COMMUNICATION AND EXPERIENCE: THE ACCEPTANCE OF A NEW FOOD PRODUCT BY ELDERLY CONSUMERS LIVING IN GERIATRIC HOUSING

by

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CHAPTER I

INTRODUCTION

At the broadest level, the objective of this dissertation was to explore the consumer behavior of the elderly. More specifically, the research study examined the impact of the following "sets" of behavioral variables on the trial of a new food product by elderly consumers living in a geriatric community: (1) the flow of communication; (2) need, experience, perceived risk, and perceived error tolerance; and (3) shopping behavior variables (frequency of shopping, number of stores shopped, frequency of shopping with others, and use of special offer coupons), and demographic attributes.[1]

Problem

This dissertation focused on the consumer behavior of the elderly. The literature of adoption and diffusion served as the theoretical, or conceptual, foundation for this study.

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[1]The research evidence available with regard to these sets of variables is reviewed in Chapters IV and V, and operationally defined for purposes of this study in Chapter VI.

An extensive review of published sources indicated that approximately 50 empirical adoption and/or diffusion studies, primarily of consumer goods, have been reported in the marketing literature.[2] None of these studies is concerned with the elderly consumer. Therefore, the present research project serves as a logical extension of this series of studies.

By focusing the present study on the elderly consumer, it was possible to compare the results generated here with the findings of other studies which have examined respondent groups composed of young housewives. For example, Johan Arndt's research,[3] which has been extensively reported in the marketing literature, examined a sample composed of wives of graduate students residing in university-operated housing. Arndt's sample is typical of the type examined;

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[2]Charles W. King reported that the seven papers presented at the Fall 1966 American Marketing Association's Conference represented a 28% increase in the number of studies of adoption and/or diffusion appearing in the marketing literature. This increase means that the number of marketing adoption and diffusion studies reached 25. See Charles W. King, "Adoption and Diffusion Research in Marketing: An Overview," in Raymond H. Haas (ed.), Science, Technology and Marketing (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1966), p. 677. Since 1966, there have been approximately another 20 studies reported, bringing the total to about 50.

[3]Most of Arndt's published articles are based on his paper, Word of Mouth Advertising: The Role of Product-Related Conversation in the Diffusion of A New Food Product. (Unpublished Doctoral Dissertation, Graduate School of Business Administration, Harvard University, 1966).

the majority of other studies employ wives of college students, college students themselves, members of panels, or housewives who are not yet 60.[4]

Going beyond the sources dealing specifically with the adoption of new products to the literature concerned with the elderly consumer per se, there is a small amount of available information. The literature is of three types.

First, the few empirical studies center around the analysis of census data.[5] None of these has as its objective the testing of behavioral science hypotheses.

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[4]See, for example: Donald F. Cox, "Risk Handling in Consumer Behavior - An Intensive Study of Two Cases," in Donald F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior. (Boston: Division of Research, Graduate School of Business, Harvard University, 1967), pp. 34-81; Ronald E. Frank, William F. Massy and Donald G. Morrison, "The Determinants of Innovative Behavior with Respect to a Branded, Frequently Purchased Food Product," in L. George Smith (ed.), Reflections on Progress in Marketing. (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1964), pp. 312-323; John G. Myers, "Patterns of Interpersonal Influence in the Adoption of New Products," in Raymond M. Haas (ed.), op. cit., pp. 750-757; Donald T. Popielarz, "An Exploration of Perceived Risk and Willingness to Try New Products," Journal of Marketing Research, Vol. 4, No. 4 (November, 1967), pp. 368-372; Thomas S. Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.) Changing Marketing Systems (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1967), pp. 328-332; and Jagdish N. Sheth, "Perceived Risk and Diffusion of Innovations," in Johan Arndt (ed.), Insights Into Consumer Behavior (Boston: Allyn and Bacon, Inc., 1968), pp. 173-188.

[5]See, for example: Sidney Goldstein, "The Aged Segment of the Market, 1950 and 1960," Journal of Marketing, Vol. 32, No. 2 (April, 1968), pp. 62-68; and John Reinecke, "The 'Older' Market - Fact or Fiction?" Journal of Marketing, Vol. 28, No. 4 (January, 1964), pp. 60-64.

The second category--popular marketing literature (including trade publications), does not really offer any additional assistance.[6] The articles on the elderly consumer tend to be normative and emotional. The popular material usually typecasts the elderly consumer into one or both of the following categories: (1) A general market segment - the elderly are not a special market for the majority of goods and services and, in fact, most elderly consumers would object to being considered or treated as a special market segment; and, (2) A special market segment - the elderly are a special market with many unfulfilled special needs, such as special foods, special medicines, special clothing, and special furniture.

The third, and final, source of material is government documents, particularly those issued by Federal offices. These tend to be concerned with a wide range of needs of the elderly, including their welfare as consumers.

Government sources, like journal and trade publications, do not offer any real insight into the consumer needs of the elderly. However, they do stress that a research vacuum does exist. For example, a review of Senatorial Subcommittee Hearings, dealing with the elderly consumer, provides the statements of two individuals who suggest the need for, and absence of, behavioral oriented consumer research devoted to the wants of the elderly.

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[6]For one of the better articles see "The Forgotten Generation," Forbes, Vol. 103, No. 2 (January 15, 1969), pp. 22-29.

The first are remarks of Columbia University Professor John Howard, a leading researcher in the area of consumer behavior. Professor Howard said " ... I recommend that in its exploration of the buying habits of the elderly, as a basis for establishing a social policy, the committee focus upon the tendencies of our older citizens to accept or to not accept new products."[7] In emphasizing the lack of behavioral knowledge, Professor Howard suggested, "It is important to know, for example, how many older folks there are in each age group, but this is not very useful information unless we know about the relationship between these people and whether they adopt new products."[8]

A more recent statement before the same subcommittee by Mrs. Virginia Knauer, Special Assistant to the President for Consumer Affairs, also suggests the need for consumer research with regard to the elderly. Mrs. Knauer said, "I believe there are still gaps in information about consumer behavior of the elderly. We need to know more about the psychology of the elderly consumer."[9] Mrs. Knauer further

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[7]Consumer Interests of the Elderly, Hearings before the Subcommittee on Consumer Interests of the Elderly, The Special Committee on Aging, United States Senate, 90th Congress, First session, Part I, Washington, D.C., January 17-18, 1967, p. 132.

[8]Ibid., p. 131.

[9]Economics of Aging: Toward a Full Share in Abundance, Hearings before the Subcommittee on Consumer Interests of the Elderly, The Special Committee on Aging, United States Senate, 91st Congress, First session, Part 2, Ann Arbor, Michigan, June 9, 1969, p. 344.

suggested, " ... there are, at least to my knowledge, no studies--psychological studies, perhaps--showing what the elderly consumer wants."[10]

The statements of these two individuals, with their diverse backgrounds, show that there exists a common interest and recognition of the need for behaviorally oriented knowledge about the elderly as consumers. It is such a need for more precise knowledge which motivated the present research effort.

The selection of the elderly consumer as a subject group was not therefore designed solely to fill the "demographic vacuum" existing in the research literature dealing with the adoption of new products. Rather, the study was viewed as an opportunity to develop and test theoretically based hypotheses with regard to the behavior of the elderly as consumers.

Questions and Results Examined

Based upon the above discussion, the following have been explored in this study:

1. Are elderly consumers who try a new product exposed to a different mixture of sources of conversation than elderly consumers who do not try? Does the mixture of conversation employed by elderly new product triers differ from those used

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[10] Op. cit., p. 347.

by younger new product triers, as reported by other researchers? Are there qualitative or quantitative differences in exposure which would suggest that the elderly are either informationally advantaged or disadvantaged, as compared with other age segments?

2. Do elderly new product triers have a different level of perceived risk than elderly consumers who do not try? Do elderly consumers have a different perception of risk, with regard to new products, than younger consumers? Does the elderly new product trier have a different type of perceived error tolerance than the elderly consumer who does not try?

3. Also, those elderly consumers who try, and those who do not try, have been compared with regard to opinion leadership, social interaction, various need, experience, shopping variables, and a small group of demographic attributes. In addition, these results have been compared with studies of younger consumers.

Scope

Since control of two of the principal variables (impact of the web of informal word of mouth conversation and opinion leadership) required a self-contained socially integrated housing community, the field experiment has been limited to respondents residing in a single housing

community located in Queens, New York. The specific community studied is known as Kissena I; it is operated by a non-profit organization, Self-Help, Inc. Kissena I is a modern apartment type of dwelling, with over 130 units. Each apartment is equipped with a kitchen where the tenants prepare their own meals. The tenants are all Jewish retired couples, and widowed or single men and women. The average age of the tenants is 74 years.

These characteristics of the research design and population group mean that the results are not representative of elderly consumers in general. Although this is a definite limitation of the study, the in-depth information desired and the research design made any other approach impractical. Also, as mentioned earlier, almost all existing adoption studies of new consumer products have had to face the same problem. The existence of these other studies afforded this researcher the unique opportunity to compare present findings with existing research, and thereby expand the boundary another step in the direction of greater generalization.

A new salt substitute, which at the time of the field experiment was not yet distributed or promoted in the geographic area in which the community studied is located, served as the dependent variable. The specific appeal of this product is the market knowledge that elderly consumers are the most likely market segment to have to restrict their intake of regular salt.

Importance

This research study has, hopefully, added to the existing state of knowledge with regard to the adoption of new products in the following ways:

1. It represents the first examination of elderly consumers' willingness to try new products.

2. It represents an extension of the literature dealing with adoption and/or diffusion of new consumer products, since all previous studies examined younger groups of housewives.

3. In keeping with the above points, the research has generated insight into the product related conversation, the need, the experience, the perceived risk, the perceived error tolerance, and shopping characteristics of the elderly consumer, another as yet unexplored area.

4. In terms of the food producer and retailer, the results of this and future research may suggest appropriate ways of relating product, service, and promotional practices to needs of the elderly consumer. For example, the desirability of making certain perishable food items, such as cheeses, available in smaller quantities which better suit the needs of the elderly; or the establishment of special shopping hours, during which time the elderly can use the quick service check-out counter, thus making waits on long lines a less frequent occurrence. In effect, improving producers' and retailers' knowledge of this market group may enable more accurate market segmentation.

Organization of the Remainder of the Dissertation

Chapter II sets forth a diffusion/adoption paradigm which serves as the basis for reviewing relevant diffusion and adoption literature. The chapter also includes a review of the diffusion literature.

Chapters III through V continue the literature review started in Chapter II. They encompass adoption literature and the related behavioral variables.

Chapter VI is concerned with a description of the research model, definition of behavioral variables, statement of hypotheses, and specification of the research design employed in carrying out the field experiment.

Chapters VII and VIII present the research findings of the field experiment.

Finally, Chapter IX serves as a point of summary and recommendation based on the research findings.

CHAPTER II

DIFFUSION: LITERATURE REVIEW

This chapter and the three immediately following are devoted to a review of diffusion and adoption literature. The four chapters serve as a foundation for the research results to be examined in later chapters.

In this chapter a diffusion/adoption paradigm is presented and discussed. The paradigm has, hopefully, made for a more meaningful and organized examination of available research. It serves as an overall conceptualization of several interrelated areas of research. In addition to setting forth the paradigm, the present chapter examines pertinent aspects of diffusion.

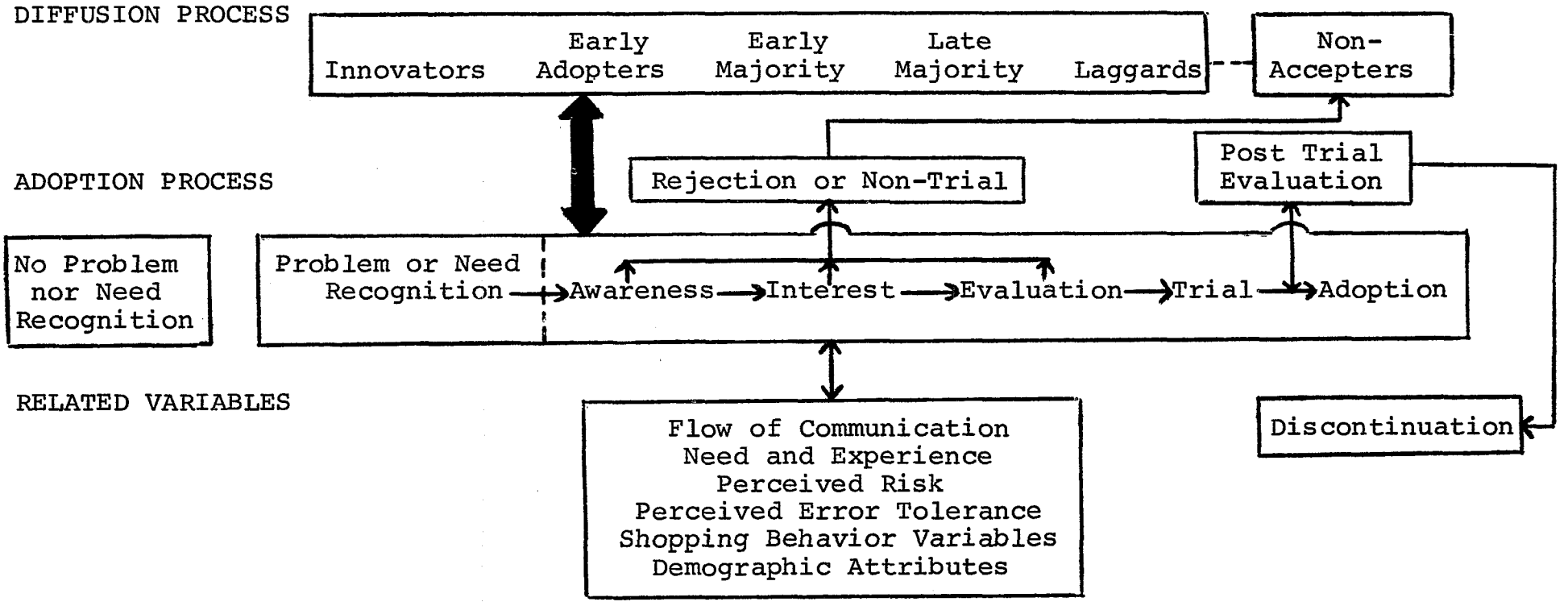
The composition of the diffusion/adoption paradigm is considered first.

Diffusion/Adoption Paradigm

In order to organize the available research literature, the writer has developed a diffusion/adoption paradigm, presented in Figure 1. The paradigm has three main phases:

FIGURE I

A PARADIGM OF THE INTERACTION OF THE DIFFUSION PROCESS, THE ADOPTION PROCESS AND RELATED VARIABLES



1. The Diffusion Process
2. The Adoption Process
3. Related Variables

The diffusion process is concerned with " ... the spread of a new idea from its sources of invention or creation to its ultimate users or adopters."[1] Diffusion is concerned with the sequential stages of aggregate acceptance over time of a new idea or product. As represented in the paradigm in Figure 1, the diffusion of an idea, technique, service, or product passes through five "adopter categories" or stages: (1) Innovators, (2) Early Adopters, (3) Early Majority, (4) Late Majority, and (5) Laggards.[2] Each category represents a progressively later sub-group of adopters. The diffusion phase also includes non-accepters; that is, a sub-group of a social system who never become adopters, and therefore are beyond inclusion in any of the diffusion stages.[3]

The adoption process principally represents the stages an individual passes through in making a decision to accept or not accept a new product. While diffusion is primarily an aggregate process, adoption is an individual process. In the case of the adoption process, the individual's decision is

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[1]Everett M. Rogers, Diffusion of Innovations (New York: The Free Press, Inc., 1962), p. 13.

[2]Ibid., pp. 168-171.

[3]Thomas S. Robertson, "The Process of Innovation and Diffusion of Innovation," Journal of Marketing, Vol. 31, No. 1 January, 1967), p. 17.

the unit of analysis. Adoption is depicted as a mental process with five main stages: (1) Awareness, (2) Interest, (3) Evaluation, (4) Trial, and (5) Adoption.[4] Although the adoption process has been depicted as a mental process, it is clear that "trial" and "adoption" include various forms of overt information, product and retail search behavior which go beyond mental activities. In this sense, the rural sociological view of the adoption process as strictly a mental one seems inaccurate. Also, in addition to the five main stages, other researchers have suggested adding "problem" or "need recognition" and "post-trial evaluation.[5]

As represented in the diffusion/adoption paradigm, after an individual becomes aware of a new product, or after manifesting interest or evaluation, the individual may decide to reject the product, thus becoming a non-accepter at the diffusion phase of the paradigm. By definition, at the adoption phase, if an individual does not reject a product before or at the conclusion of the evaluation stage, he will try the product. After trial the individual will again evaluate the product. This post-trial evaluation can for many new products be related to relevant cognitive dissonance research. The post-trial evaluation will be resolved in either

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[4]Rogers, op. cit., pp. 81-86.

[5]For example, see Thomas S. Robertson, "A Critical Examination of 'Adoption Process' Models of Consumer Behavior," a paper presented at the Third Annual Buyer Behavior Conference (New York: Columbia University, 1969), 42 pp.

adoption or discontinuation of the product. It should also be noted that even after adoption and use of the product, a decision may eventually be made to discontinue its use.

The bold arrow linking the diffusion and adoption processes suggests two phenomena: (1) As an individual accepts a product diffusion occurs, and (2) The level of diffusion of a product partially affects additional individuals' decisions to adopt the product.[6]

Related variables are the third factors in the diffusion/adoption and contain the key behavioral variables, which have been examined within the context of the adoption process. The variables identified in the paradigm, to be examined in Chapters IV and V, may not be a totally exhaustive list with regard to the adoption process. However, they include those variables which are most frequently reported in both the general adoption/diffusion literature and the marketing literature dealing with the adoption and diffusion processes.[7]

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[6]These and other relationships between the adoption and diffusion processes are discussed in Chapter III.

[7]See, for example Donald F. Cox, "Risk Handling in Consumer Behavior - An Intensive Study of Two cases," in Donald F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior (Boston: Division of Research, Graduate School of Business, Harvard University, 1967), pp. 34-81; Donald T. Popielarz, "An Exploration of Perceived Risk and Willingness to Try New Products," Journal of Marketing Research, Vol. 4, No. 4 (November, 1967), pp. 368-372; and Thomas Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.) Changing Marketing Systems (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1967) pp. 328-332.

As the paradigm suggests, the related variables have their impact on individual adoption. In turn, the rate of adoption suggests the composition of the diffusion process.

As it seems necessary throughout this dissertation, reference will be made to the various elements of this paradigm. The remainder of this chapter will be devoted to an examination of the diffusion process; its various stages; the social, economic and psychological characteristics of those members of a social system who accept a product at each of the adopter stages; and a review of pertinent marketing diffusion literature.

The Diffusion Process

The study of diffusion has been influenced by a variety of disciplines. The present state of diffusion research has its earliest roots in anthropology and rural sociology.[8] Other disciplines such as technological forecasting, educational sociology, organizational theory, and psychology have studied aspects of diffusion and adoption.[9]

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[8]Elihu Katz, Martin L. Levin and Herbert Hamilton, "Traditions of Research on the Diffusion of Innovation," American Sociological Review, Vol. 28, No. 2 (April, 1963), pp. 238-240; and Rogers, op. cit., pp. 24-39.

[9]The contribution of these various disciplines is reviewed at the end of Chapter III.

Until about ten years ago these various disciplines were establishing separate "traditions" of diffusion research with little, if any, interchange.[10] The beginning of a change occurred in 1962 when Rogers's comprehensive review of diffusion research was established.[11] The frequency with which this book is cited in recent diffusion literature indicates that it has gone a long way in aiding the "diffusion of diffusion."

What is Diffusion? In the most general terms, diffusion is the process by which adoption of an innovation is spread over time via channels of communication to members of a social system.[12] This definition includes the following basic elements:

1. The Innovation
2. The Dimension of Time
3. The Channels of Communication
4. The Social System

Each of these four elements will be considered, in turn, below.

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[10]Rogers, op. cit., pp. 21-22.

[11]Ibid.

[12]This definition is in keeping with: Elihu Katz, "The Social Itinerary of Technical Change: Two Studies of the Diffusion of Innovation," Human Organization, Vol. 22, No. 2 (Summer, 1961), p. 70; and Rogers, op. cit., p. 12.

The Innovation

Within the context of marketing, the terms "product innovation" or "service innovation" seem more appropriate than the more general term "innovation".[13] Limiting the discussion to product or service innovation, however, does not make this element of diffusion any easier to nail down. The various aspects of product innovation which will be considered below will, hopefully, clarify some of the confusion with regard to this complex, but basic element of diffusion.

What is Innovation? Notwithstanding the difficulty of defining innovation, two closely related definitions of product innovation have been offered in the marketing diffusion literature, namely:

1. Innovation is any product or service which is perceived as "new" by the potential consumer.[14]

2. Innovation is any product or service which is perceived as "new" by the potential consumer and has not been purchased by more than some small fixed percentage of the social system of market segment.[15]

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[13]"Product Innovation" is used instead of "innovation" by John A. Howard and Jagdish N. Sheth, The Theory of Buyer Behavior (New York: John Wiley and Sons, Inc., 1969) pp. 277-330.

[14]Similar definitions have previously been used by Rogers, op. cit., p. 13; Howard and Sheth, op. cit., p. 277; and James F. Engel, Roger D. Blackwell and Robert Kegerreis, "Consumer Use of Information in the Adoption of an Innovation," Journal of Advertising Research, Vol. 9, No. 4 (December, 1969), p. 4.

