38	63.3
One	7	22.6	17	26.1	6	17.6	13	21.7
Two	5	16.1	5	7.7	5	14.7	5	8.3
Three	0	0	3	4.6	1	2.9	3	5.0
Four or more	0	0	1	1.5	0	0	1	1.7

4. What is your total family income per month?

	Phase 1 Freq.	%	Phase 2 Freq.	%	Phase 3 Freq.	%	Phase 4 Freq.	%
under $300	2	6.5	13	20.6	3	8.8	10	16.7
$300 to $374	2	6.5	8	12.7	3	8.8	5	8.3
$375 to $424	5	16.1	7	11.1	5	14.7	11	18.3
$425 to $499	7	22.6	7	11.1	6	17.6	6	10.0
$500 to $599	5	16.1	8	12.7	4	11.8	8	13.3
$600 to $699	5	16.1	8	12.7	1	2.9	5	8.3
$700 to $800	2	6.5	5	7.9	4	11.8	7	11.7
over $800	3	9.7	7	11.1	8	23.5	8	13.3

APPENDIX A (cont'd)

5. On the average, how much is spent on food products each week for your family?

	Phase 1		Phase 2		Phase 3		Phase 4	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
under $10	0	0	0	0	0	0	0	0
$11-$15	3	9.7	7	10.8	4	11.8	5	8.3
$16-$20	13	41.9	12	18.5	7	20.6	9	15.0
$21-$25	6	19.4	20	30.8	7	20.6	16	26.7
$26-$30	4	12.9	10	15.4	6	17.6	12	20.0
$31-$35	3	9.7	3	4.6	4	11.8	8	13.3
$36-$40	0	0	7	10.8	2	5.9	6	10.0
over $41	2	6.5	6	9.2	4	11.8	4	6.7

6. Approximately what proportion of the family food shopping do you do?

0%	0	0	0	0	0	0	0	0
10%	1	3.2	2	3.1	2	5.9	0	0
20%	0	0	0	0	0	0	0	0
30%	0	0	2	3.1	0	0	4	6.7
40%	1	3.2	1	1.5	1	2.9	1	1.7
50%	7	22.6	3	4.6	2	5.9	6	10.0
60%	1	3.2	3	4.6	1	2.9	0	0
70%	0	0	2	3.1	2	5.9	1	1.7
80%	5	16.1	12	18.5	3	8.8	6	10.0
90%	6	19.4	9	13.8	9	26.5	17	28.3
100%	10	32.3	31	47.7	14	41.2	25	41.7

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