[15]William E. Bell, "Consumer Innovators: A Unique Market for Newness," in Stephen A. Greyser (ed.), Toward Scientific Marketing (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1963), p. 86.

Both of these operational definitions of innovation are subjective. They are based on the consumer's perception of what is "new" to him; rather than on the physical characteristics or intensity of innovation inherent in the product. The second definition adds the requirement that no more than some small fixed percentage of sales penetration have been attained at the time of the study. Such percentages as "zero" and 10% have been used in various studies.[16]

Product Innovation Frameworks. A variety of "innovation frameworks" have been suggested by marketing scholars. For example: (1) the classification of major, normal and minor innovation as relates to the extent of problem solving;[17] (2) the novelty of the innovation as relates to change in individual or group behavior;[18] and (3) the categorization of continuous, dynamic continuous, and discontinuous innovation as relates to the degree of disruption of established patterns.[19] These three innovation frameworks are quite similar. They emphasize the impact of intensity of innovation on consumer decision making. Also, each of the three

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[16]Johan Arndt, Word of Mouth Advertising: The Role of Product-Related Conversation in the Diffusion of A New Food Product. (Unpublished Doctoral Dissertation, Graduate School of Business Administration, Harvard University, 1966), studied the acceptance of a product which was not on the market and therefore had a "zero" percent market share; Bell, op. cit., used 10% or less market share as his criterion for "innovators."

[17]Howard and Sheth, op. cit., p. 280.

[18]Wroe Alderson, Dynamic Marketing Behavior (Homewood, Ill.: Richard D. Irwin, Inc., 1965), pp. 144-163.

[19]Robertson, op. cit., pp. 15-16.

frameworks seem to have the common failing of not really supplying the quantitative vehicle necessary to measure or map differences in intensity of innovation between two products or services, within a given product or service class.

Characteristics of Product Innovation. Five characteristics or attributes inherent in or closely related to a "physical" innovation, which may affect the rate at which a product or service is accepted by members of a social system, have been suggested by Rogers:[20] (1) relative advantage, (2) compatibility, (3) complexity, (4) divisibility, and (5) communicability.[21]

Relative advantage is the degree to which the potential customers perceive a product innovation as being superior to existing substitutes.[22] For example, the fact that Crest toothpaste was the first to receive and promote the endorsement of the American Dental Association can be conceived of as relative advantage.[23]

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[20]Rogers, op. cit., pp. 124-134.

[21]With regard to industrial products, such additional aspects of relative advantage as: "profitability" and "cost of change" may be useful; see: Frederick E. Webster, Jr., Diffusion of Innovations: A Literature Review with Special Reference to Industrial Markets; unpublished paper (Hanover, N.H.: Amos Tuck School of Business Administration, Dartmouth College, September 1967), pp. 9-11.

[22]Rogers, op. cit., p. 124.

[23]David B. Montgomery and J. Scott Armstrong, "Consumer Response to a Legitimate Brand Appeal," in Johan Arndt (ed.) Insights Into Consumer Behavior (Boston: Allyn and Bacon, Inc., 1968), pp. 151-172.

Such an endorsement can also be viewed in terms of marketing strategy as product differentiation. Alderson has defined product differentiation as " ... a change in a product which is perceived by the consumer as a real change, and which is deliberately undertaken to make the product different from others in the same use group."[24] Viewed within the context of Alderson's definition, product differentiation is quite similar to relative advantage. They differ insofar as relative advantage is conceived of as a perception of the potential consumer; while product differentiation is a planned, or calculated, act carried out by the marketer to bring about a positive change in customer perception. However, both concepts include the requirement that the customer perceive the product difference.

Alderson has suggested that physical product differentiation takes several forms. These forms seem applicable to relative advantage within its context of diffusion research; they are: (1) actual changes in the product, (2) patented features, (3) trademarks and trade names, (4) packaging and container qualities, (5) degree of quality control, and (6) degree of availability of the product.[25] The bond between product differentiation and relative advantage is the acceptance or perception of these various forms of product differences by the consumer.

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[24]Alderson, op. cit., pp. 195-196.

[25]Ibid., pp. 192-193.

Compatibility is the degree to which the potential consumers perceive a product innovation as consistent with present values and practices.[26] Sheth,[27] in his study of the diffusion of stainless steel blades among university students, found that those students who reported shaving daily (heavy users) were quicker to buy the product. His study suggests that a new product's compatibility with existing need and experience relates to the rate of diffusion. Rogers,[28] in reviewing a group of diffusion studies concludes, " ... compatibility of a new idea, as perceived by members of a social system, affects its rate of adoption." This component of product innovation has not as yet received systematic consideration in marketing diffusion studies.

Complexity is the degree to which a product innovation is difficult to comprehend and/or use.[29] This aspect of product innovation has received little research attention and existing results are far from clear.[30]

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[26]Rogers, op. cit., pp. 126-127.

[27]Jagdish N. Sheth, "Perceived Risk and Diffusion of Innovation," in Johan Arndt (ed.), op. cit., p. 188.

[28]Rogers, op. cit., p. 127.

[29]Ibid., p. 130.

[30]Ibid.

Divisibility is the degree to which a product innovation is capable of being tried by consumers on a limited basis.[31] The inherent qualities of a product like a new candy bar make it relatively easy to try it on a limited basis. On the other hand, a product like a new dishwasher is usually impossible to try out. It would seem as a general rule that frequently purchased household goods tend to have qualities which make trial relatively easy, while durable items, such as major or minor appliances, are difficult, or impossible, to try before a major commitment.[32] The observation that consumer publications like Consumer Reports emphasize the rating of products not easily tried out, tends to confirm the importance of this factor for certain product classes.[33]

Communicability is the ease with which a product innovation's benefits or attributes can be observed, imagined, or described to potential customers.[34] Products which have a high degree of social visibility, such as fashion items, are more easily diffused than products which are used in private, such as a new denture cleaner. Likewise, a tangible

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[31]Rogers, op. cit., pp. 131-132.

[32]The concept of perceived risk, to be discussed in the next chapter, may interact with divisibility.

[33]The related dimension of reversibility -- " ... how readily the innovation can be discontinued without disruption," is suggested by Thomas S. Robertson, Innovation and the Consumer (New York: Holt, Rinehart and Winston, Inc., forthcoming) p. (2-25).

[34]Rogers, op. cit., p. 132.

product is more easily communicated than an intangible service. This factor may partially explain the relative difficulty of marketing an intangible such as life insurance. As an indication of how communicability may be inherent in a product innovation, and interact with relative advantage, it was reported in an early diffusion study of hybrid seed corn that farmers who were not initial adopters of the product may have been aided by observing the results of those who already used the product.[35]

Rogers and Stanfield[36] have reviewed the findings of those agricultural diffusion studies which examine one or more of the five characteristics of innovation. They reported that the following relationships predominate between each characteristic and acceptance of an innovation.[37]

Positive Relationship
Relative Advantage (79% of the studies)
Compatibility (86%)
Communicability (75%)

Negative Relationship
Complexity (44%)

No Clear Relationship
Divisibility (43% positive and
43% no relationship)

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[35]Bruce Ryan and Neal Gross, "The Diffusion of Hybrid Seed Corn in Two Iowa Communities," Rural Sociology, Vol. 8, No. 1 (March, 1943), pp. 15-24.

[36]Everett M. Rogers and J. David Stanfield, "Adoption and Diffusion of New Products: Emerging Generalizations and Hypotheses," in Frank M. Bass, et. al. (ed.), Application of the Sciences in Marketing Management (New York: John Wiley and Sons, Inc., 1968), p. 243.

[37]Ibid.

Ostlund[38] has reported the only specific marketing study of the five characteristics of product innovation. He found that relative advantage, compatibility, divisibility, and communicability were positively related, while complexity was negatively related to perceived willingness to buy.[39] These results are in keeping with the summary of agricultural results considered above. However, further investigations of these characteristics of product innovation seem necessary; particularly, studies which are based on actual buyer behavior, rather than some perceived measure of willingness to buy.[40]

The Dimension of Time

Although this element of the diffusion process does not lend itself to extensive discussion, it is the backbone of diffusion research. Time is employed by diffusion researchers as a means of defining and identifying to which category an adopter of a new product belongs. For example, the earliest group of adopters are "innovators," and the last group are "laggards."[41] Unfortunately, time has been

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[38]Lyman E. Ostlund, "The Role of Product Perceptions in Innovative Behavior," in Philip R. McDonald (ed.), Marketing Involvement in Society and the Economy (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1969), pp. 259-266.

[39]Ibid., pp. 262-265.

[40]Oslund asked his respondents to estimate how likely they were to buy products soon after they were available, Ibid., p. 262.

[41]Rogers, op. cit., p. 19.

subjectively defined in diffusion research. No fixed guidelines have been employed to distinguish between "early" and "later" adopters. As will be demonstrated in a later section of this chapter, researchers have "intuitively" selected time measures for their individual diffusion studies.

The Channels of Communication

How acceptance spreads is generally held to be primarily a function of communication. Both mass and interpersonal communication may serve to identify and/or influence the acceptance of a product innovation. Within the tradition of rural sociology, the essence of diffusion is interpersonal communication;[42] while, until recently, the emphasis in marketing has been on the practice of mass communication.[43]

According to Rogers[44] the importance of information sources vary with the adopter categories. Rogers has gleaned three generalizations with regard to communication and adopter categories from the available literature:[45]

1. Impersonal sources of information are more important than personal sources for relatively earlier adopters of innovations than for later adopters.

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[42]Rogers, op.cit., p. 13

[43]Elihu Katz, Martin L. Levin and Herbert Hamilton, op.cit., p. 245.

[44]Rogers, op.cit., p. 14.

[45]Ibid., pp. 179-181.

2. Earlier adopters utilize information sources that are in closer contact with the origin of new ideas than later adopters.

3. Earlier adopters utilize a greater number of different information sources than do later adopters.

Communication and the Interaction Effect

Rogers emphasizes the importance of an interaction effect on diffusion.[46] The interaction effect suggests that through experience of interpersonal communication and observation later adopters are influenced by earlier adopters. The more the interaction, the faster the spread of the product innovation. Studies reported by Ryan and Gross,[47] Coleman, Katz and Mendel,[48] Arndt,[49] and Bass[50] all suggest the logic of the interaction effect.

The Social System

Acceptance of a product innovation usually takes place in a social setting. Katz[51] refers to this setting as a

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[46]Rogers, op. cit., pp. 138-142.

[47]Ryan and Gross, op. cit., p. 16.

[48]James Coleman, Elihu Katz and Herbert Menzel, "The Diffusion of an Innovation Among Physicians," Sociometry, Vol. 20, No. 4 (December, 1957), pp. 253-270.

[49]Arndt, op. cit., pp. 50-65.

[50]Frank M. Bass, "A New Product Growth Model for Consumer Durables," Management Science, Vol. 15, No. 5, (January, 1969) pp. 215-227.

[51]Katz, op. cit., pp. 72-73.

social structure; while Rogers[52] calls it a social system. For consistency with most marketing diffusion studies, the term social system will be used here. Rogers[53] defines a social system as " ... a population of individuals who are functionally differentiated and engaged in collective problem-solving." Within the framework of marketing the idea of a market segment has frequently been used to describe a homogenous group of people in much the same way as a social system has been used in diffusion studies.[54]

The social system serves as a boundary in which much, if not all, communication takes place. If the norm of a social system is traditional, the acceptance of a product innovation may be discouraged; while if the norm is modern, the acceptance of a product innovation would generally be encouraged.[55]

For the diffusion researcher the social system serves as the boundary within which the diffusion of a product

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[52] Rogers, op. cit., p. 14.

[53] Ibid.

[54] See Wendell R. Smith, "Product Differentiation and Market Segmentation as Alternative Marketing Strategies," Journal of Marketing, Vol. 21, No. 1 (July, 1956), pp. 3-8; and Daniel Yankelovich, "New Criteria for Market Segmentation," Harvard Business Review, Vol. 42, No. 2 (March-April, 1964), pp. 83-90.

[55] Rogers, op. cit., p. 16.

is studied.[56] For example, in the Ryan and Gross[57] study of hybrid seed corn, the social system was limited to all farmers in two Midwestern farming communities; and in the Coleman, Katz and Menzel[58] medical sociology study, the social system was defined as all medical doctors in each of four cities in the Midwest.

Marketing Studies of the Diffusion Process. The marketing diffusion literature has been reviewed to determine how the four elements of the diffusion process have been defined and measured. Only those studies which include the results of empirical research and identify most of the elements of the diffusion process were selected for examination. In all, only ten studies were identified as meeting these two criteria. Table I presents the results of the literature search in summary form, and an examination of these ten studies suggests the following characteristics in marketing diffusion research:

1. The majority of diffusion studies are concerned with consumer food and durable product innovations.

2. Time varies greatly from study to study; there is no uniformity among studies with regard to the time dimension.

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[56] Katz, op. cit., pp. 72-73.

[57] Ryan and Gross, op. cit., pp. 16-17.

[58] James Coleman, Elihu Katz and Herbert Menzel, op. cit., pp. 253-270.

TABLE I

BASIC ELEMENTS OF THE DIFFUSION PROCESS AS REPORTED IN THE MARKETING LITERATURE

1. Allvine[a]

The Innovation	-	Games introduced by supermarket chains.
Time	-	Weekly records of chains that used games.
Communication	-	Chain store management reported sources of influence.
Social System	-	Three definitions were used: (1) chains within a market, (2) operating divisions within multiple market chains, and (3) between market comparison of chains.

2. Arndt[b]

The Innovation	-	A new brand of regular coffee.
Time	-	A 16-day period.
Communication	-	Sociometric and reported by respondents.
Social System	-	Wives of graduate students living in university-operated housing.

[a]Fred C. Allvine, "Diffusion of a Competitive Innovation," in Robert L. King (ed.), Marketing and the New Science of Planning (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1968) pp. 341-351.

[b]Johan Arndt, Word of Mouth Advertising: The Role of Product Related Conversation in the Diffusion of A New Food Product. (Unpublished Doctoral Dissertation, Graduate School of Business Administration, Harvard University, 1966), pp. 32-46.

Table I (continued)

3. Arndt[c]

The Innovation	-	The first showing in New York City of the movie "In Cold Blood."
Time	-	Opening night, the fourth night, and the sixth night.
Communication	-	Respondents reported sources of influence.
Social System	-	Those on line to see the movie each of the three nights.

4. Bell[d]

The Innovation	-	Color television, stereophonic equipment, dishwashers and air conditioners.
Time	-	Time was defined in terms of percentage of adopters. For example, first 10% were "innovators."
Communication	-	Respondents reported sources of influence.
Social System	-	Households in the Detroit metropolitan area (quota sample).

[c]Johan Arndt, "A Cold-Blooded Analysis of Movie-Going as a Diffusion Process," Markedsokonomic (March, 1969), pp. 59-64.

[d]William E. Bell, "Consumer Innovators: A Unique Market for Newness," in Stephen A. Greyser (ed.), Toward Scientific Marketing (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1963), pp. 85-87.

Table I (continued)

5. Frank, Massy and Morrison[e]

The Innovation	-	A brand of regular coffee.
Time	-	Three years of panel data (including a 32 week period during introduction).
Communication	-	Not reported.
Social System	-	Families who were members of the Chicago Tribune Panel.

6. Gorman and Moore[f]

The Innovation	-	Color television
Time	-	Not specified.
Communication	-	Respondents reported sources of influence.
Social System	-	Households in the Tuscaloosa, Alabama area.

[e]Ronald E. Frank, William F. Massy and Donald G. Morrison, "The Determinants of Innovative Behavior with Respect to a Branded, Frequently Purchased Food Product," in L. George Smith (ed.), Reflections on Progress in Marketing (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1964, pp. 312-323; and Ronald E. Frank and William F. Massey, "Innovation and Brand Choice; The Folger's Invasion," in Stephen A. Greyser (ed.) op. cit., pp. 96-107.

[f]Walter P. Gorman and Charles T. Moore, "The Early Diffusion of Color Television Receivers into a Fringe Area Market," Journal of Retailing, Vol. 44, No. 3 (Fall, 1968), pp. 46-56.

Table I (continued)

7. Kegerreis and Engel[g]

The Innovation	-	An automotive diagnostic center.
Time	-	A three-month period after the opening of the center.
Communication	-	Respondents reported sources of influence.
Social System	-	Users of the center which is located in Columbus, Ohio and a random sample of non-adopters who own automobiles.

[g]Robert J. Kegerreis and James F. Engel, "The Innovative Consumer: Characteristics of the Earliest Adopters of A New Automotive Service," in Philip R. McDonald (ed.), Marketing Involvement in Society and the Economy (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1969), pp. 357-361; James F. Engel, Roger D. Blackwell and Robert J. Kegerreis, "Consumer Use of Information in the Adoption of an Innovation," Journal of Advertising Research, Vol. 9, No. 4 (December, 1969), pp. 3-8; and James F. Engel, Robert J. Kegerreis and Roger D. Blackwell, Journal of Marketing, Vol. 33, No. 3, (July, 1969), pp. 15-19.

Table I (continued)

8. King[h]

The Innovation	-	Fashion millinery.
Time	-	August through mid-January.
Communication	-	Respondents reported sources of influence.
Social System	-	A sample of names taken from the Metropolitan Boston Telephone Directory.

9. Robertson[i]

The Innovation	-	The Touch-Tone telephone.
Time	-	Time was defined in terms of percentage of adopters. For example, first 10% were "innovators."
Communication	-	Respondents reported sources of influence.
Social System	-	A middle class Chicago suburban township.

[h]Charles W. King, "Fashion Adoption: A Rebuttal to the 'Trickle Down' Theory," in Stephen A. Greyser (ed.), op.cit., pp. 108-125; "Communicating with the Innovator in the Fashion Adoption Process," in Peter D. Bennett (ed.), Marketing and Economic Development (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1965), pp. 425-439; and "The Innovator in the Fashion Adoption Process," in L. George Smith (ed.), op.cit., pp. 324-339.

[i]Thomas S. Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.), Changing Marketing Systems (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1967), pp. 328-332.

Table I (continued)

10. Sheth[j]

The Innovation	-	Stainless steel shaving blades.
Time	-	Based on recall of first use.
Communication	-	Respondents reported sources of influence.
Social System	-	Male students on two college campuses.

[j]Jagdish N. Sheth, "Perceived Risk and Diffusion of Innovations," in Johan Arndt (ed.), Insights Into Consumer Behavior (Boston: Allyn and Bacon, Inc., 1968), pp. 173-188.

3. The sources of communication which influence the adoption decision are self-reported by the respondents in all of the studies, except Arndt's study of a new brand of regular coffee, where a sociometric approach is employed to measure word-of-mouth conversation.

4. In almost all studies, the social system is composed of households within a designated geographic area.

In this section the four basic elements of the diffusion process, and marketing illustrations of these elements, have been considered; in the next section the adopter categories of the diffusion process will be reviewed.

Adopter Categories of the Diffusion Process

In the beginning of this chapter a diffusion/adoption paradigm was presented (see Figure I). The diffusion level of this paradigm included the following five adopter categories: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. It will be recalled that each of the adopter categories represents a progressively slower group to accept a product innovation. These five categories were originally suggested by Rogers as a means of combatting the lack of standardization in terminology which existed in the diffusion literature.[59]

Rogers suggests the following "ideal types" with regard to the five categories:[60]

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[59] Rogers, op. cit., p. 149

[60] Ibid., p. 185.

1. Innovators
   "Venturesome" - willing to accept risks

2. Early Adopters
   "Respect" - regarded by many others in the social system as a role model.

3. Early Majority
   "Deliberate" - willing to consider innovations only after peers have adopted.

4. Late Majority
   "Skeptical" - overwhelming pressure from peers needed before adoption occurs.

5. Laggards
   "Tradition" - oriented to the past.

Rogers also suggested that the following percentages be used in defining the five adopter categories within a social system:[61]

1. The first 2 1/2% of a social system to adopt an innovation are the "innovators."

2. The next 13 1/2% of a social system to adopt an innovation are the "early adopters."

3. The next 34% of a social system to adopt an innovation are the "early majority."

4. The next 34% of a social system to adopt an innovation are the "late majority."

5. Finally, the last 16% of a social system to adopt an innovation are the "laggards."

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[61] Rogers, op. cit., p. 162

In so defining adoption categories, they appear to take on the characteristics of the normal distribution.[62] The relationship is depicted in Figure II. The applicability of the normal distribution is based upon the rural sociological assumption that 100 percent of the members of the social system under study will accept, or have accepted, the product innovation.[63] This assumption is not in keeping with market experience, for two reasons: (1) a product will not generally fit the needs of all potential customers, and (2) there are usually several firms offering competing brands within a given product category, sharing the market for the product innovation. For this reason the diffusion process phase of the diffusion/adoption paradigm (see Figure I) includes the additional category of "non-accepters." This stage is added because it depicts a reality of the marketplace; namely, that not all potential consumers will either try or adopt a product innovation.

Adopter Categories and Marketing Diffusion Studies

An examination of the adopter categories employed in ten marketing diffusion studies, summarized in the preceding

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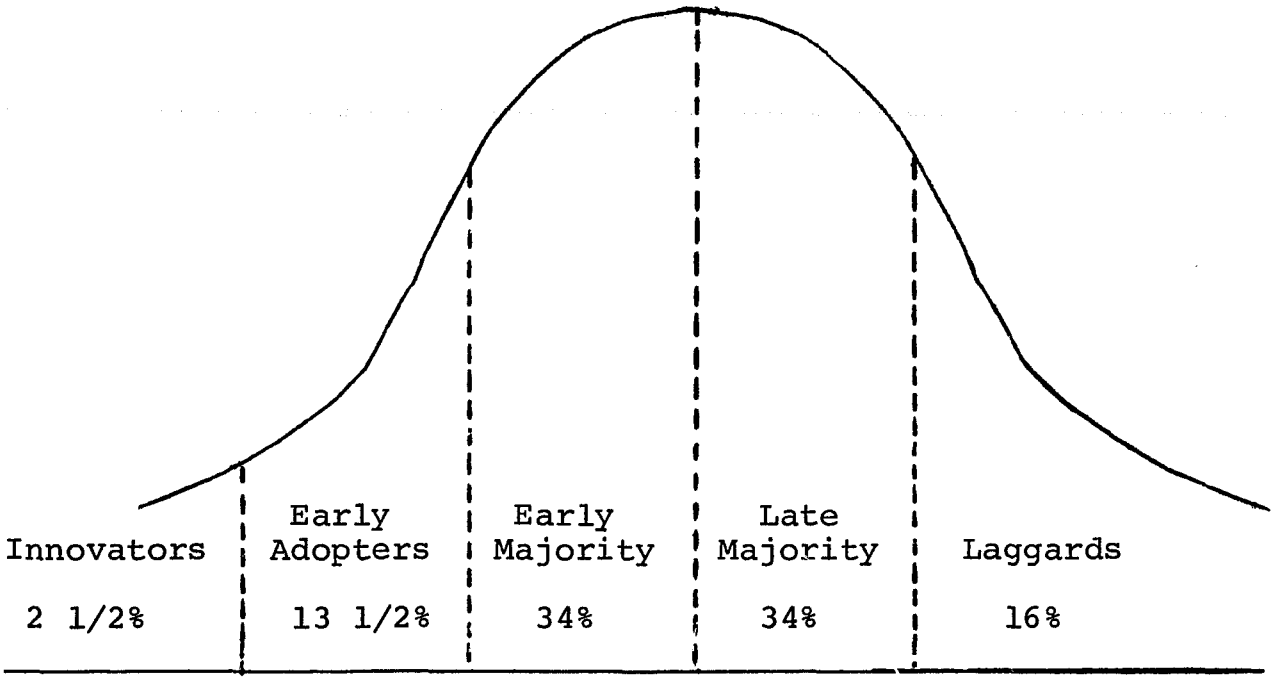
[62]Rogers' depiction of the time-shape of the non-cumulative adopter categories is similar to how the product life cycle has been presented in the marketing literature. See: Howard and Sheth, op. cit., pp. 280-281; and Robertson, Innovation and the Consumer, op. cit., pp. (2-2) - (2-7), for a discussion of relationship between the adopter stages of the diffusion process and the product life cycle.

[63]Rogers, op. cit., pp. 152-159; and Ryan and Gross, op. cit., pp. 21-23.

FIGURE II

THE ADOPTER CATEGORIZATION
AND
RELATIVE TIME OF ADOPTION



Source:

Everett M. Rogers, Diffusion of Innovations (New York: The Free Press, Inc., 1962), p. 162

section of this chapter, suggests that none uses the Rogers categorization. Table II presents the adopter categories used in marketing diffusion studies. The various categorizations used indicate that those doing marketing diffusion research favor a two or three stage categorization of adopters. It seems highly unlikely that the Rogers classification was not employed because of lack of knowledge of its existence, since almost all researchers cite the Rogers book in which the categorization is developed. None of the marketing diffusion studies suggests why they favor the one used, or why they did not employ Rogers. The only clear point is that the Rogers categorization has not been adopted by marketing diffusion researchers.

An examination of the content of Table II also indicates extensive differences in the definition of the various adopter categories in marketing diffusion studies. For example, "innovator" is defined in a variety of ways. This lack of standardization makes comparison between studies a particularly difficult studies.

In the future, as more diffusion research is reported in marketing literature, it may be possible to construct standard definitions by product class or some other common factor. However, to date there seems to be too little uniformity with regard to definition of adopter categories in marketing diffusion research.

TABLE II

ADOPTER CATEGORIES USED
IN MARKETING ADOPTER STUDIES

1. Allvine[a]

Early Adopters	-	The first two chains within a market area to use games for ten consecutive weeks, or two games during a six month period.
Late Adopters	-	All other adopters
Non-Adopters		

2. Arndt[b]

Pioneer	-	The first 12% (or first two days).
Early Adopters	-	The next 18% (or third to ninth days).
Late Adopters	-	The next 12% (or 10th to 16th days).

[a]Fred C. Allvine, "Diffu sion of A Competitive Innovation," in Robert L. King (ed.), Marketing and the New Science of Planning (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1968), p. 342.

[b]Johan Arndt, Word of Mouth Advertising: The Role of Product-Related Conversations in the Diffusion of A New Food Product (Unpublished Doctoral Dissertation, Graduate School of Business Administration, Harvard University, 1966), pp. 44-45.

TABLE II (CONTINUED)

3. Arndt[c]

Innovators	-	Those who attended a new movie opening night.
Early Attenders	-	Those who attended a new movie the fourth night.
Later Attenders	-	Those who attended a new movie the sixth night.

4. Bell[d]

Innovators	-	The first 10% to purchase one or more of a group of consumer durable products.
Early Adopters	-	The next 40% to purchase one or more of a group of consumer durable products.
Mass Market	-	The next 50%, or non-adopters.

[c]Johan Arndt, "A Cold Blooded Analysis of Movie-Going as A Diffusion Process," Markedsokonomic (March, 1969), p. 60.

[d]William E. Bell, "Consumer Innovators: A Unique Market for Newness, in Stephen A. Greyser (ed.), Toward Scientific Marketing (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1963), pp. 86-87.

TABLE II (CONTINUED)

5. Frank, Massy and Morrison[e]

Primary Adopters	-	Where the brand of regular coffee studied was the one most frequently purchased.
Secondary Adopters	-	Where the brand of coffee studied was next to the most frequently purchased.
Other Adopters	-	Not primary or secondary adopters but purchased the product at least once.

6. Gorman and Moore[f]

	-	Specific categories not itemized. It is indicated that a modification of Rogers' categorization to reflect the product life cycle of color television was used.

[e]Ronald E. Frank, William F. Massy and Donald G. Morrison, "The Determinants of Innovative Behavior with Respect to A Branded, Frequently Purchased Food Product," in L. George Smith (ed.), Reflections on Progress in Marketing (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1964), pp. 314-315.

[f]Walter P. Gorman and Charles T. Moore, "The Early Diffusion of Color Television Receivers Into A Fringe Area Market," Journal of Retailing, Vol. 44, No. 3 (Fall, 1968), p. 48.

TABLE II (CONTINUED)

7. Kegerreis and Engel[g]

Innovators	-	Anyone who used the automotive diagnostic center during the first three months of its operation.
Non-Adopters	-	A random sample from the same city.

8. King[h]

Early Buyers	-	Late August or September purchasers of a fashion millinery (representing the first 35%).
Late Buyers	-	October through mid-January purchasers of a fashion millinery (the last 65%).

[g]Robert J. Kegerreis and James F. Engel, "The Innovative Consumer: Characteristics of the Earliest Adopters of A New Automotive Service," in Philip R. McDonald (ed.), Marketing Involvement in Society and the Economy (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1969), pp. 357-358.

[h]Charles W. King, "The Innovator in the Fashion Adoption Process," in L. George Smith (ed.) op. cit. p. 330.

TABLE II (CONTINUED)

9. Robertson[i]		
	Innovators	- The first 10% of the community to adopt the Touch-Tone telephone.
	Non-Innovators	- Other members of the community.
10. Sheth[j]		
		- Adopter categories based on time of first use of a stainless steel shaving blade (from immediately to over 18 months after the product first became available.

[i]Thomas S. Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.), Changing Marketing Systems (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1967), p. 330.

[j]Jagdish N. Sheth, "Perceived Risk and Diffusion of Innovations," in Johan Arndt (ed.), Insights Into Consumer Behavior (Boston: Allyn and Bacon, Inc., 1968), p. 181.

Socio-Economic Characteristics of Adopters. Based upon the results of available rural sociological diffusion research, the following comparison between earlier and later adopters have been generated:[64]

1. Personal characteristics - Earlier adopters are younger, have higher social status, and better income than later adopters.

2. Communication behavior - (1) Impersonal sources of information are more important than personal sources of information for relatively early adopters of an innovation than for later adopters, (2) sources external to the social system are relatively more important for early adopters than for later adopters, (3) early adopters have more contact with the origin of a product innovation than do later adopters, and (4) early adopters use a greater number of different information sources than do later adopters. (They are more active than passive.)

3. Social relationships - Earlier adopters are more likely to be opinion leaders and are more cosmopolite than later adopters.

Table III presents the results of a review of marketing diffusion research in relation to the socio-economic characteristics of innovators and early adoption of product innovations.

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[64]Rogers, op. cit., pp. 172-184.

TABLE III

SOCIO-ECONOMIC CHARACTERISTICS OF ADOPTERS
BASED UPON MARKETING DIFFUSION STUDIES

	Personal Characteristics			Communication Behavior[a]	Social Relationships	
Marketing Researchers	Younger	Higher Social Status	Higher Income	More Impersonal Sources	More Opinion Leaders	More Cosmopolite
Arndt[b]	Yes	-	Yes	-	-	-
Bell[c]	Yes	Yes[d]	Yes	No	Yes	-
Kegerreis, et.al.[e]	Yes	Yes[d]	-	No	-	-
Robertson[f]	-	-	Yes	-	-	No
King[g]	No	-	-	-	No	-
Sheth[h]	-	-	-	No	-	-

[a]The extent of impact of "external sources," "closeness to origin of innovation," and "variety of sources" are not shown because they are not considered in any of the diffusion studies examined.

[b]Johan Arndt, "A Cold Blooded Analysis of Movie-Going as a Diffusion Process," Markedokonomic (March, 1969), p. 60.

TABLE III (CONTINUED)

[c]William E. Bell, "Consumer Innovators: A Unique Market for Newness," in Stephen A. Greyser (ed.), Toward Scientific Marketing (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1963), pp. 90-93.

[d]"Extent of Education" is used as a measure of "Higher Social Status."

[e]Robert J. Kegerreis and James F. Engel, "The Innovative Consumer: Characteristics of the Earliest Adopters of A New Automotive Service," in Philip R. McDonald (ed.), Marketing Involvement in Society and the Economy (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1969), pp. 357-358; and James F. Engel, Roger D. Blackwell and Robert J. Kegerreis, "Consumer Use of Information on the Adoption of An Innovation," Journal of Advertising Research, Vol. 9, No. 4 (December, 1969), p. 7.

[f]Thomas S. Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.), Changing Marketing Systems (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1967), pp. 330-331.

[g]Charles W. King, "Fashion Adoption: A Rebuttal to the "Trickle Down Theory," in Stephen A. Greyser (ed.) op. cit., p. 125; and "The Innovator in the Fashion Adoption Process," in L. George Smith (ed.), Reflections on Progress in Marketing (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1964), p. 336.

[h]Jagdish N. Sheth, "Perceived Risk and Diffusion of Innovations," in Johan Arndt (ed.), Insights Into Consumer Behavior (Boston: Allyn and Bacon, Inc., 1968), p. 185.

As Table III indicates, the findings of marketing diffusion studies are quite consistent with the generalizations developed from agricultural diffusion studies insofar as personal characteristics are concerned. However, in the case of communication behavior, the evidence from marketing studies does not agree with the agricultural diffusion generalization that impersonal sources are more important for earlier adopters than for later adopters. The marketing evidence concerning opinion leadership and social orientation is too meagre, and the results are mixed. Basically, the number of marketing diffusion studies is far too few to place much reliance on their findings. Before any conclusions can adequately be generated, there will have to be a substantial increase in the inventory of marketing diffusion research.

Conclusion

In this chapter a diffusion/adoption paradigm was presented. The first phase of the paradigm, the diffusion process, with its various elements, adopter categories, and results of marketing studies were examined. In the next three chapters the two other phases of the paradigm are considered.

CHAPTER III

THE ADOPTION PROCESS: LITERATURE REVIEW

In this chapter the review of the diffusion/adoption paradigm started in the last chapter is continued. Principal attention is focused on the composition of the adoption process.

Figure III presents "the adoption process phase" of the diffusion/adoption paradigm. Looking at Figure III, it will be recalled from the introductory remarks in the last chapter that the adoption process is a progression of mental stages through which an individual passes in arriving at a decision to (1) try, (2) not to try, or (3) continue or discontinue using a product innovation.[1]

The following specific aspects of the adoption process are examined in this chapter: (1) the relationship between the adoption and diffusion processes, (2) the stages of the adoption process, (3) criticisms of the basic rural sociological adoption process, (4) marketing "persuasion models," and (5) other marketing models.

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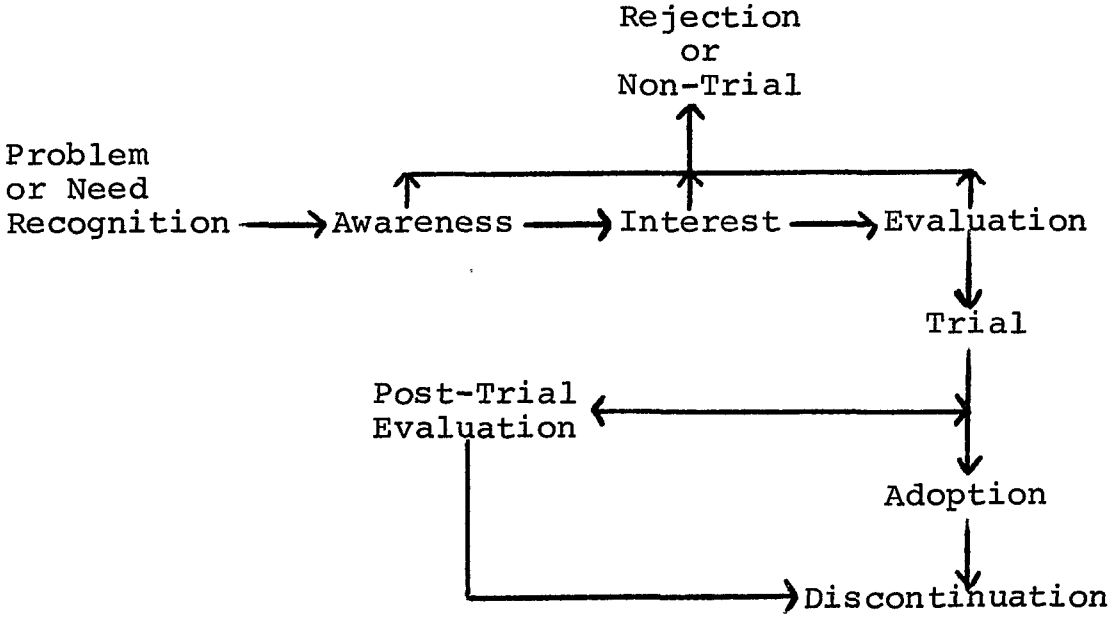
[1]For a similar definition of the adoption process, see Charles W. King, "Adoption and Diffusion Research in Marketing: An Overview," in Raymond M. Haas (ed.), Science, Technology, and Marketing (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1966), p. 667.

FIGURE III

THE ADOPTION PROCESS LEVEL
OF THE DIFFUSION/ADOPTION PARADIGM



Relationship Between Diffusion and Adoption Processes

While the diffusion process is concerned with the time of acceptance of a product innovation by groups of individuals in a social system, the adoption process does not specifically concern itself with groups except as they influence the individual. The adoption process is microscopic, focusing on the individual's decision process. Basically, the adoption process is concerned with the decision process and how the individual is influenced in his decision to adopt, or not to adopt, a product innovation.

In the last chapter it was stated that the diffusion and adoption processes are linked in the following two ways:

1. As an individual accepts a product, diffusion occurs.

2. The level of diffusion of a product partially affects additional individuals' decision to adopt the product.

These two relationships between the diffusion and adoption processes will be briefly explored below.

The first of these two relationships is almost a truism. As an individual member of a social system accepts a product innovation, his act qualifies him for inclusion in one of the five adopter categories. As observed in the last chapter, various personal, communicative, and social characteristics can be employed in distinguishing between earlier and later adopters of a product innovation.

The second relationship of how the level of diffusion of a product innovation affects the acceptance of the product by additional members of a social system, has recently been examined by Frank M. Bass.[2] In his study dealing with the process of acceptance of a group of consumer durable products, Bass identified two types of adopters: "innovators," those who accept an innovation independently of the decision of others in the social system; and "imitators," those who are influenced in the time of their adoption by the decision of other members of the social system.[3] Bass[4] suggests that "Apart from innovators, adopters are influenced in the timing of adoption by pressures of the social system, the pressure increasing for later adopters with the number of previous adopters." Based upon this statement, Bass hypothesized that the " ... probability that an initial purchase will be made at T (time) given that no purchase has yet been made is a linear function of the number of previous buyers."[5] A regression analysis of the model, using sales data for a group of 11 consumer durable products, indicates that the model performs well as a predictor of

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[2]Frank M. Bass, "A New Product Growth Model for Consumer Durables," Management Science, Vol. 15, No. 5, (January, 1969), p. 667.

[3]Ibid., pp. 215-216.

[4]Ibid., p. 216.

[5]Ibid.

the time and magnitude of the growth of sales.[6] Bass' study gives some support to the relationship between the diffusion and adoption processes.

Stages of the Adoption Process

The adoption process in Figure III is depicted as having seven stages: (1) need or problem recognition, (2) awareness, (3) interest, (4) evaluation, (5) trial, (6) post-trial analysis, and (7) adoption. The second through the fifth stages, and the seventh stage, constitute the basic five stage rural sociological adoption process model, which has been popularized by Rogers.[7] According to Rogers,[8] the model is an arbitrary break-down, and can either be expanded or combined to suit the particular situation.

The basic rural sociological adoption process has its roots in other earlier rural sociological stage models. As early as 1943, in their hybrid seed corn study, Ryan and Gross[9] suggested a four stage adoption process model, namely

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[6]Op. cit., p. 222.

[7]Everett M. Rogers, Diffusion of Innovations (New York: The Free Press, 1962).

[8]Rogers, op. cit., p. 79.

[9]Bruce Ryan and Neal C. Gross, "The Diffusion of Hybrid Seed Corn in Two Iowa Communities," Rural Sociology, Vol. 8, No. 1 (March, 1943), pp. 15-24.

(1) awareness, (2) conviction, (3) acceptance, and (4) complete adoption. In the 1950's Wilkening[10] offered another four stage adoption model: (1) awareness, (2) obtaining information, (3) conviction and trial, and (4) adoption.

Although these early adoption processes are similar to the five stage adoption, it is the five stage process, as popularized in Rogers' 1962 book, which has served as the standard reference for marketing discussions of adoption and as a frame of reference for marketing adoption.[11]

The five stages of the basic rural sociological adoption process are reviewed below.[12]

Awareness. Awareness constitutes "exposure" to the product innovation. It is "neutral" or "passive." The individual who is aware of a product innovation is not yet ready to search for additional information. Awareness is viewed as a necessary predisposition for "interest."

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[10]Eugene A. Wilkening, "Role of Communicating Agents in Technological Change in Agriculture," Social Forces, Vol. 34, No. 4 (May, 1956), pp. 151-158.

[11]For example see Frank M. Bass, op. cit., pp. 215-227; James F. Engel, David T. Kollat and Roger D. Blackwell, Consumer Behavior (New York: Holt, Rinehart and Winston, Inc., 1968), pp. 548-554; and Urban B. Ozanne and Gilbert A. Churchill, Jr., "Adoption Research: Information Sources in Industrial Purchasing Decision," in Robert L. King (ed.), Marketing and the New Science of Planning (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1968), pp. 352-359.

[12]The description of the five phases of the adoption process is based upon Rogers, op. cit., pp. 81-86.

Interest. Interest is equated with the seeking out of additional information about the innovation. The search represents the collection of information upon which to rest an analysis of the innovation's possible benefits to the adopter. The individual is no longer neutral, he is actively involved either anticipating a search or actually searching for innovation related information. The collection of such information is the prerequisite and beginning of attitude formation.

Evaluation. Based upon the "stock" of information, the individual is in a position to draw conclusions about the innovation, or to determine if any further information is necessary. The evaluation stage thus represents a "mental trial" of the product innovation. If the mental trial is satisfactory, the individual will go on to actually try the product innovation; if the mental trial is unsatisfactory, the innovation will be rejected.

Trial. Trial constitutes the actual use of the product innovation on a limited basis. It is experimental application of the innovation under actual or normal "use" conditions. The major form of information here is the individual's experience from trying.

Trial is not always possible; for example, with most durable goods, an individual must move directly from evaluation to a full commitment with no chance for direct trial.

Adoption. Adoption, the last stage in the adoption process, is full commitment to the product innovation. Here the individual has decided, based upon trial and/or evaluation, to use the product innovation on a continuous basis. During the trial stage the individual is using the product on a small scale in order to determine if it meets his expectation. The adoption stage signifies that the product has been accepted.

Most marketing studies have examined "trial" rather than "adoption." Engel, Kollat and Blackwell[13] have commented on this as follows: " ... consumer researchers in the past have made little effort to measure adoption. They have been content to measure purchase or non-purchase, which is something different from adoption." Two factors seem to explain why marketing studies, in comparison to the studies of rural sociology, have tended to concentrate on trial rather than adoption. They are:

1. Marketing studies have examined acceptance of specific brands at single points in time, while rural sociological studies tend to focus on generic products over several purchase periods.[14]

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[13]Engel, Kollat and Blackwell, op. cit., p. 553.

[14]Rural sociological studies tend to be heavily financed by either state agricultural centers, or directly by the United States Department of Agriculture; this partially explains the ability to undertake studies which extend over a wider period of time.

2. For marketing studies it has been more difficult to show commitment which comes with adoption. For example, the unit size of a consumer non-durable, i.e., coffee, is likely to remain relatively constant in both the trial and adoption stages.

On the other hand, in rural sociological studies, where the acceptance of products like hybrid seed corn is explored, an increased planting of hybrid seed corn serves as a direct measure of increased commitment.

However, it must be pointed out that this is not solely a marketing research shortcoming. Katz, Levin and Hamilton[15] have suggested that in adoption research in general, there has been a too frequent and arbitrary treatment of "trial" as "adoption."

Rejection and Discontinuation. In addition to the five adoption stages, there are two implicitly related decision alternatives: rejection and discontinuation. As commonly defined, rejection can occur at any stage in the adoption process after "awareness" and prior to "adoption." If the rejection occurs after adoption, it is referred to as discontinuation.[16]

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[15]Elihu Katz, Martin L. Levin and Herbert Hamilton, "Traditions of Research on the Diffusion of Innovation," American Sociological Review, Vol. 28, No. 2 (April, 1963), p. 240.

[16]Rogers, op. cit., p. 88.

As depicted in Figure III, rejection and discontinuation are set up to suggest a slightly different relationship. Rejection is limited to the decision not to accept a product innovation prior to trial, while discontinuation has been reserved for the decision to reject a product innovation either after the initial trial, or after adoption. These differences in definition are not major.

Need or Problem Recognition and Post-Trial Analysis. The adoption process offered by the present writer (as depicted in Figure III) includes two stages: "need or problem recognition" and "post-trial analysis" which are not to be found as part of the basic rural sociological adoption process model. These two stages will be briefly examined.

Need or Problem Recognition

This stage seems to be a logical first step for an adoption cycle where a potential consumer perceives a problem or need prior to becoming aware of a product, or prior to the market introduction of a product which might satisfy that need. Engel, Kollat and Blackwell[17] define problem recognition as the " ... difference of sufficient magnitude between what is perceived as the desired state of affairs and what is perceived as the actual state of affairs."

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[17]Engel, Kollat and Blackwell, op. cit., pp. 360-361.

They further indicate that problem recognition is different from "awareness" and "interest"--that it includes an awareness of the difference between desired and actual states, and not the awareness of the product innovation.[18]

Post Trial Analysis

This stage occurs after the initial trial of the product innovation. It constitutes "evaluation" of the purchase decision with regard to how a product lives up to the consumer's pre-trial expectations. The stage has been added between trial and adoption because of the psychological evidence of the existence of post behavior attitude development. The following statement, made by Martin Fishbein, captures the essence of recent psychological thought on this issue:[19]

> After more than 75 years of attitude research there is still little, if any, consistent evidence supporting the hypothesis that knowledge of an individual's attitude toward some object will allow one to predict the way he will behave with respect to the object. Indeed, what little evidence there is to support any relationship between attitude and behavior comes from studies showing that a person tends to bring his attitude into line with behavior ...

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[18]Engel, Kollat and Blackwell, op. cit., p. 365.

[19]Martin Fishbein, "Attitude and the Prediction of Behavior," in Martin Fishbein (ed.), Readings in Attitude Theory and Measurement (New York: John Wiley and Sons, Inc., 1967), p. 477.

Criticisms of the Basic Rural Sociological Adoption Process

The basic five stage adoption process of rural sociology has been criticized by Mason[20] and Campbell.[21]

In an exploratory research study of the stages of the adoption process, Mason found that only "awareness" and "adoption" (in that order) are necessary and sufficient stages of the adoption process.[22] Campbell argues, in his criticism of the basic adoption process of rural sociology, that it is too simple and inadequate to explain the variety of possible processes which lead to the acceptance or rejection of innovations.[23] He suggests a more complex adoption paradigm which includes four possible adoption models. Figure IV presents the four types of adoption process models identified by Campbell.

An examination of Figure IV indicates the following differences between the four adoption models:[24]

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[20] Robert Mason, "An Ordinal Scale for Measuring the Adoption Process," in Elihu Katz, et. al. (eds.), Studies of Innovation and of Communication to the Public, (Stanford, California: Institute for Communication Research, Stanford University, 1962), pp. 99-116.

[21] Rex Campbell, "A Suggested Paradigm of the Individual Adoption Process," Rural Sociology, Vol. 31, No. 4 (December, 1966), pp. 458-466.

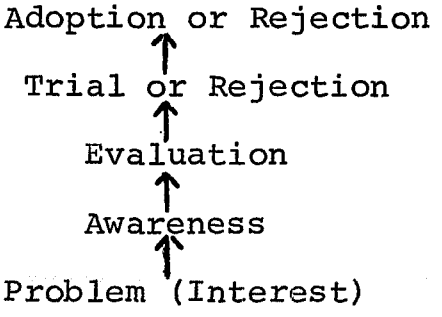
[22] Mason, op. cit., p. 116.

[23] Campbell, op. cit., p. 458.

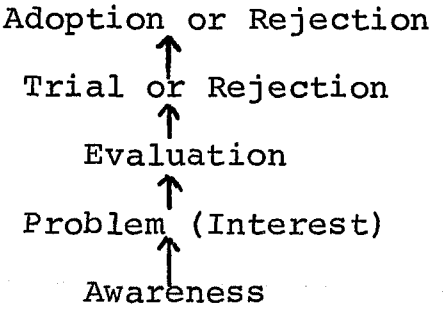
[24] Ibid., p. 465.

FIGURE IV

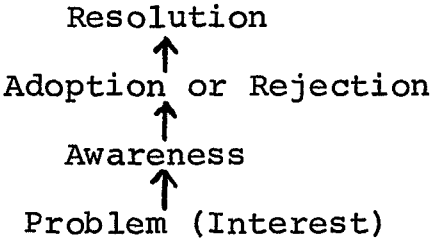
THE FOUR CAMPBELL
ADOPTION PROCESS MODELS



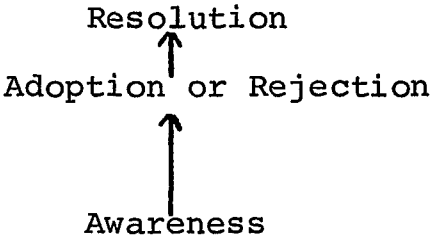
Model 1
Rational-Problem Oriented



Model 2
Rational-Innovation Oriented



Model 3
Non-Rational-
Problem Oriented



Model 4
Non-Rational-
Innovation Oriented

Source:
Rex Campbell, "A Suggested Paradigm of the Individual Adoption Process," Rural Sociology, Vol. 31, No. 4, (December, 1966), p. 465.

1. The Rational-Problem Oriented Model - adds a "problem recognition" stage to the beginning of the basic adoption process model.

2. The Rational-Innovation Oriented Model - is identical to the basic adoption process model.

3. The Non-Rational-Problem Oriented Model - adds both a "problem recognition" and a "resolution" (of dissonance) stage to the basic adoption process model.[25]

4. The Non-Rational-Innovation Oriented Model - adds a "resolution" stage to the basic adoption process model.

Mason's and Campbell's reviews of the basic adoption process suggest that there is no single adoption process; rather the number of stages and sequence of stages are dependent upon the interaction of the characteristics of both the innovation and individuals who are contemplating the innovation. These two critiques suggest that the basic five stage rural sociological adoption process is probably best viewed as a rough approximation of a new product or service decision making process. What is needed is further research designed to determine the number and sequence of stages which might be appropriate for describing specific types of consumer decisions.

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[25]Campbell's "Non-Rational-Problem Oriented Model," is most consistent with the adoption process level of the diffusion/adoption paradigm presented in this dissertation.

The following two sections examine the development of marketing or consumer behavior models which are analogous to the rural sociological adoption process. The first section considers the early models which have as their primary point of reference the persuasion of passive consumers. This group of models is here called "marketing persuasion models." The second group of models is more sophisticated, parallels the basic rural sociological adoption process model, and reflects the recent contributions of the behavioral sciences to marketing thinking. These models are labeled "marketing process models." They are more comprehensive than either the basic rural sociological adoption process or the earlier marketing persuasion models.

Marketing Persuasion Models

In the above discussion, primary focus was placed on the adoption process as developed in the field of rural sociology. It would be remiss to exclude the development of similar models in the literature of marketing. To distinguish the models generated in marketing from the adoption process of rural sociology, those models developed within the context of marketing will be referred to here as "persuasion models."

The term "marketing persuasion models" is employed because it seems to capture the climate in which these marketing models were developed; that is, as guides, formulas, or blueprints by which salesmen or advertisers could persuade the rather passive consumer to purchase their products and services.

A review of early marketing publications uncovered the proposal of a persuasion model in a volume on salesmanship published by the Alexander Hamilton Institute in 1917. The author, John G. Jones, wrote:[26]

> In the development of the selling process, there are four distinct stages. First, the salesman must secure the prospect's undivided attention. Secondly, this attention must be sustained and developed into interest. Thirdly, this interest must be ripened into desire. And fourthly, all lingering doubts must be removed from the prospect's mind, and there must be implanted there a firm resolution to buy; in other words, the sale must be closed.

A more popular early persuasion model is the so-called "sales formula" or "AIDA" model. The model has four stages: (1) attention, (2) interest, (3) desire, and (4) action.[27] This model, like the adoption process of rural sociology, is composed of mental stages leading up to the commitment.

Two recent "sister" models have been offered in the marketing literature. First, Colley's DAGMAR model[28] which suggests that all commercial communications must move a prospect through four "levels of understanding:" (1) awareness, (2) comprehension, (3) conviction, and (4) action.

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[26]John G. Jones, Salesmanship and Sales Management (New York: Alexander Hamilton Institute, 1917), p. 29.

[27]Harold C. Cash and W. J. E. Crissy, "A Point of View for Salesmen," The Psychology of Selling, Vol. I (New York: Personnel Development, Inc., 1957), pp. 10-13.

[28]Russell H. Colley, Defining Advertising Goals for Measured Advertising Results (New York: Association for National Advertisers, Inc., 1961), pp. 37-38.

In offering his model Colley says:[29] "This formula, perhaps in different words, is as old as advertising, selling, and other forms of persuasive communication."

The second recent marketing persuasion model was suggested by Lavidge and Steiner; their model has the following six stages:[30] (1) awareness, (2) knowledge, (3) liking, (4) preference, (5) conviction, and (6) purchase. Lavidge and Steiner indicate that the model has three basic psychological states: (1) cognitive - the aspect of thought, (2) affective - the aspect of emotion, and (3) conative - the aspect of motives.[31] These three psychological states link the Lavidge and Steiner model a little more with the application of the behavioral sciences than the other marketing models considered thus far.

The AIDA, DAGMAR, and Lavidge and Steiner models have been criticized within the marketing literature. Arndt[32] has suggested that models such as AIDA and DAGMAR are extensions of the earlier view that consumers are basically passive, and marketers are active, or the manipulators.

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[29] Colley, op. cit., p. 38.

[30] Robert J. Lavidge and Gary A. Steiner, "A Model for Predictive Measurements of Advertising Effectiveness," Journal of Marketing, Vol. 25, No. 6 (October, 1961) pp. 59-62.

[31] Ibid., p. 61.

[32] Johan Arndt, "Advertising to the Problem-Solving Consumer," Admap (October, 1969), p. 430.

Further, based upon a review of available marketing research, Palda[33] has found little evidence to substantiate the fixed number of stages and sequence of models such as the Lavidge and Steiner model. Palda's analysis does not indicate that marketing stage models are inaccurate, as much as it suggests that it still remains to be subject to critical examination under controlled experimental conditions.

Marketing Process Models

The marketing persuasion models, like the basic adoption process of rural sociology, all start with awareness, or attention, and end with some form of purchase. They also implicitly suggest a fixed sequence of stages. Beyond these similarities lies an important difference between the adoption process and the marketing persuasion models. The marketing persuasion models tend to stress the power of personal selling and mass media as a manipulator, and depict the consumer as basically passive; while the adoption process stresses the importance of interpersonal interaction, and the capabilities of the individual, as a participant in the communication process.[34]

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[33]Kristian S. Palda, "The Hypothesis of a Hierarchy of Effects: A Partial Evaluation," Journal of Marketing Research, Vol. 3, No. 1 (February, 1966), pp. 13-24.

[34]Arndt, op. cit., p. 430; and Katz, Levin and Hamilton, op. cit., p. 245.

Three marketing process models,[35] which are in keeping with the decision orientation of the adoption process presented in Figure III, are considered below.

A model proposed by Kotler includes (1) felt need, (2) prepurchase activities, (3) purchase decision, (4) use behavior, and (5) post-purchase feelings.[36] The model suggested by Engel, Kollat and Blackwell includes: (1) problem recognition, (2) external search, (3) alternative evaluation, (4) purchase processes, and (5) postpurchase evaluation.[37] These two models each include pre-awareness and post-purchase processes which are linked to recent behavioral science research.

The third model, proposed by Robertson,[38] is the most comprehensive of the marketing process models. It has the unique characteristic of interrelating the findings of behavioral science and consumer behavior research with the adoption process of rural sociology. Figure V is a schematic of the Robertson model.

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[35]The term "marketing process model" is employed here to suggest that because of its greater complexity, each process level is capable of being divided into a number of stages.

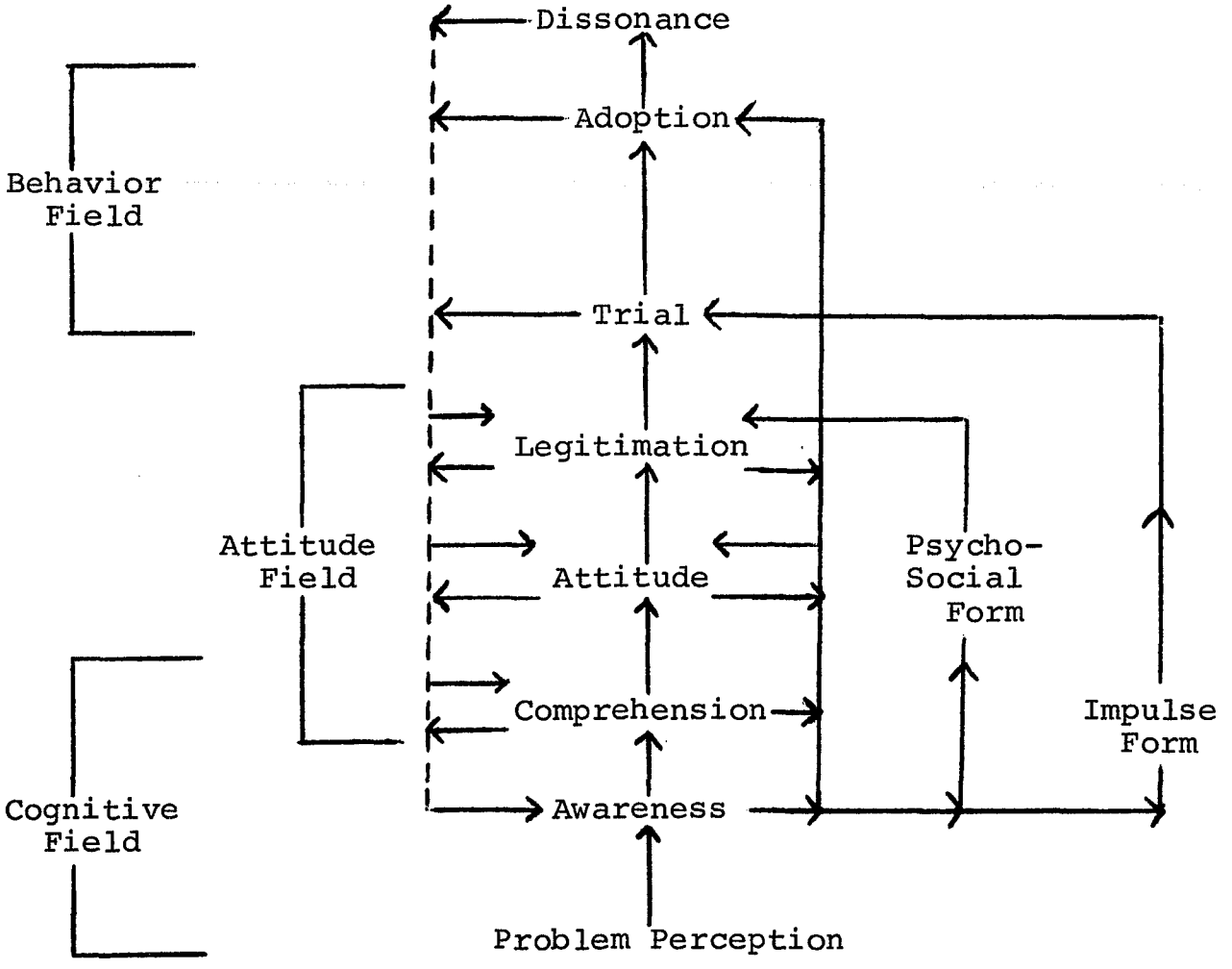
[36]Philip Kotler, Marketing Management (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967), pp. 68-75.

[37]Engel, Kollat and Blackwell, op. cit., pp. 345-537.

[38]Thomas S. Robertson, "A Critical Examination of 'Adoption Process' Models of Consumer Behavior," a paper prepared for presentation at the Third Annual Buyer Behavior Conference (New York: Columbia University, 1969) 44 pp.

FIGURE V

THE ROBERTSON MODEL



Source:
Thomas S. Robertson, "A Critical Examination of 'Adoption Process' Models of Consumer Behavior," a paper prepared for presentation at the Third Annual Buyer Behavior Conference (New York: Columbia University, 1969), p. 30.

The model has the following stages:[39]

1. Problem perception - the consumer perceives a problem and is willing to search for information.

2. Awareness - the consumer is aware of the existence of a product innovation.

3. Comprehension - the consumer applies the information gathered to formulate a product-function concept.

4. Attitude - the consumer develops feelings and perceives action with regard to the product innovation.

5. Legitimation - the consumer develops conviction with regard to the "correctness" of the course of action.

6. Trial - the consumer tries the product on a limited basis.

7. Adoption - the consumer accepts the product innovation on a continuous basis.

8. Dissonance - the consumer deals with post-purchase uncertainty.

Robertson implicitly assumes that the consumer can reject the innovation at any point.[40]

These three models of the consumer's decision process differ from the marketing persuasion models in the following ways:

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[39] Robertson, op. cit., pp. 31-34.

[40] Ibid., p. 31.

1. They are "processes" which are capable of being divided into a large number of stages.

2. They are linked and built upon behavioral science and consumer behavior research findings, rather than "intuition."

3. They include a pre-awareness level, and a post-action evaluation level.

Relevant to these more sophisticated models, it is presently popular to represent the consumer as a decision-maker, or problem solver. Such a framework is consistent with models of industrial or organizational decision making which stress a world of uncertainty or bound rationality.[41] In marketing, Alderson[42] and Bauer[43] have championed the decision making or problem solving nature of consumer behavior. Also, recent formal models, or theories of

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[41]See: James G. March and Herbert A. Simon, Organizations (New York: John Wiley & Sons, Inc., 1958); and Richard M. Cyert and James G. March, A Behavioral Theory of the Firm (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963).

[42]Wroe Alderson, Marketing Behavior and Executive Action (Homewood, Illinois: Richard D. Irwin, Inc., 1957), p. 428; and Dynamic Marketing Behavior (Homewood, Illinois: Richard D. Irwin, Inc., 1965), pp. 164-183.

[43]Raymond A. Bauer, "The Obstinate Audience: The Influence Process from the Point of Social Communication," American Psychologist, Vol. 19, No. 5 (May, 1964), pp. 319-328.

consumer behavior suggested by Andreason,[44] Arndt,[45] Engel, Kollat and Blackwell,[46] Howard and Sheth,[47] and Nicosia[48] have envisioned the consumer-buyer primarily as a problem solver or decision maker.

To point up the interdisciplinary nature of the adoption and diffusion processes, the next and last section of this chapter examines the research literature of several disciplines, which have developed their own line of research, or which may serve as a frame of reference for diffusion and/or adoption research.

Other Fields of Diffusion and Adoption Research

In reviewing marketing diffusion and adoption studies in this and the last chapter, frequent reference has been made to the research accomplishments of several subfields of sociology, particularly concerning rural sociology.

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[44] Alan R. Andreason, "Attitudes and Customer Behavior: A Decision Model," in Harold H. Kassarjian and Thomas S. Robertson (eds.), Perspectives in Consumer Behavior (Glenview, Illinois: Scott, Foresman and Company, 1968), pp. 498-510.

[45] Arndt, op. cit., pp. 428-430.

[46] Engel, Kollat and Blackwell, op. cit., pp. 354-537.

[47] John A. Howard and Jagdish N. Sheth, The Theory of Buyer Behavior (New York: John Wiley & Sons, Inc., 1969).

[48] Francesco M. Nicosia, Consumer Decision Processes (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966).

The popularity of rural sociological research is based upon the availability of a relatively large inventory of studies which offer marketing researchers the benefit of a logical starting point for their research efforts. For those marketing diffusion and adoption studies, like the one to be presented in this dissertation, where the issue is the acceptance of a consumer product, or service innovation, the research results of rural sociology have proven to be an appropriate frame of reference.[49] The present emphasis on the research findings of sociologically oriented diffusion and adoption studies does not mean that other disciplines are either disinterested, or have not contributed to the general understanding of the diffusion, and adoption of innovations. It is, therefore, appropriate to briefly examine the results of diffusion and adoption studies generated in several other disciplines, so that the true interdisciplinary nature of diffusion and adoption is adequately portrayed. Specifically, attention will be focused on the contributions of the following disciplines: (1) technological innovation as examined by

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[49]For example, see: Frank M. Bass, op. cit., pp. 215-227; Walter P. Gorma, III and Charles T. Moore, "The Early Diffusion of Color Television Receivers into a Fringe Area Market," Journal of Retailing, Vol. 44, No. 3 (Fall, 1968), pp. 46-56; and Thomas S. Robertson, "The Effect of the Informal Group Upon Innovative Behavior," in Robert L. King (ed.), Marketing and the New Science of Planning (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1968), pp. 334-340.

economic technologists, (2) educational innovation as studied by educational researchers, (3) organizational innovation as explored by students of organization theory, and (4) finally, the efforts of cognitive and social psychologists who are concerned with the psychological components of the acceptance of change.

Technological Innovation. Interest in technological innovation has primarily been the domain of the economist. The roots of this interest can be traced to Schumpeter.[50] It was Schumpeter who, as early as 1939, proposed a "Theory of Innovation," which viewed innovation as the establishment of a new production function.[51] An innovation could take the form of organization, or the development of a new market.[52] The technological innovation studies which are examined below rest on the conceptual framework and questions raised by Schumpeter.

Technological innovation can be viewed from two vantage points: (1) the position of innovation adopting firms, the demand side of the market; or (2) the position of innovation developing firms, the supply side of the market.

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[50]Joseph A. Schumpeter, Business Cycles, Vol. I (New York: McGraw-Hill Book Company, Inc., 1939).

[51]Ibid., pp. 87-88.

[52]Ibid., p. 87.

Carter and Williams have explored the qualities possessed by technologically progressive firms.[53] Based upon a preliminary study of some 50 English firms, they conclude that such factors as good information sources, readiness to cooperate, cost-consciousness in research, climate for personnel talent, and effective selling are capable of identifying the extent to which a firm is technologically progressive.[54]

Turning to more quantitatively based studies of technological innovation, Griliches[55] has reported the results of an economic study designed to measure the acceptance of hybrid corn. Griliches' results suggest that the rate of acceptance of hybrid corn is a function of perceived and observed profitability of the benefits of a shift to hybrid corn.[56] His research indicates that farmers in different parts of the country reacted rationally to the acceptance of hybrid corn; in states like Iowa, where the advantages of adoption were great and clear, it took only four years for adoption to go from 10 percent to 90 percent, while in other states

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[53] C. F. Carter and B. R. Williams, "The Characteristics of Technically Progressive Firms," Journal of Industrial Economics, Vol. 7, No. 2 (March, 1959), pp. 87-104.

[54] Carter and Williams, op. cit., p. 90.

[55] Zvi Griliches, "Hybrid Corn: An Exploration in the Economics of Technological Change," Econometrica, Vol. 25, No. 4 (October, 1957), pp. 501-522.

[56] Ibid., p. 516.

where the profitability of adoption was lower, the acceptance of hybrid corn was slower.[57] Sutherland[58] has examined the acceptance of an innovation which reduces the extent of processing of cotton. He found that the managements of those firms which did not adopt the innovation were defensive, pessimistic, and thinking in terms of the short run.[59]

Probably the most extensive empirical studies of the economics of technological innovations have been reported by Mansfield.[60] Employing a combination of published data and personal interviews, Mansfield has examined the acceptance of a variety of capital goods, processes, and management techniques by the larger member firms comprising the bituminous coal, iron and steel, brewing, and railroad industries.[61] He has examined such adoption/diffusion problems as (1) the factors determining the rate of acceptance of innovations

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[57] Griliches, op. cit., p. 522.

[58] Alister Sutherland, "The Diffusion of an Innovation in Cotton Spinning," Journal of Industrial Economics, Vol. 7, No. 2 (March, 1959), pp. 118-135.

[59] Ibid., p. 134.

[60] In addition to the studies examined here, see: Edwin Mansfield, "The Process of Technical Change," in Richard A. Tybout (ed.) Economics of Research and Development (Columbus, Ohio: Ohio State University Press, 1965), pp. 136-147; The Economics of Technological Change (New York: W. W. Norton and Company, Inc., 1968); and Industrial Research and Technological Innovation: An Econometric Analysis (New York: W. W. Norton and Company, Inc., 1968).

[61] Edwin Mansfield, "Size of Firm, Market Structure, and Innovation," Journal of Political Economy, Vol. 71, No. 6, (December, 1963), p. 557.

by members of an industry once it has been adopted by the first firm, (2) what factors determine if one firm will be quicker than another to adopt an innovation, and (3) whether the same firms tend to continuously lead in the acceptance of technological innovations.

From his various studies Mansfield has found the following generalizations with regard to these diffusion and adoption problems:

1. The probability that a firm will adopt an innovation increases as the number of firms that have already adopted the innovation increases.[62]

2. The more profitable an innovation is and the smaller the investment, the greater the rate of diffusion.[63]

3. The rate of diffusion of an innovation is greater when the practice which it is replacing does not have a high fixed cost, and when the industry's output is growing.[64]

4. The speed of adoption of an innovation is positively related to the profitability of the investment and the size of the firm.[65]

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[62]Edwin Mansfield, "Technological Change and the Rate of Imitation," Econometrica, Vol. 29, No. 4 (October, 1961), p. 746.

[63]Edwin Mansfield, "Size of Firm, Market Structure, and Innovation," op. cit., p. 573.

[64]Edwin Mansfield, "Technological Change and the Rate of Imitation," op. cit., p. 747.

[65]Edwin Mansfield, "The Speed of Response of Firms to New Techniques," Quarterly Journal of Economics, Vol. 77, No. 2, (May, 1963), pp. 309-310.

5. Finally, the early accepters of one innovation do not tend to be the early adopters of another innovation; rather, leadership in technological innovation adoption seems to vary.[66]

Thus far, adoption and/or diffusion of technological innovations have been considered. According to Jacob Schmookler, the dissemination, or diffusion, of technological innovations is but one of two components of a nation's technological growth; the other component is the rate at which new technology is produced.[67] Turning to the question of developing innovations, or the transfer of technology, the writings of Schon[68] and Berenson[69] will briefly be examined in the way of illustration. Schon has suggested that the development of new products is a process which is designed to convert uncertainty into risk. He stresses the importance of increasing the level and quality of interaction between technology (research and development) and marketing.[70] More recently Berenson has suggested a

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[66]Mansfield, op. cit., p. 310.

[67]Jacob Schmookler, Invention and Economic Growth (Cambridge, Massachusetts: Harvard University Press, 1966), p. 2.

[68]Donald A. Schon, Technology and Change (New York: Delacorte Press, 1967).

[69]Conrad Berenson, "The R&D: Marketing Interface - A General Analogue Model for Technology Diffusion," Journal of Marketing, Vol. 32, No. 2 (April, 1968), pp. 8-15.

[70]Schon, op. cit., pp. 105-110.

comprehensive model of the transfer and diffusion of technology. The model is based upon the application of principles of transfer of materials across the surface of an interface.[71] Based upon the model, various management efforts to increase the quantity and quality of interfunctional coordination so as to improve the likelihood of new product market success are identified.[72]

It would seem logical that those interested in carrying out marketing oriented studies of the acceptance of industrial products would learn much from a careful review of these aspects of technological innovation.

Educational Innovation. The results of research studies concerned with the diffusion and adoption of educational innovations have not received widespread circulation. Most of the early educational diffusion and adoption studies have been produced by faculty and students of Columbia University's Teachers College.[73] A recent study which typifies the studies undertaken by educational researchers is reported by Carlson.[74] In his study of the adoption of a group of

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[71]Berenson, op. cit., p. 9.

[72]Ibid., pp. 10-15.

[73]See: Paul R. Mort and Francis G. Cornell, Adaptability of Public School Systems (New York: Columbia University, Teachers College, 1938); and Paul R. Mort and Truman A. Pierce, A Time Scale for Measuring the Adaptability of School Systems (New York: Columbia University, Teachers College, 1947).

[74]Richard O. Carlson, Adoption of Educational Innovations (Eugene, Oregon: The Center for the Advanced Study of Educational Administration, University of Oregon, 1965).

educational innovations, e.g., programmed instruction, modern mathematics, and team teaching, the school system is the unit of analysis.[75] Particular attention is given to the influence of school superintendents on the rate of acceptance of educational innovations. For example, in the case of modern mathematics, a strong relationship between friendship patterns existing between superintendents and the speed of adoption; that is, early adopters of modern mathematics tend to be most friendly with other early adopters, and later adopters are friends of other later adopters.[76]

Organizational Innovation. Consistent with the problem solving framework of the modern organization as depicted by such theoreticians as March and Simon[77] and Cyert and March,[78] several studies of organizational innovation have recently been reported in the management literature.[79]

Becker and Stafford[80] report the results of a study designed, among other things, to relate organizational

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[75]Carlson, op. cit., p. 14.

[76]Ibid., pp. 18-20.

[77]March and Simon, op. cit.

[78]Cyert and March, op. cit.

[79]The Journal of Business, October, 1967, is a special issue dealing with organizational innovations.

[80]Selwyn W. Becker and Frank Stafford, "Some Determinants of Organizational Success, Journal of Business, Vol. 40, No. 4 (October, 1967), pp. 511-518.

efficiency to the adoption of innovations. Studying a sample of 140 saving and loan associations with assets of $5 millions or more, and employing an index of adoption of innovation (based upon the number and time of adoption of some 18 innovations), they found that the following organizational life cycles prevailed: (1) as small associations grow, more and more energy is expended to keep them operating effectively; (2) this leads to the need of further management capabilities, which negatively affect the assets and surplus of each association; (3) in turn this leads to the need to adopt a variety of innovations; and (4) if appropriate innovations are accepted, this action will increase efficiency.[81]

Knight[82] has suggested an overall framework for studying organizational innovations. He categorizes them as (1) product or service innovations, (2) production-process innovations, (3) organizational-structure innovations, and (4) people innovations. He suggests that innovations in each of these four areas may lead either to the attainment or retardation of organizational goals.[83]

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[81] Becker and Stafford, op. cit., p. 517

[82] Kenneth E. Knight, "A Descriptive Model of the Intra-Firm Innovation Process," Journal of Business, Vol. 40, No. 4 (October, 1967), pp. 478-496.

[83] Ibid., p. 482.

Psychology and Innovation. The literature of diffusion and adoption has been dominated by researchers trained in the fields of sociology. This probably explains why relatively little reference is made to the literature of psychology.[84] However, it contains much information that both directly and indirectly parallels adoption and diffusion research. To illustrate the relationship between psychology and diffusion, and adoption, the work of a small number of cognitive and social psychologists will be briefly examined.

In 1933 John Dewey suggested the following five-phase model of decision making (reflective thinking):[85] (1) suggestion phase - the idea or realization of what to do when facing a demanding situation. It replaces immediate action;[86] (2) intellectualization phase - the beginning of a process of problem definition which arises from the realization of the pressing situation; (3) hypothesis phase - the application of insight in construction of a supposition with regard to the situation; (4) reasoning phase - the mental testing of the hypothesis based on past experience;

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[84] It is not suggested here that students of diffusion and adoption are unaware of or do not implicitly employ various psychological findings; it is only suggested that there seems to be little explicit reference to research findings, cognition, learning theory, and social psychology.

[85] John Dewey, How We Think (New York: D.C. Heath and Company, 1933).

[86] Dewey felt that it is artificial to start with the "problem;" the "problem" must be developed from the "situation" and what it suggests. Ibid., p. 108.

and (5) testing by action phase - the overt behavior which tests the hypothesis. The action will lead to the acceptance or rejection of the hypothesis.

Dewey advises his readers that there is no fixed sequency to these five phases, nor is it necessary that each phase be apparent in a given situation. Emphasis varies, depending on the specific task or situation.[87]

Dewey's phase model parallels the adoption process; he considers the problem of number of phases and sequency of phases, two problems which have been explored earlier, as relates to both the adoption process model and the marketing persuasion models.

Several other areas of cognitive psychology worthy of exploration by researchers interested in diffusion and adoption are: concept formation, thinking, problem solving, and creativity.[88]

Turning to social psychology, Solomon Asch[89] has concerned himself with a variety of social psychological questions which are related to the interests of diffusion and adoption research. For example, Asch examines imitation,

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[87]Dewey, op. cit., pp. 115-116.

[88]Melvin Manis, Cognitive Processes (Belmont, California: Wadsworth Publishing Company, 1966).

[89]Solomon E. Asch, Social Psychology (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1952).

where " ... one organism responds to another by making the same response."[90] Imitation is a basic part of both adoption and diffusion. Specifically, it is part of the "interaction process" discussed earlier. Another psychologist, Kurt Lewin,[91] has reported the results of a series of experiments designed to change attitudes and behavior. One experiment was concerned with altering food habits. Six groups of American housewives were studied; three groups utilized a "lecture method" and three a "discussion method." The aim of both the lecture and discussion methods was to produce changes toward including culturally undesirable foods in the family meals.[92] Some time after the initial exposure, subjects were checked to determine if they had included the meats in their meals. Only three percent of the individuals exposed to the lecture included any of the food items, while 32 percent of the individuals in discussion groups started using the new food items.[93]

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[90]Asch, op. cit., p. 389.

[91]Kurt Lewin, "Group Decision and Social Change," in Theodore M. Newcomb and Eugene L. Hartley (eds.), Readings in Social Psychology (New York: Henry Holt and Company, 1947), pp. 330-344.

[92]Ibid., pp. 334-335.

[93]Lewin, op. cit., p. 335.

Lewin's experiments point up the importance of getting individuals personally involved (ego-involved) in an issue by having them actively participate toward changing attitudes and behavior.

The brief examination of concepts and research evidence gleaned from technological innovation, educational innovation, organizational innovation, and psychology give evidence that diffusion and adoption research are interdisciplinary areas, and interest in innovation exists across a wide range of social and behavioral inquiry.

Conclusion

A variety of models from both rural sociology and marketing have been presented in the preceding sections. In addition, several weaknesses of most of the early models were noted, namely: (1) that not all of the stages may be necessary in a given situation, and (2) the sequence of the stages may vary. More explicit research with regard to adoption process stages is undoubtedly required before the number and sequence of stages can be linked to consumer-product characteristics.

The next two chapters are devoted to an examination of the relationship between a group of "related variables" and the adoption process.

CHAPTER IV

THE FLOW OF COMMUNICATION: LITERATURE REVIEW

In this and the next chapter, the third and final level of the diffusion/adoption paradigm, the "related variables," are linked to adoption research. This chapter focuses on the flow of communication. Two points are to be examined:

1. The impact of different sources of communication at specific stages of the adoption process.

2. The operation of the informal communication process.

To assist in the examination of these two points, a classification scheme of the various sources of communication is first considered.

Classification of the Flow of Communication

The flow of communication with regard to product and service innovations may be divided into two major source categories: impersonal and interpersonal sources.

Impersonal sources of communication are principally composed of messages which may reach a receiver by one or more of the following three vehicles: (1) mass media advertisements--messages paid for by an organization promoting a product, service or corporate image; (2) editorial content--messages (articles or programs) which are controlled by the

source or medium; and (3) specialized neutral publications--messages appearing in sources which rate or evaluate products, and which do not accept advertisements in order to avoid jeopardizing their neutral position, e.g., Consumer Reports. These three types of communication are "impersonal" because they do not constitute direct communication between two individuals, and they reach a group, or audience, rather than specific individuals.

Interpersonal communication takes place between two or more parties; it may be divided into two major components: informal and formal sources. Informal communication is frequently called "word of mouth advertising." The key characteristic of informal communication is that it takes place between two or more parties, neither of whom represents a commercial selling source. Although informal communication is generally conceived of as personal, or face-to-face, communication, it may be non-personal, e.g., a telephone conversation between two friends. One of the parties in an informal communication encounter is usually offering advice or guidance, such as which of several brands is best, or how a particular product may best be used. The person who is principally offering advice in an informal encounter is usually labeled the "opinion leader."

Formal communication differs from informal communication in that one of the parties is a professional (or commercial)

influencer, for example, a sales representative, or detail man, who is compensated for presenting a product or service to potential purchasers. As is the case with informal communication, formal communication may be personal (face-to-face) or non-personal (such as a telephone conversation.)

Given this classification scheme, the two points outlined in the beginning of this chapter are next considered.[1]

Communication and Adoption Stages

The relationship between sources of communication and stages of the adoption process has been principally examined by rural sociologists.[2] The results of a substantial amount of research suggests that the impact of different sources of communication may vary with stages of the adoption process. Specifically, the results suggest that impersonal sources are most important at the awareness stage, while interpersonal sources are most important at the evaluation stage.[3] However, this generalization of the differential impact of sources of communication does not detract from the importance of a cumulative impact of all sources of information.

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[1]For other classification schemes see: Everett M. Rogers, Diffusion of Innovations (New York: The Free Press, 1962), pp. 98-105; and Donald F. Cox, "The Audience as Communicators," in Stephen A. Greyser (ed.), Toward Scientific Marketing (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1963), p. 63.

[2]Rogers, op. cit., pp. 98-104.

[3]Ibid.

A study from rural sociology which illustrates the differential impact of sources of communication has been reported by Wilkening.[4] He found that mass media primarily provides information at the awareness stage, while interpersonal-informal sources, such as friends and neighbors, were the main sources of information at the evaluation stage.[5] In addition, Wilkening reported that during the evaluation stage, commercial dealers (interpersonal-formal sources) served the farmer as a source of "when" and "how" to put a new practice into operation.[6]

Wilkening's study suggests that impersonal and interpersonal sources of information each provide for fulfillment of different information needs existing at various stages of the adoption process.[7] More specifically, impersonal sources basically perform an early informative role, while interpersonal sources are primarily performing a later informative role. A review of marketing adoption literature to determine if this generalization is applicable was undertaken. Unfortunately too few studies, in the realm of either consumer or industrial goods, have been reported which examine the

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[4]Eugene A. Wilkening, "Role of Communicating Agents in Technological Changes in Agriculture," Social Forces, Vol. 34, No. 4 (May, 1956), pp. 361-367.

[5]Ibid., pp. 364-366.

[6]Ibid., p. 366.

[7]For a further discussion see: James H. Copp, et. al., "The Function of Information Sources in the Farm Practice Adoption Process," Rural Sociology, Vol. 23, No. 2 (June, 1958), pp. 146-157.

impact of sources of information by adoption stages, and those sources which are available present mixed results regarding it.

Sheth,[8] in his study of the acceptance of stainless steel blades by university students, found that impersonal sources of information (mass media) were responsible for informing 65 percent of the respondents about the product; while close to 50 percent of the respondents identified interpersonal-informal sources as influential in their decision to adopt. What confounds these results is that a large number of those who were influenced by informal sources, were also influenced by impersonal sources.[9] Therefore, it is impossible to conclude from the Sheth study that there exists more than a tendency for a "division of labor" between interpersonal-informal and impersonal sources. The Sheth study may be indicating that a combination of impersonal and interpersonal sources was responsible for a large number of acceptances of the stainless steel blades.

Lazar and Bell,[10] in comparison to the rural sociological generalization, found in their study of the acceptance of a group of consumer durable products (color television,

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[8]Jagdish N. Sheth, "Perceived Risk and Diffusion of Innovations," in Johan Arndt (ed.), Insights Into Consumer Behavior (Boston: Allyn and Bacon, Inc., 1968), p. 188.

[9]Ibid.

[10]William Lazar and William E. Bell, "The Communication Process and Innovation," Journal of Advertising Research, Vol. 6, No. 3 (September, 1966), pp. 4-5.

stereophonic equipment, automatic dishwashers, and air conditioners) that more respondents first became aware of the product they purchased through interpersonal-informal communication than mass media. Furthermore, they reported that 75 percent of the respondents did not seek out any additional information past the source of original awareness.[11] This unexpected behavior, particularly for expensive consumer durables, may indicate that information gained from initial informal communication exposure was of sufficient quality to make any further search unnecessary for the group of innovators (early purchasers) studied.[12] On the other hand, it is possible that the respondents first became aware of the product or brands through impersonal sources which were obscured by the informal communication which led to their decision to purchase.

It is worthwhile to note that in the Sheth study, where an inexpensive frequently purchased product was the innovation studied, impersonal sources (mass media) tended to dominate much of the adoption process; while in the Lazar and Bell study, where a group of expensive infrequently purchased products was studied, interpersonal-informal sources

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[11] Lazar and Bell, op. cit., p. 5

[12] George Katona and Eva Mueller, "A Study of Purchase Decisions," in Lincoln H. Clark (ed.), Consumer Behavior (New York: New York University Press, 1955), p. 45, have also found similar results with regard to consumer durables.

tended to be a sustaining initial source of information. Future research may indicate that the characteristics of the product play a major role in determining the role of various sources of communication at each adoption stage.

In the area of drug and industrial marketing, there are available several studies which also deserve attention here. In their early marketing study of the impact of sources of information on doctors' drug prescribing behavior, Ferber and Wales[13] found that such interpersonal-formal sources as detail men, and impersonal sources such as medical journals, were the principal means through which doctors became aware of new drug products. Interpersonal-informal sources (e.g., colleague discussions) had their major impact during product evaluation; however, informal sources were still less influential during the evaluation stage than either detail men or journals. Rehder,[14] in another drug adoption study reported that detail men appeared to be a preferred channel of communication with regard to supplying doctors with subtle product differences, such as the comparative side effects of two brands of a

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[13]Robert Ferber and Hugh G. Wales, The Effectiveness of Pharmaceutical Promotions (Urbana, Illinois: The University of Illinois Press, 1958), p. 10.

[14]Robert Rehder, "Communication and Opinion Formation in a Medical Community: The Significance of the Detail Man," Academy of Management Journal, Vol. 8, No. 4 (December, 1965), pp. 282-291.

given ethical drug product. This function of detail men would seem to assist other sources of information during the evaluation stage.[15]

Within the area of industrial marketing, the results of an exploratory study reported by Webster[16] seem to come the closest to conforming to the dual function of impersonal and interpersonal sources of information suggested by the rural sociological generalization. Webster found that industrial respondents (purchasing agents, plant managers, and so forth) identified trade journals as the most important source of information for initial awareness, and manufacturers' salesmen as the most important source of information for the interest, evaluation, trial, and adoption stages.[17] Interestingly, he found that informal sources of communication (buyers in other companies and engineers in one's own company), which in the case of consumer product acceptance by the household seemed so important, were a relatively weak force in industrial markets.[18]

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[15]For similar results with regard to the salesman see: Wilkening, op. cit., p. 366.

[16]Frederick E. Webster, Jr., "Informal Communication in Industrial Markets," Journal of Marketing Research, Vol. 7, No. 2 (May, 1970), pp. 186-189.

[17]Ibid., pp. 188-189.

[18]Ibid.

In another recent industrial marketing adoption study, Ozanne and Churchill[19] found quite different results from Webster. Decision makers in firms which had recently purchased a new automatic machine tool felt that interpersonal-formal sources (particularly salesmen) were most important at all stages in the adoption process. However, impersonal sources (price quotations and tooling proposals) were relatively more important during the evaluation stage than in any earlier stages.[20]

The Ozanne and Churchill study may typify the industrial marketing situation for particularly complex industrial equipment; that is, the selling firm undertook little, if any, impersonal-mass media advertising of its product; rather, it, as is frequently the case, relied on its sales representatives to seek out likely prospects. This would account for the importance of the sales representative throughout the entire adoption process and the lack of importance of impersonal sources early in the adoption process.

At this point the number of consumer and industrial marketing studies is far too few to enable any meaningful conclusions with regard to the relative impact of impersonal and interpersonal sources of information at different stages of the adoption process.

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[19]Urban B. Ozanne and Gilbert A. Churchill, Jr., "Adoption Research: Information Sources in Industrial Purchasing Decision," in Robert L. King (ed.), Marketing and the Science of Planning (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1968), p. 356.

[20]Ibid.

The above studies have concentrated on the impact of sources of communication at different adoption stages. There are also several marketing studies which concentrate on the impact of communication on product acceptance (trial and adoption).

One study, a field experiment reported by Johan Arndt, examines the acceptance of a new brand of regular coffee by wives of graduate students living in university-operated housing.[21] Arndt found that favorable informal conversation aided product acceptance, while negative, or unfavorable, comments hindered acceptance.[22] In addition, while a respondent was eight times more likely to receive favorable comments than unfavorable comments, those who received unfavorable informal communication were more likely not to purchase, than those who received positive word of mouth were likely to purchase.[23] These results point up the importance of the content of communication on product acceptance, and emphasize how unfavorable informal communication may have more of an adverse effect than favorable informal communication has a beneficial effect.

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[21]Johan Arndt, "Role of Product-Related Conversation in the Diffusion of a New Product," Journal of Marketing Research, Vol. 4, No. 3 (August, 1967), pp. 291-295.

[22]Ibid., p. 292.

[23]Ibid.

Robertson[24] found in his study of the acceptance of the touch-tone telephone that those who first accepted the product were more likely to seek out the advice of others, than those who did not purchase. According to Robertson, the non-innovators did not progress to the point of seeking out additional information beyond initial awareness.[25]

In this section the limited number of studies dealing with the impact of impersonal and interpersonal sources of communication on the adoption process, and the acceptance of product innovation have been examined. The results suggest that further research is needed before any marketing generalizations can be established.

The remainder of this chapter is devoted to an examination of the characteristics of the informal communication process, or opinion leadership.

Interpersonal-Informal Communication

Most of the studies examined above, particularly those of consumer product innovations, suggest that informal communication plays an important role in the adoption of

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[24]Thomas S. Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.), Changing Marketing Systems (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1967), pp. 328-332.

[25]Ibid., p. 331.

product innovations. These studies focused primarily on the comparative impact of impersonal and interpersonal sources, rather than on the "process" of informal communication. Since the research results to be presented in Chapter VII examine both the comparative importance of impersonal and interpersonal sources of communication and the process of informal communication, it is necessary to examine the literature of opinion leadership which focuses on the process of informal communication.[26]

Informal communication is in part concerned with the identification and measurement of the communication impact of individuals referred to as "opinion leaders." Rogers[27] has defined opinion leaders as " ... individuals who are influential in approving or disapproving new ideas." Katz and Lazarsfeld,[28] in their examination of opinion leadership, have suggested that opinion leaders provide the

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[26]For an extensive review of the literature of interpersonal-informal communication see: Johan Arndt, Word of Mouth Advertising (New York: An Advertising Research Monograph, Advertising Research Foundation, Inc., 1967); or Johan Arndt, "Word of Mouth Advertising and Informal Communication," in Donald F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior (Boston: Division of Research, Graduate School of Business, Harvard University, 1967), pp. 188-239; and Charles W. King and John O. Summers, Interaction Patterns in Interpersonal Communication (Lafayette, Indiana: Institute for Research in the Behavioral, Economic and Management Sciences, Herman C. Krannert Graduate School of Industrial Administration, Purdue University, Institute Paper No. 168, March, 1967).

[27]Rogers, op. cit., pp. 208-209.

[28]Elihu Katz and Paul F. Lazarsfeld, Personal Influence (New York: The Free Press, 1955), p. 138.

following function: " ... opinion leaders--serve informal rather than formal groups, face-to-face rather than more extensive groups. They guide opinion and its changes rather than lead directly in action."

Three measurement approaches have been employed to identify opinion leaders:[29] (1) the sociometric technique - where the respondent identifies those individuals who he would approach to receive information, or advice, with regard to a product or service; (2) the key informant technique - where an informed party identifies those members of the social system who are the opinion leaders; and (3) the self-designating technique - where the respondent evaluates the extent of his own opinion leadership influence.

Almost all of the marketing studies which will be reviewed here employed the self-designating technique to measure opinion leadership. This approach has the primary feature of relative ease of measurement, particularly when it is not feasible to interview all members of a social system. However, the self-designating approach is subject to bias: an individual may perceive "opinion leadership" as a desirable attribute and therefore over-estimate his own role as an opinion leader.

Intuitively, one may assume that opinion leadership is a rare or infrequently possessed human characteristic.

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[29] Rogers, op. cit., pp. 228-229.

However, two available research studies report the contrary. Silk found that almost half (47.5 percent) of his respondents identified themselves as opinion leaders in one or more of the product categories examined.[30] In a second study, King and Summers also found self-designated opinion leadership to be widespread. In their study of some 976 respondent s, only 31 percent did not qualify as opinion leaders in at least one of the six product areas studied.[31]

Two central points with regard to opinion leadership which have particular relevance to the adoption process--the relationship between innovativeness and opinion leadership, and the opinion leader's influence on others, are considered next.

Opinion Leadership and Innovativeness. In the opening remarks of this section Katz and Lazarsfeld were quoted as stating that opinion leaders " ... guide opinion and its changes rather than lead directly in action."[32] This statement can be interpreted as suggesting that opinion leaders are not usually innovators, but rather that their primary

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[30]Alvin J. Silk, "Overlap Among Self-Designated Opinion Leaders: A Study of Selected Dental Products and Services," Journal of Marketing Research, Vol. 3, No. 3 (August, 1966) pp. 255-295.

[31]Charles W. King and John O. Summers, "Overlap of Opinion Leadership Across Consumer Products," Journal of Marketing Research, Vol. 7, No. 1 (February, 1970), pp. 43-50.

[32]Katz and Lazarsfeld, op. cit., p. 138.

function is to stimulate the actions of others. A review of recent marketing studies indicates that this conclusion may not be justified.

Summers[33] has reported finding that the perceived innovativeness of women's fashion clothing opinion leaders was greater than that of non-opinion leaders. Myers and Robertson found a moderate relationship between being an opinion leader and being innovative.[34] Although these studies do suggest a relationship between opinion leadership and innovativeness, they suffer because their conclusions are based upon subjective measures. In each case the self-designating approach to measuring opinion leadership was employed, and a perceived, rather than actual, measure of innovativeness was generated. Therefore, the results were based solely on the respondents' interpretation and honesty.

However, other research is available which has emphasized direct measurement of innovativeness. Lazar and Bell found that about half of their innovators (the first 10 percent to adopt one or more of a group of consumer durable products), claimed showing the product purchased to others, and that 64 percent of those shown the item, later purchased it.[35] Engel, Kegerreis and Blackwell

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[33]John O. Summers, "The Identity of Women's Clothing Fashion Opinion Leaders," Journal of Marketing Research, Vol. 7, No. 2 (May, 1970), p. 183.

[34]James H. Myers and Thomas S. Robertson, "Dimensions of Opinion Leadership," Journal of Marketing Research (Forthcoming), p. 15.

[35]Lazar and Bell, op. cit., p. 7.

found that innovators of an automotive diagnostic service were asked their opinion more often than a comparative random sample with regard to "new things."[36] More specifically, they report that within a few days after using the service 90 percent had told at least one other person about the experience, and 40 percent had told two or more persons.[37] In still another study, Robertson found that 33 percent of the innovators (touch-tone telephone) could name at least one other person who bought the innovation, in part or in whole, because of their influence.[38]

This group of studies supports the findings of the more subjectively derived research evidence. Furthermore, they suggest that the Katz and Lazarsfeld conclusion that opinion leaders are not usually innovators may not be accurate.

The Opinion Leader's Influence on Others. Three field experiments which examine the influence opinion leaders have on others will next be considered.

John Myers[39] has reported a field experiment designed to measure the nature of influence of opinion leadership.

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[36] James F. Engel, Robert J. Kegerreis and Roger D. Blackwell, "Word-of-Mouth Communication by Innovators," Journal of Marketing, Vol. 33, No. 3 (July, 1969), pp. 15-19.

[37] Ibid., p. 18

[38] Robertson, op. cit., p. 331.

[39] John G. Myers, "Patterns of Interpersonal Influence in the Adoption of New Products," in Raymond M. Haas (ed.) op. cit., pp. 750-757.

In an initial interview of 15 groups of women living in a university community, he determined each of the respondent's propensity to influence through the self-designating opinion leadership technique. For nine of the groups, he selected the individual with the highest opinion leadership score to be an opinion leader confederate. For the other six groups he selected the individual with the lowest score to be a non-opinion leader confederate. Each of the confederates was then supplied with samples of a new freeze-dried food product which she was to try, and then bring a sample to each of the other members of the group. Myers' findings indicate that the opinions of the non-confederate group members shifted in the direction of the opinion leader confederates; while in the non-opinion leader groups, the opinion of non-confederates tended to shift in the opposite direction.[40] These results suggest that opinion leaders are capable of altering group members' opinions in the direction of their opinion; while non-opinion leaders who function as opinion leaders may repulse those whom they attempt to influence. A study reported by Stafford[41] tends to substantiate the

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[40]Myers, op. cit., p. 756.

[41]James E. Stafford, "A Sociometric Analysis of Group Influences on Consumer Brand Preferences," in Peter D. Bennett (ed.), op. cit., pp. 459-460.

the influence of opinion leaders. He found in his study of the impact of group influence on purchasing behavior that opinion leaders possessed a high degree of brand loyalty and that other group members were likely to prefer the same brand, and to develop similar loyalties.[42]

Joseph Mancuso[43] has recently reported the results of a field experiment designed to create opinion leaders.[44] He selected a group of socially influential high school students (class presidents, sports captains, and so forth.) Each student was contacted and asked to be a member of a panel which would rate new rock-and-roll records (which the individual would keep.) Panel members were also encouraged to discuss their choices with friends. Upon preliminary examination it was ascertained that these influential students would not normally have been classified as opinion leaders for records, because of their relatively small ownership of the product category.[45] Mancuso's results indicate that some of the records which the group

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[42]Stafford, op. cit., p. 460.

[43]Joseph R. Mancuso, "Why Not Create Opinion Leaders for New Production Introductions?" Journal of Marketing Vol. 33, No. 3 (July, 1969), pp. 20-26.

[44]For other examples of "controlled opinion leadership" see: Johan Arndt, Word of Mouth Advertising, op. cit.

[45]Mancuso, op. cit., p. 21.

evaluated made the top-ten charts in the cities where the opinion leaders lived, and did not make the top-ten selection in any other cities.[46]

The Myers and Mancuso field experiments indicate the type of influential power opinion leaders may possess.

In this section dealing with the characteristics of informal communication, opinion leadership has been shown to be an important element in the flow of communication concerning product and service innovations.

Conclusion

In this chapter the relationship between the flow of communication and the adoption process has been examined. Particular attention was focused on the process of informal communication and the role played by the opinion leader.

In the following chapter a group of intra-personal variables is examined.

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[46] Mancuso, op. cit., p. 22.

CHAPTER V

INTRAPERSONAL AND OTHER VARIABLES: LITERATURE REVIEW

In the preceding chapter adoption literature dealing with the flow of communication from external impersonal and interpersonal sources were reviewed. In the present chapter the focus is directed inward to a group of intrapersonal variables. In addition, at the end of this chapter several shopping behavior variables and demographic attributes are examined. These two sets of variables are treated together, under the heading "Other Variables."

Intrapersonal Variables

Four predispositional factors--need, experience, perceived risk, and perceived error tolerance (here labeled "intrapersonal variables")--are examined in conjunction with available adoption literature. The term "intrapersonal variables" is employed because it seems to adequately set these variables off from the component parts of the flow of communication, impersonal, and interpersonal sources, which were examined in the last chapter.

Need and Experience. The small amount of literature available which is reviewed here gives evidence that need and experience have received little attention. In addition, two statements appearing in the relevant literature of adoption and marketing substantiate this point. Rogers, in concluding his review of rural sociological research dealing with the impact of communication, raises the following question with regard to experience and adoption:[1]

> Could not the individual's own past experience or his deductions from known information be considered a source of information? The implicit assumption of most past research on this topic is that information sources in the adoption process are external to the individual. It should be cautioned that this is not necessarily so.

In the marketing literature, Donald H. Granbois has made the following point with regard to experience:[2]

> Scant attention has been paid to the questions of how and to what extent information feedback from past experience influences family decisions.

These two statements point up the requirement for systematic examination of the relationship between past experience and purchase behavior. Rogers' statement also

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[1]Everett M. Rogers, Diffusion of Innovation (New York: The Free Press, 1962), p. 105.

[2]Donald H. Granbois, "The Role of Communication in the Family Decision-Making Process," in Stephen A. Greyser (ed.), Toward Scientific Marketing (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1963), p. 200.

questions the almost exclusive concern with the impact of external sources of communication. In Chapters VII and VIII primary attention is focused on presenting the results of a field experiment which has as one of its central points of concern the impact of need and experience on the decision to try a new consumer product.

Need is viewed as a drive, or motivation, which when either consciously or unconsciously aroused stimulates direct purchase reaction, or search for information which may be used in solving a given consumption problem.[3] Need is, therefore, a trigger for search.

It seems logical that an individual would usually search his memory for past experience before seeking out external sources of information pertaining to a given consumer need. In this sense, past experience is an internal source of information. The idea that there is a consumer process of internal search is not a new one. Nicosia, in his model of consumer behavior, includes a process of internal search, which he defines as follows:[4]

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[3]Need is used in a similar context by James F. Engel, David T. Kollat and Roger D. Blackwell, Consumer Behavior (New York: Holt, Rinehart and Winston, Inc., 1968), pp. 41-42; and Bernard Berelson and Gary A. Steiner, Human Behavior: An Inventory of Scientific Findings (New York: Harcourt, Brace and World, Inc., 1964), p. 239.

[4]Francesco M. Nicosia, Consumer Decision Processes (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966) p. 174.

> The consumer consciously or unconsciously retrieves information from his social psychological field that seems to him to concern the advertised brand, the product, the firm that manufactures and/or sells the product, its competitors, and so forth.

Also, Walters and Paul[5] in defining experience see it as an internal source of information. They say:

> Personal experience is the consumer's ability to recall previous problems, comparisons, satisfactions, and solutions. These experiences may be considered internal sources of information.

With regard to the dynamics of internal search, if the individual deems his existing knowledge as satisfactory, little or no additional information may be necessary to make a decision. On the other hand, if the individual has had little or no relevant past experience, his need for external sources of information may be great. Accordingly, Engel, Kollat and Blackwell state:[6]

> The amount of stored information is a function of both the length and breadth of experience. The greater the length of time that brands comprising the generic product have been purchased the lower the propensity to search. Similarly, the greater the number of brands of the generic product that have been purchased, the lower the propensity to search.

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[5]C. Glenn Walters and Gordon W. Paul, Consumer Behavior (Homewood, Illinois: Richard D. Irwin, Inc., 1970), p. 200.

[6]Engel, Kollat and Blackwell, op. cit., p. 383.

As proposed above, past experience may be viewed as an internal source of information. The more past experience an individual possesses, the less external sources of information he is likely to require in order to reach a decision. However, it seems likely that for many consumer decision-making situations, a combination of past experience (internal source) and impersonal and interpersonal communication (external sources) may be required before a decision can be reached.

The following review of the research literature concerned with need and experience examines those studies which directly relate need and experience to the acceptance of product innovations.

Need and Experience and the Acceptance of Innovation

Although need and experience can be thought of as separate constructs, the marketing literature has not tended to treat these two variables individually; rather, need has been implicitly inferred from experience and, therefore, the small number of studies presented here deal primarily with experience.

Sheth found that those who needed to shave daily (heavy users) were quicker to adopt stainless steel blades than occasional shavers.[7] He also found that experienced

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[7]Jagdish N. Sheth, "Perceived Risk and Diffusion of Innovations," in Johan Arndt (ed.), Insights Into Consumer Behavior (Boston: Allyn and Bacon, Inc., 1968), p. 188.

shavers (based upon the number of years shaving) were quicker to adopt than inexperienced shavers.[8] Likewise, Arndt has reported a strong relationship between heavy coffee consumption and trial of a new brand.[9]

These studies indicate the importance of experience and the related factor, "extent of usage."

Bauer, in his study of the acceptance of new drug products by physicians, has reported that " ... company preference appears to influence not only the probability that a drug will be tried in its early stages, but also that it will be preferred."[10] It is inferred here that a physician's preference for certain brand names of drugs may be associated with past satisfactory experience with other products offered by the same firm. If this is the case, it is also indicative of the importance of experience.

Bylund, in his study of the willingness of homemakers to try new food products, found that "high triers were more likely to have eaten something out and then tried it home."[11] This is again indicative of the importance of experience.

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[8]Sheth, op.cit.

[9]Johan Arndt, Word of Mouth Advertising: The Role of Product-Related Conversations in the Diffusion of A New Food Product. (Unpublished Doctoral Dissertation, Graduate School of Business Administration, Harvard University, 1966), p. 111.

[10]Raymond A. Bauer, "Risk Handling in Drug Adoption," Public Opinion Quarterly, Vol. 25, No. 4 (Winter, 1961, p. 553.

[11]Bruce H. Bylund, "Social and Psychological Factors Associated with Acceptance of New Food Products," Bulletin 708 (University Park, Pennsylvania: Agricultural Experimental Station, Pennsylvania State University, 1963), in Ralph Day (ed.) Marketing Models (Scranton, Pennsylvania: International Textbook Company, 1964), p. 160.

Although there are only a small number of studies in the marketing adoption literature which are concerned with experience, the evidence suggests that experience is an important variable with regard to trial and acceptance.

Perceived Risk. Risk perception is founded on the acceptance of the premise that consumers are problem solvers. Such a notion of consumer behavior was advanced in the writing of Wroe Alderson,[12] who defines a "problem" as " ... an issue involving uncertainty as to the course of action to pursue in an operating situation." Further, he said "To solve a problem is to reduce uncertainty to the point where a course of action can be adopted with some confidence."[13]

Although Alderson had captured the essence of perceived risk in his 1957 book, it is Raymond Bauer's 1960 paper which is cited as the initial force behind the interest in, and investigation of, the relationship between perceived risk and buyer behavior.[14] In his paper, Bauer specifies that it is "perceived risk" rather than just "risk" which is at question, since individuals

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[12]Wroe Alderson, Marketing Behavior and Executive Action (Homewood, Illinois: Richard D. Irwin, Inc., 1957).

[13]Ibid., p. 167.

[14]Raymond A. Bauer, "Consumer Behavior as Risk Taking," in R. S. Hancock (ed.), Dynamic Marketing for a Changing World (Chicago: Proceedings of the Summer Conference of the American Marketing Association, 1960), pp. 389-398.

respond to what they perceive, and not necessarily what is.[15] On this same point, Bucklin[16] recently wrote that "Perceived risk differs from the concept of economic risk in that consumers facing identical conditions (similar economic risk) sense varying degrees of hazard." Both of these comments suggest that perceived risk is a form of subjective rather than objective risk.

Cox,[17] in an in-depth study of the purchasing behavior of two young housewives, found that perceived risk emerged as an important element of the decision making process. The evidence indicates that perceived risk was not necessarily limited to functional and economic factors, but might have been psychosocial, i.e., uncertainty of the reaction of others to one's purchase of a new product.[18]

Weinstein and Martin,[19] in a recent laboratory experiment designed to relate material risk (i.e., economic risk) to personality measures which were hypothesized to be

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[15]Bauer, op. cit., p. 395.

[16]Louis P. Bucklin, "Consumer Search, Role Enactment, and Market Efficiency," The Journal of Business, Vol. 42, No. 4 (October, 1969), p. 417.

[17]Donald F. Cox, "Risk Handling in Consumer Behavior - An Intensive Study of Two Cases," in Donald F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior (Boston: Division of Research, Graduate School of Business, Harvard University, 1967), p. 70.

[18]Ibid.

[19]Eugene Weinstein and Jerald Martin, "Generality of Willingness to Take Risks," Psychological Reports, Vol. 24, No. 2 (April, 1969), pp. 499-501.

relevant to taking interpersonal risk (what Cox would call psychosocial risk), found only a small amount of overlap between the two types of risk. However, since their results are only exploratory and are not in terms directly related to marketing practices, it is difficult to draw any conclusions from this study. This points up the need for further marketing examinations of the interrelationship between various types of risk and consumer behavior.

The remainder of the present discussion will be devoted to an examination of the following aspects of perceived risk: (1) the intrapersonal and social factors which may produce perceived risk; (2) the defining and measuring of perceived risk; (3) the differences in perceived risk between and within product categories; and (4) the various strategies which a consumer may employ to reduce perceived risk.

Intrapersonal and Social Factors Leading to Perceived Risk

The following comprehensive list of intrapersonal and social factors which may determine if perceived risk is present and, if so, the amount, has been suggested by Granbois:[20]

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[20] Donald H. Granbois, "The Role of Communication in the Family Decision Making Process," in Stephen A. Greyser (ed.), op. cit., pp. 53-54.

1. The consumer has had little or no relevant past experience because he has never purchased the product.

2. The consumer has had no past experience because the product is 'new.'

3. Past experience with a product has been unsatisfactory.

4. The purchase is considered discretionary rather than necessary.

5. The 'correct' selection is especially important to the consumer, as when the purchase is for a gift.

6. The purchase is socially 'visible.'

7. All available alternatives may have both desirable and undesirable consequences, and positive arguments may be needed.

8. Disagreement among members of the family unit as to requirements and/or the evaluation of alternatives results in need for further information to persuade dissenters, or to discover a satisfactory compromise.

9. The consumer recognizes that his behavior deviates from that of an important reference group.

10. The consumer perceives important changes in the economic or political environment.

This list indicates that perceived risk may arise because of a number of personal and social reasons. However, which of these factors describe a particular buying situation has not been examined in the literature as yet.

Defining and Measuring Perceived Risk

Although Bauer suggests the need for measuring perceived risk and relating it to consumer behavior, it was his colleagues at Harvard who principally developed systematic measures of perceived risk. Scott M. Cunningham[21] has developed the major approach for measuring perceived risk. He has identified two component measures of risk perception--uncertainty and consequences.[22] These two components are operationalized by asking respondents two questions with a four-point scale:[23]

> Uncertainty
> Would you say that you are: very certain; usually certain; sometimes certain; or almost never certain that a brand of (some product category) you haven't tried will work as well as your present brand?
>
> Consequences
> We all know that not all products work as well as others. Compared to other products, would you say that there is: a great deal of danger; some danger; not much danger; or no danger in trying a brand (some product category) you have never tried before?

For each possible response in the two perceived risk component questions a weight is established. A respondent's

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[21] Scott M. Cunningham, "Perceived Risk as a Factor in Informal Communication," in Donald F. Cox (ed.), op. cit., pp. 265-287.

[22] Ibid., pp. 266-267.

[23] Ibid.

level of perceived risk (low, medium or high) is determined by multiplying the weights corresponding to the responses he chooses for the two questions.[24]

Arndt[25] has employed a two question measure of perceived risk in his study of the acceptance of a new brand of regular coffee, a measure which is a modification of Cunningham's measurement approach. His two components are uncertainty and importance. They are measured by the following two questions:[26]

> Uncertainty
> How certain are you that a brand of coffee you have not tried yet will be as good value for money as your present brand: very certain; usually certain; sometimes certain; or never certain?
>
> Importance
> How important is it to you that a new brand of coffee you have never tried before is as good as your present brand: not important; fairly important; important; or very important?

King and Summers also have modified the Cunningham measure and used the following questions to estimate perceived risk:[27]

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[24]For more detail see: Scott M. Cunningham, "The Dimensions of Perceived Risk," in Donald F. Cox (ed.), op. cit., pp. 84-85.

[25]Johan Arndt, Word of Mouth Advertising: The Role of Product-Related Conversations in the Diffusion of A New Food Product, op. cit., p. 75.

[26]Ibid.

[27]Charles W. King and John O. Summers, "Technology, Innovation and Consumer Decision-Making," in Reed Moyer (ed.) Changing Marketing Systems (Proceedings of the Winter Conference of the American Marketing Association, 1967), p. 68.

Perceived Certainty of Satisfaction
In general, how sure are you that new _____ are at least satisfactory? (very unsure; generally unsure; generally sure; and very sure)

Perceived Seriousness of Dissatisfaction
How serious would it be for you and your family if you bought a new _____ and it wasn't satisfactory? (not serious at all; annoying, but not serious; serious; and very serious)

As a final illustration, Robertson has measured risk perception with regard to a group of product categories by means of the following question:[28]

> We all know that not all products work as well as others. Please indicate how dangerous or safe you feel it is to buy new products instead of established products.
>
> Dangerous O o . . o O Safe

It is evident that each of these measurement approaches is linked to Cunningham's earlier work.

Between and Within Product Category Perceived Risk.

Two basic conclusions can be derived from past perceived risk research with regard to product categories:

1. That perceived risk varies between product categories; some product categories will generally be viewed as involving more risk than others. This is basically between product perceived risk.

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[28]Thomas S. Robertson, "The Effect of the Informal Group Upon Innovative Behavior," in Robert L. King (ed.), Marketing and the New Science of Planning (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1968), p. 337.

2. That perceived risk varies between individuals; some individuals will perceive more risk within a product category than will other individuals.

The available research evidence which examines these two points will be reviewed.

With regard to between product category risk perception, Cunningham found, as hypothesized, that headache remedies were perceived by respondents as most risky, fabric softeners as next, and dry spaghetti as least risky.[29] In another study, King and Summers[30] report that the perceived risk of a sample of respondents was low for packaged food products, household cleaners and detergents, and cosmetics and personal grooming aids, in comparison with the high perceived risk for women's clothing fashions. They suggest that the difference may be due to higher costs and greater visibility in the case of the fashion items.[31] Both studies indicate that perceived risk varies between product categories.

Robertson[32] found that slightly less risk was perceived with regard to food than clothing or appliances. The mean

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[29]Scott M. Cunningham, "Perceived Risk as a Factor in the Diffusion of New Product Information," in Raymond M. Haas (ed.), Science, Technology, and Marketing (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1966), p. 701.

[30]Charles W. King and John O. Summers, "Technology, Innovation and Consumer Decision-Making," op. cit., p. 68.

[31]Ibid.

[32]Thomas S. Robertson, "The Effect of the Informal Group Upon Innovative Behavior," op. cit., p. 339.

level of perceived risk with regard to clothing and appliances was almost identical.[33] In relating perceived risk to a measure of innovativeness for each of the three products studied, Robertson found innovativeness to be closely associated with low perceived risk. However, with regard to each of the three product categories, he only found a significant positive relationship between low perceived risk and the purchase of food items.[34] In a similar study of electric toothbrushes, electric dishwashers, and soft margarine, Arndt found that 15 percent of his respondents reported that they were "unsure" about picking a brand of soft margarine, as compared with 22 percent for electric toothbrushes, and 31 percent for electric dishwashers.[35] As in Robertson's study, Arndt found an inverse relationship between innovativeness and perceived risk.[36]

Each of the above studies indicates that perceived risk varies between product categories, that is, consumers perceive certain product categories as being riskier than others.

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[33]Robertson, op. cit., p. 338.

[34]Ibid., p. 340.

[35]Johan Arndt, "New Product Diffusion: The Interplay of Innovativeness, Opinion Leadership, Learning, Perceived Risk and Product Characteristics," Markedskommunikasjon, Vol. 5, No. 2 (1968), p. 8.

[36]Ibid., p. 4.

Arndt[37] has reported the only study of within product category perceived risk related to actual purchase behavior. He found that low risk perceivers were more likely to purchase a new brand of regular coffee than high risk perceivers. More specifically, 55 percent of the low risk perceivers purchased the new coffee product, while only 36 percent of the high risk perceivers purchased the product.[38]

Although only this one study of "within product" category risk perception has been reported, the evidence is consistent with what one might expect, namely, that risk varies among people as well as between product categories. However, the important element of "within" measures of perceived risk, as indicated by Arndt's study, is its specific reference to actual product acceptance by a group of individuals. More within perceived risk studies tied to actual purchase behavior are necessary to substantiate this single study.

Strategies of Risk Reduction

Bauer in considering risk reduction, has stated: "Consumers characteristically develop decision strategies and ways of reducing risk that enable them to act with relative confidence and ease in situations where their

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[37]Johan Arndt, "Role of Product-Related Conversations in the Diffusion of a New Product," Journal of Marketing Research, Vol. 4, No. 3 (August, 1967), pp. 291-295.

[38]Ibid., p. 294.

information is inadequate and the consequences of their actions are in some meaningful sense incalculable."[39] In this same paper Bauer discusses the implications of interpersonal communication and brand loyalty as strategies of consumer risk reduction.[40] Studies which bear on these two strategies of risk reduction will now be reviewed.

In their study of the acceptance of drugs by physicians, Coleman, Katz and Menzel report that doctors who adopt a new drug product during the first few months rely more on interpersonal contact with colleagues than physicians who adopt after the first few months. They suggested that there was greater uncertainty during the first few months, and that contact with colleagues may have aided in the reduction of this uncertainty.[41]

Cunningham[42] found that for two or three product categories studied, the two more risky product categories (headache remedies and fabric softeners), those respondents who were high in perceived risk were more likely to reduce risk through product conversation than those who were low in perceived risk. Specifically, 38 percent of the headache remedy users, 45 percent of the fabric softener users

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[39]Raymond A. Bauer, "Consumer Behavior as Risk Taking," in R. S. Hancock (ed.), op. cit., p. 390.

[40]Ibid., pp. 391-392.

[41]James Coleman, Elihu Katz and Herbert Menzel, "The Diffusion of an Innovation Among Physicians," Sociometry, Vol. 20, No. 4 (December, 1957), p. 269.

[42]Scott M. Cunningham, "Perceived Risk as a Factor in Informal Communication," op. cit., pp. 271-272.

and 8 percent of the dry spaghetti users reported discussing the products in the last six months.[43]

Earlier in this chapter the impact of past experience was presented as an alternative to seeking out of external sources of information. It would seem that, given any level of experience, it is conceivable that perceived risk may moderate the amount of additional information (if any) an individual may deem necessary before making a decision.

If an individual is a low risk perceiver, he may rely on his past experience (if he has any) and/or seek a relatively small amount of information from external sources. On the other hand, if an individual is a high risk perceiver, he may in addition to any internal knowledge, seek out a substantial amount of additional information before committing himself to any final decision.

Therefore, low risk perceivers who are experienced may require little, if any, additional external sources of information, while high risk perceivers who are experienced may still require additional information from external sources before making a decision. This seems to suggest that perceived risk acts as a monitor with regard to the total amount of information (internal and external) necessary before an individual's level of knowledge is appropriate to the amount of risk he perceives.

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[43]Cunningham, op. cit., pp. 267-268.

It will be recalled that Bauer proposed that brand loyalty is also a strategy which may enable a consumer to reduce risk.[44] Three studies reported in the marketing literature tend to confirm this relationship.

Cunningham[45] found, for each of three product categories studied, that risk perception and brand loyalty were positively related. He concluded that " ... loyalty to one brand is a method of risk reduction."[46]

Johan Arndt, in his study of the acceptance of a new brand of regular coffee, reports that those respondents who had a high level of perceived risk were more brand loyal, and less likely to purchase private or store brands of coffee.[47]

Engel, Knapp and Knapp, in their study of self-medication strategies, also found that well known brand names assist in reducing risk.[48]

In this examination of perceived risk, two possible risk reduction strategies have been explored--informaion seeking and brand loyalty. Now attention will be turned to a new related intrapersonal variable, "Perceived error tolerance."

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[44]Raymond A. Bauer, "Consumer Behavior as Risk Taking," in R. S. Hancock (ed.), op. cit., p. 390.

[45]Scott M. Cunningham, "Perceived Risk and Brand Loyalty," in Donald F. Cox (ed.), op. cit., pp. 507-523.

[46]Ibid., pp. 512-513.

[47]Johan Arndt, "Role of Product-Related Conversations in the Diffusion of a New Product," op. cit., p. 294.

[48]James F. Engel, David A. Knapp and Deanne E. Knapp, "Sources of Influence in the Acceptance of New Products for Self-Medication: Preliminary Findings," in Raymond M. Haas (ed.), op. cit., p. 777.

Perceived Error Tolerance. Perceived error tolerance is not to be found in the literature; it is a phrase offered by the writer to describe an intrapersonal variable related and complementary to perceived risk. Here brief consideration will be given to the nature and the several existing research studies upon which this variable is based.

The perceived error tolerance variable is conceived of as a measure of a consumer's willingness to try new products. It relates to risk perception because those consumers who are eager to try new products seemingly have a predisposition to run the risk of trying some which will be less than satisfactory. On the other hand, those consumers who prefer to wait and let others "try it for them" are seemingly willing to run the risk of not initially benefitting from some products which they would find satisfactory.

The consumer who has a preference for trying new products as they first come out (innovator) is selecting a risk strategy to be called inclusion, while the consumer who prefers to wait is employing a risk strategy to be called exclusion.

Like perceived risk, this intrapersonal variable is subjective; it is based upon what the consumer feels, rather than how the consumer behaves. Perceived error tolerance

augments perceived risk by suggesting a predisposition or "mental set" for trying or not trying new products. Although it may be related to the trial of a specific product, unlike perceived risk it is not designed to measure specific product risk; rather, it is a measure of a generalized tendency to react. As will be observed shortly, the variable is related to "venturesomeness;" however, it is broader than venturesomeness in that it directly estimates both tendencies for inclusion and exclusion, while venturesomeness usually measures only inclusion and, even then, without reference to a risk strategy.

Perceived error tolerance, like perceived risk, may also moderate the amount of information an individual requires before feeling "comfortable" about trying a product innovation. If an individual prefers to try new products as they first appear (the inclusion strategy), he may rely on his past experience and/or require less external information than if he were to prefer to wait for others to try it first (the exclusion strategy).

The development of perceived error tolerance has benefitted from the following research studies which employ variables that are characteristic of, or related to, the perceived error tolerance variable.

A Review of Supporting Research

A psychological theory base for perceived error tolerance can be traced to the research of Pettigrew.[49] Pettigrew proposed a variable called "category width" which may be a dimension of risk taking. He found that when subjects were asked to estimate maximum and minimum values for a group of items such as "the width of windows," or "the speed of birds in flight" they maintained a consistency in their category range.[50] Some subjects consistently offered either broad, medium, or narrow estimates of category width. It is suggested that broad categorizers are reflecting a willingness to accept a type I error--that is, a preference to include negative outcomes so as to increase the likelihood of including positive outcomes. On the other hand, narrow categorization may be symptomatic of a willingness to accept a type II error--that is, preference to exclude positive outcomes to increase the likelihood of excluding negative outcomes.[51]

Pettigrew indicates that there is a need for further research to ascertain the link between category width and risk taking.[52]

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[49]Thomas F. Pettigrew, "The Measurement and Correlates of Category Width as a Cognitive Variable," Journal of Personality, Vol. 26, No. 4 (December, 1958), pp. 532-544.

[50]Ibid., pp. 532-536.

[51]Ibid., p. 532.

[52]Ibid., pp. 542-543.

In the marketing literature, Popielarz has reported an exploratory study designed to examine the relationship between the two types of risk suggested by Pettigrew, and willingness to try new products.[53] He suggests that triers of new products are willing to assume the risk of purchasing some products which may not prove to be satisfactory, so as to increase the likelihood of including those which will prove satisfactory. On the other hand, non-triers assume a behavioral pattern which leads to infrequent purchase of products which may prove unsatisfactory.[54] In short, triers are willing to run the risk of inclusion, while non-triers are willing to run the risk of exclusion of new products.

Popielarz selected 61 male and female undergraduate university students for his exploratory experiment. Pettigrew's category width scale was used as a measure of student subject generalized breadth of categorization.[55] Students were then instructed to assume that they were anticipating buying a needed product in each of six product categories and that they had enough money to purchase the products.[56]

For each product category, student subjects were required to indicate their willingness to buy each of four qualitatively different brands. The brands varied on either

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[53]Donald T. Popielarz, "An Exploration of Perceived Risk and Willingness to Try New Products," Journal of Marketing Research, Vol. 4 (November, 1967), pp. 368-372.

[54]Ibid., p. 368.

[55]Ibid., p. 369.

[56]Ibid., p. 370.

or both "newness of the product" or "familiarity of the brand name." Subjects rated their willingness to buy each of the products on an 11 point scale, with choices ranging from "extremely willing to buy" to "extremely unwilling to buy."[57]

The results support the hypothesized relationship between category width and willingness to buy new products; namely, that those student subjects who were willing to commit errors of exclusion, narrow categorization (type II error), are less willing to try a new product than subjects who were willing to commit errors of inclusion, wide categorization (type I error).[58]

Popielarz's exploration is basically a "simulation" of behavior, since there was no actual commitment of resources to purchase. Therefore, although the evidence suggests that those who are willing to make a type I error are more willing to perceive trying new products, and those who are willing to make a type II error are less willing to perceive trying new products, there is no measure of actual purchase behavior. Also, it would seem desirable to replace Pettigrew's general psychological measure of category width with a specific marketing related measure.

In the chapters to follow the writer will introduce new specific marketing measures of category width, "perceived error tolerance," and relate them to actual product purchase activities.

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[57]Popielarz, op. cit., p. 370.

[58]Ibid., p. 371.

The closest market oriented measures of what is here referred to as "perceived error tolerance" have been reported in a study of a sample of homemakers by Bylund.[59] In measuring attitudes toward new food products, he used the following five statements:[60]

1. I would rather wait until others have tried a new product before trying it myself.
2. A person who frequently tries new food products is wise.
3. A person shouldn't be in a hurry to try food products that are too new.
4. I enjoy trying new food products.
5. New products might be all right, but you are usually better off sticking with those products you are sure about.

For each statement a four point scale which ran from "strongly agree" to "strongly disagree" was used to generate an attitude measurement for each respondent. Bylund's results for each of the five questions indicated a statistically significant relationship between being "high triers" (those who tried the most new products) and having a perceived preference for trying new food items.[61]

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[59]Bylund, op. cit., pp. 145-174.

[60]Ibid., pp. 165-168.

[61]Ibid.

In two recent adoption studies reported in the marketing literature, Robertson[62] and King and Summers[63] examined the variable "venturesomeness." Robertson defines "venturesomeness" as " ... willingness to take risks in the purchase of new products."[64] Venturesomeness is similar to one of the two comments of the perceived error tolerance variable, that is, the willingness to risk a type I error of inclusion. Since venturesomeness is closely related to the "perceived error tolerance" variable, it is worthwhile to examine the results of these two studies.

Robertson found that innovators (with regard to the touch-tone telephone) were significantly more venturesome than non-innovators.[65] King and Summers found that over one-third of their respondents enjoyed testing and experimenting with new packaged food products and house cleaners, while only 23 percent and 8 percent enjoyed trying new cosmetics and personal grooming aids, and women's

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[62]Thomas S. Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.), op. cit., pp. 328-332.

[63]Charles W. King and John O. Summers, "Technology, Innovation, and Consumer Decision-Making," in Reed Moyer (ed.), op. cit., pp. 63-68.

[64]Thomas S. Robertson, Determinants of Innovative Behavior," in Reed Moyer (ed.), op. cit., p. 328.

[65]Ibid., p. 330.

clothing fashions, respectively.[66] They suggest that such factors as comparative cost, frequency of purchase, and social visibility may account for the difference between product categories.[67]

The Robertson study indicates that venturesomeness is associated with innovative behavior, which is the act (rather than the perception) of carrying out a strategy of inclusion. The King and Summers study indicates that an individual's venturesomeness will vary among product categories.

The above discussion was focused on establishing a foundation for a new intrapersonal variable, "perceived error tolerance." As previously mentioned, this variable will be examined in the chapters which follow.

In the next and last section of this chapter, the literature dealing with two other sets of variables, shopping behavior and demographic attributes, will be examined as they pertain to the adoption of new products.

Other Variables

In this last section, research evidence dealing with a group of shopping behavior variables and demographic attributes will be examined as they relate to the adoption process.

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[66]Charles W. King and John O. Summers, "Technology, Innovation and Consumer Decision-Making," in Reed Moyer (ed.) op. cit., pp. 64-65.

[67]Ibid.

Shopping Behavior. The number of studies which relate such aspects of shopping as frequency of shopping, number of stores visited, frequency of shopping with others, and use of special offer coupons to new product adoption are limited.

Fisk, in his study of the acceptance of food products, found that the "store shelf or freezer" was a particularly important source of information.[68] This indicates that the act of shopping is capable of playing an important role in product trial and adoption. A study by Bucklin gives support to the importance of shopping.[69] He found that the extent of brand knowledge, product feature knowledge and preference for particular retail outlets may influence the amount of shopping/search for information a consumer is willing to undertake before purchasing a non-food product.[70]

Closely related to shopping is the use of coupons and special promotions by consumers. Webster[71] has examined a variable called "deal proneness." The deal prone consumer

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[68]George Fisk, "Media Influence Reconsidered," Public Opinion Quarterly, Vol. 23, No. 1 (Spring, 1959), p. 86.

[69]Louis P. Bucklin, "Testing Propensities to Shop," Journal of Marketing, Vol. 30, No. 1 (January, 1966), p. 26.

[70]Ibid.

[71]Frederick E. Webster, Jr., "The 'Deal-Prone' Consumer," Journal of Marketing Research, Vol. 2, No. 2 (May, 1966), pp. 186-189.

is presented as an individual who has a propensity to react favorably to such promotional tools as price-off coupons and premiums.[72] Arndt found a strong positive relationship between acceptance of a new brand of coffee and deal proneness.[73] Arndt's results are understandable in light of the fact that he employed a price-off coupon to stimulate initial awareness and interest in the new brand of coffee. The evidence examined here regarding shopping behavior is both fragmentary and incomplete.

The next and last portion of this chapter is devoted to an exploration of the relationship between demographic attributes and new product adoption.

Demographic Attributes. As was the case with shopping behavior, the amount of marketing literature which relates demographic attributes to new product acceptance is less than desirable.

Bylund, in his study of the acceptance of new food products by a group of homemakers, found that the number of years of education, total family income, and the size of the household were positively related to the number of new food products tried, while age was negatively related to trial.[74] He found no significant relationship between occupation and trial.[75]

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[72]Webster, op. cit., pp. 186-187.

[73]Johan Arndt, Word of Mouth Advertising: The Role of Product-Related Conversations in the Diffusion of A New Food Product, op. cit., pp. 98-99.

[74]Bylund, op. cit., pp. 147-150.

[75]Ibid., p. 148.

Robertson found that innovators were more privileged (a composite of income, number, and age of children, and self-perception of economic standing in the community) than non-innovators.[76]

Arndt reported contrary results. He found that older respondents (29 years or older) were almost twice as likely to be among the earliest group to purchase the brand of coffee than younger respondents.[77] He also indicated that the number of years married, and the number of children, did not significantly distinguish between triers and non-triers.[78]

Feldman, in his study of the relationship between external and internal sources of information, and the process of selecting a family physician, found that as the age of the respondent progressed, the relative importance of information sources shifted.[79] Table IV shows this relationship.

Feldman's results advance the premise that the youngest group of respondents tends to seek outside interpersonal sources of information, particularly from relatives, while the oldest group tends to rely primarily on intrapersonal variables, past experiences, and individual judgment. These

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[76]Thomas S. Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.), op. cit., p. 331.

[77]Johan Arndt, Word of Mouth Advertising: The Role of Product-Related Conversations in the Diffusion of A New Food Product, op. cit., p. 118.

[78]Ibid., pp. 123-125.

[79]Sidney P. Feldman, "Some Dyadic Relationships Associated with Consumer Choice," in Raymond M. Haas (ed.) op. cit., p. 774.

TABLE IV

RELATIONSHIP BETWEEN AGE AND SOURCES OF INFORMATION WITH REGARD TO THE SELECTION OF A FAMILY PHYSICIAN

Sources of Information	Median Age of Seeker
Relatives	28.1 years
Non-relatives	32.9 "
Professionals	33.9 "
Own Judgment	39.2 "

Source:
Sidney P. Feldman, "Some Dyadic Relationships Associated with Consumer Choice," in Raymond M. Haas (ed.), Science, Technology, and Marketing (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1966), p. 774.

data not only suggest the impact of age on the source of information used in selecting a physician, but they also support the importance of intrapersonal variables which increase with age.

There are too few studies to form any consistent pattern. Fortunately, Rogers and Stanfield have tabulated diffusion and adoption studies of the correlation between innovativeness and demographic factors.[80] In 75 percent of the studies which measure level of education, 80 percent which measure income, and 83 percent which measure "level of living," a positive relationship with innovativeness was found. The results regarding age are not clear--32 percent show a positive relationship, while 50 percent show either no relationship or a conditional relationship.[81]

This completes the review of available research which examines demographic attributes.

Conclusion

In this chapter both intrapersonal and other variables have been related to adoption research. The evidence indicates the potential importance of the intrapersonal variables. However, the literature review also indicates that more research is required in all areas but particularly regarding the intrapersonal variables.

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[80]Everett M. Rogers and David Stanfield, "Adoption and Diffusion of New Products: Emerging Generalizations and Hypotheses," in Frank M. Bass, et. al. (eds.) Application of the Sciences in Marketing Management (New York:John Wiley & Sons, Inc., 1968), p. 240.

[81]Ibid.

Chapters II through V have been devoted to an examination of a diffusion/adoption paradigm. The remainder of this dissertation is devoted to a description of the background and results of an adoption field experiment undertaken by the writer.

In the next chapter a research model, research design, and hypotheses are explored.

CHAPTER VI

RESEARCH DESIGN AND MODEL

The preceding four chapters were prepared to serve as a foundation for the field experiment which will be the focus of attention for the remainder of this dissertation. This chapter will examine the following aspects of the field experiment: (1) the research design, (2) the research model, (3) the variables, (4) the hypotheses, and (5) the data analysis approach.

Design of the Study

The points to be explored with regard to the design of the field experiment are: the selection and characteristics of the respondent group, the product, the use of a letter and coupon, the research procedure, the pilot studies, the retail availability of the product, and the interviewing procedure and field questionnaire.[1]

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[1]The design of this field study, particularly the research procedure, was influenced by Johan Arndt's study of the acceptance of a regular brand of coffee by the wives of graduate students living in university operated housing; see: Word of Mouth Advertising: The Role of Product-Related Conversations in the Diffusion of A New Food Product (Unpublished Doctoral Dissertation, Graduate School of Business Administration, Harvard University, 1966).

Selection and Description of the Respondent Group

In order to study the food purchasing behavior of the elderly, it was useful to select a geriatric community which offered housing designed for people who: (1) did their own shopping; (2) prepared their own food; and (3) constituted a self-contained community, that is, a community set aside solely for the elderly, in order to facilitate the sociometric measurement of patterns of opinion leadership, and word-of-mouth product related conversation. Primarily, these requirements disqualified a large number of nursing homes and geriatric institutions where meals and services are provided for all residents.

With these factors in mind, the cooperation of Self-Help, Inc. was secured. This organization made available for the purpose of this field experiment the Kissena I community, a geriatric housing facility operated by Self-Help.

The Kissena I community is located in the heart of Flushing, Queens (City and State of New York). The community is composed of a modern, twelve-story apartment house type of dwelling. It is attached to a YM-YWHA building, with recreational and social facilities, which are available to the residents of Kissena I. Almost all of the residents have occupied their apartments since the community first opened, about six years ago. Most of the residents were born

in Europe, and came to the United States to avoid or escape persecution by the Nazis; they are all of the Jewish faith; all who had worked are retired. Approximately 40 percent of the residents are members of intact conjugal families (composed of a husband and wife); all but one of the remaining residents are widowed or single females. The mean average age of the respondents is 74 years. Figure VI presents a histogram of the age distribution of the respondent group. It shows that over 40 of the 100 respondents are in the 71-75 years age group; in addition, 82 of the 100 residents interviewed are over 71 years of age.

For the following two reasons it was decided to limit the interviewing to female residents: (1) this research policy would enable the most direct comparison with other adoption research projects which have almost exclusively studied all female sample groups;[2] and (2) there was only one household which did not have either a female member or a single female occupant.

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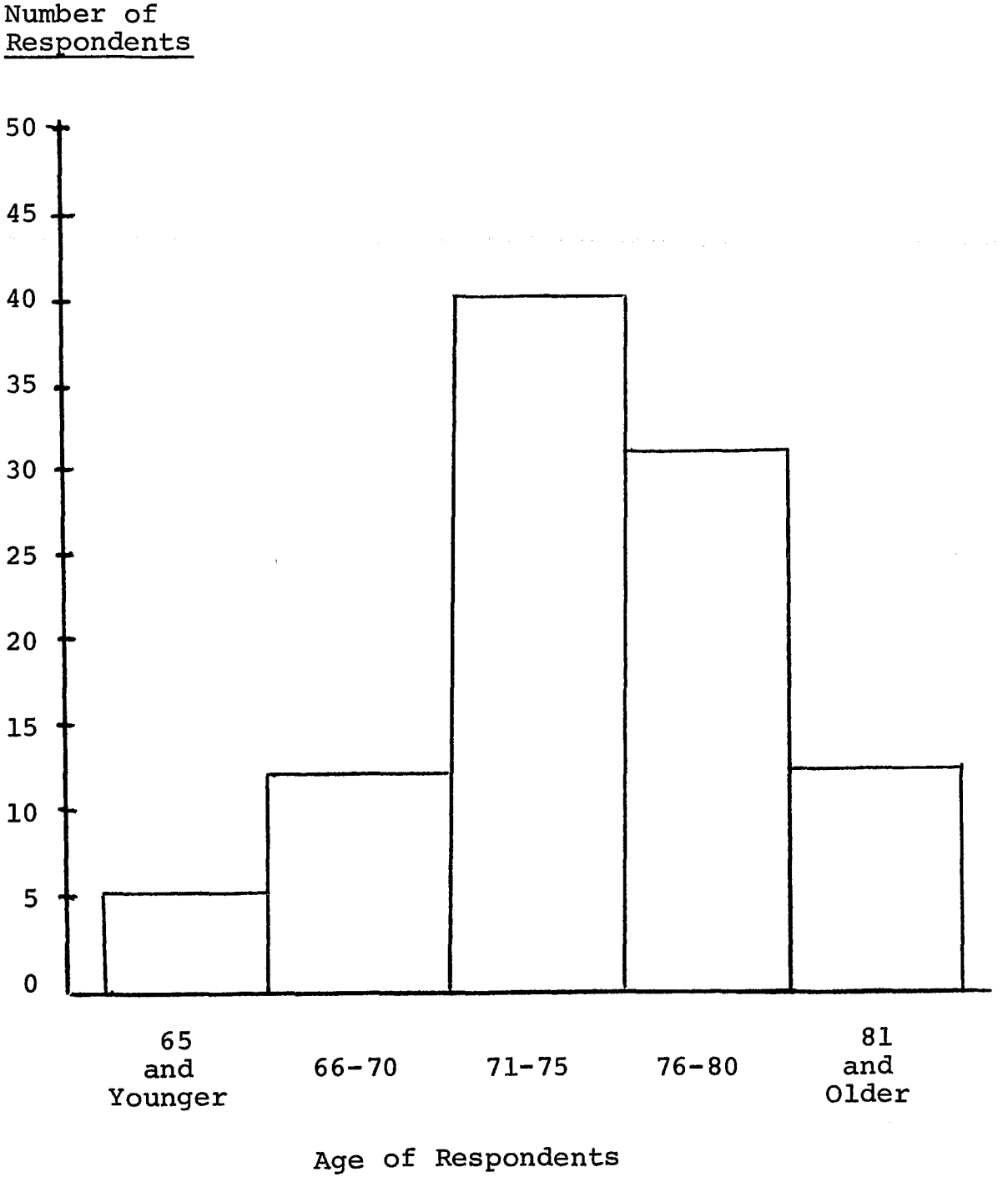
[2]See, for example: Johan Arndt, op. cit.; Bruce H. Bylund, "Social and Psychological Factors Associated with Acceptance of New Food Products," Bulletin 708 (University Park, Pennsylvania: Agricultural Experimental Station, Pennsylvania State University, 1963), in Ralph Day (ed.), Marketing Models (Scranton, Pennsylvania: International Textbook Company, 1964), pp. 145-174; and Thomas S. Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.), Changing Marketing Systems (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1967), pp. 328-332.

FIGURE VI

DISTRIBUTION OF KISSENA I
RESPONDENTS BY AGE



Product. The new Morton salt substitute, marketed by the Morton Salt Company division of Morton International, was used for this field experiment. It is packaged in a small container, resembling the nationally known regular Morton Salt dispenser. The product is available in two varieties--regular and seasoned. Its retail price is 59 cents.

The Morton salt substitute is composed primarily of potassium chloride. It is designed for those who desire to limit or restrict their intake of salt for various health reasons, e.g., high blood pressure, cardiac condition, or retention of fluids. The fact that these health matters are closely associated with old age made the product particularly suitable for the purpose of this field experiment.[3] In addition, a market research survey indicates that over 50 percent of the respondents, who use a salt substitute, are 60 years or older.[4]

Prior to the field experiment, the Morton salt substitute was available in only about a half-dozen test market states in the central region of the country. It was not available,

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[3]For a discussion of these health problems in relationship with aging, see Glenn H. Beyer and Margaret E. Woods, Living and Activity Patterns of the Aged (Ithaca, New York: Center for Housing and Environmental Studies, Research Report No. 6, Cornell University, 1963), pp. 2-3.

[4]This confidential market research study was prepared for the Morton Salt Company by a large marketing research firm.

nor was it promoted within the region of this field experiment. At the time of the field experiment the product was only available in those stores selected by the researcher to serve as points for its purchase.

With regard to the existence of competition for this item, several brands are available on the market. The largest selling salt substitute is marketed by Adolph's; other brands are Co-Salt, Dia-Mel and Neocurtasal. Survey research evidence, supplied by Morton, indicates that a great number of salt substitute users felt that the previously available brands lack the full taste of regular salt, or have a bitter taste. The same sources also suggested that the new Morton salt substitute more closely conforms to the desired taste of regular salt.[5]

The Coupon. A half-price coupon (30 cents off the "regular" retail price of 59 cents) was distributed to each member of the Kissena I community.[6] The following points describe the purpose and features of the special offer coupon:

1. The coupon was designed to serve as a means of initial awareness, and as a stimulus for purchase and word-of-mouth product related conversation for the respondent group.[7]

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[5]Based upon a confidential market research study prepared for the Morton Salt Company by a large marketing research firm.

[6]See Appendix I for a copy of the letter and coupon.

[7]Johan Arndt, op. cit., used a coupon for approximately the same purpose.

2. Each coupon was coded to determine which of the respondents made the trial purchase.

3. A cover letter which briefly described the new product and the value of the coupon constituted the top portion of the special offer coupon. The content of the letter specified the "life" of the coupon, by establishing when the offer expired. An "end of offer" date was necessary so the research data collection stage of the field study could be started. Finally, the letter identified those local retailers where the coupon could be redeemed. This feature was designed to facilitate redemption, and to avoid having respondents try to use the coupon outside of the neighborhood, where the product was not available.

Research Procedure. With the discussion of the community, the product, and the letter with coupon as background, the research procedure will now be described.

One hundred and one letters and coupons were distributed to the residents of Kissena I. The letter indicated that the coupon had a life of two weeks, and specified the exact date when the offer would no longer be valid. Two days after the offer expired, the interviewing phase of the study began. Within two days, 99 of the 101 potential respondents were interviewed.[8] Only one resident was not interviewed; she

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[8]The difference between the number of respondents and the number of apartments which comprise the Kissena I community is attributed to the fact that some were vacant--unrented or the resident hospitalized. The 101 residents

became seriously ill just after the letters and coupons were received by the respondent group, and was expected to remain in the hospital for an extended period of time. The high rate of completed interviews is attributed to the fact that a notice was circulated to all female members of the community by the director of the Kissena I community (a woman who is much admired by all) asking that they cooperate with the researcher and his staff. Also appointments were prescheduled.[9]

Pilot Studies. Prior to the study two pilot studies were undertaken in the preparation and testing of the questionnaire. The first study was concerned with the development of a list of products to be included in the questionnaire as a measure of the variable, "general willingness to try new food products." From a list of new food products a one page questionnaire was prepared which included 21 products.[10] The questionnaire was distributed to a group of undergraduate students from two colleges located in New York City.

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constitute the population of the community, since those who were hospitalized were not "consuming" members of the community. For this reason it will be suggested later in this chapter that the 100 completed interviews constitute a census.

[9]The notice distributed to each of the respondents, asking them to cooperate with the researcher, made no reference to the true concern of the study. The respondents were only informed that the interviewers would ask them questions about their "general food and diet practices."

[10]The products selected to be included in the initial list of new food products were drawn from: New Product Digest (New York: BBDO Information Center, 383 Madison Avenue, August 1968-August 1969).

The students were asked to have the questionnaires completed by their mothers, grandmothers, married sisters, and sisters-in-law. One hundred completed questionnaires were returned and tabulated. The ten new products which had the greatest number of "tried at least once" scores were selected to make up the final measure of the "general willingness to try new food products" variable.[11] These steps were deemed necessary to assure that the products included in the final measure of this variable were not items tried by such a small number of individuals that their inclusions could jeopardize the value of the variable.

The second pilot study was undertaken as a test of the overall questionnaire. For this purpose a geriatric day center, the Hudson-Guild-Fulton Center for Senior Citizens in Manhattan, was selected. The specific objective of this pilot study was to test the language level and types of responses elicited by the initial questionnaire. Since this pilot group did not know, nor were they exposed to, the new Morton salt substitute, certain questions were eliminated or altered so as to make the questionnaire meaningful. However, most of the questions were kept intact, or slightly modified. The group selected included some subjects known to restrict their intake of regular salt. To further parallel the group which would eventually serve as the

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[11]See Question 14, Appendix II - Questionnaire.

subjects for the field experiment, all of the respondents in the pilot test of the questionnaire were Jewish. During the first interviewing session, eight respondents were questioned. Based upon this session, several questions were altered; specifically, the ones dealing with perceived risk and perceived error tolerance. In the case of perceived risk, it was determined that (1) respondents found it difficult to deal with more than a three point scale; (2) respondents compared a brand of salt substitute with regular salt and not with other brands of salt substitutes; and (3) respondents measured the "quality" of a salt substitute in terms of two dimensions: taste and health. With regard to the perceived error tolerance variables, it was determined that the original wording was unclear and, therefore, respondents found it difficult to make a selection from among the available alternatives.

Based upon the first interviewing session, the weak questions were changed. Several days later a second, and final session, was held with a different group of respondents at the same center. Based upon this session, it was determined that those questions which were originally poorly conceived or unclear were now clear and easy to answer.

Retail Availability of the Product. Within two blocks of the Kissena I community are located three stores operated by the following supermarket chains: A&P, King Kullen, and Waldbaum's. Except for one or two small independent grocery stores, the three chain stores were the only sources of food within a reasonable walking distance of the community. Therefore, it was assumed that the overwhelming majority of the residents of Kissena I would shop in one or more of the three chain stores for most of their food needs.[12]

The corporate officers of each of the three chains were contacted by the researcher, and all agreed to stock the new Morton salt substitute for the duration of the field experiment. The stores were supplied with an ample number of cases of the product to assure the continuous availability of the product. In each store the product was placed in the dietetic food section alongside competitive products.

Interviewing and Questionnaire. In order to complete the interviewing phases as quickly as possible 14 junior and senior college students were selected by the researcher to serve as interviewers. All of the students selected were marketing majors. Most had completed a required course in marketing research. Each student interviewer was provided with an extensive set of interviewer instructions, which

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[12]This assumption was verified during the survey research phase of the study by asking each respondent, "In which neighborhood stores do you (or your husband) shop for the majority of your grocery items?" All but one of the 100 respondents identified one or more of the three stores.

described the respondent group and included question-by-question instructions on how to administer the questionnaire. Several days before the interviewing began, a several hour session was held to review the questionnaire and to answer procedural questions. In addition, a "Research Control Center" was established at the site of the study where the researcher was always available to assist the interviewers. These various safeguards seem to have accounted for what was a relatively smoothly completed interviewing phase.

As previously discussed, 99 out of the 100 interviews were completed within a two day period. The other interview was completed several days later. The interview time factor seemed important; the aim was to keep the amount of discussion about the interviewing experience between members of the respondent group to a minimum. The questionnaire took approximately 25 minutes to complete. Also, as few open-ended questions as possible were included so as to keep interviewing bias to a minimum.[13]

Research Model

A simple research model is depicted in Figure VII. The purpose of the model is to present a "picture-statement" of the major relationships to be explored in this chapter. The right side of the model is composed of the dependent variable--product trial. This variable is linked to the

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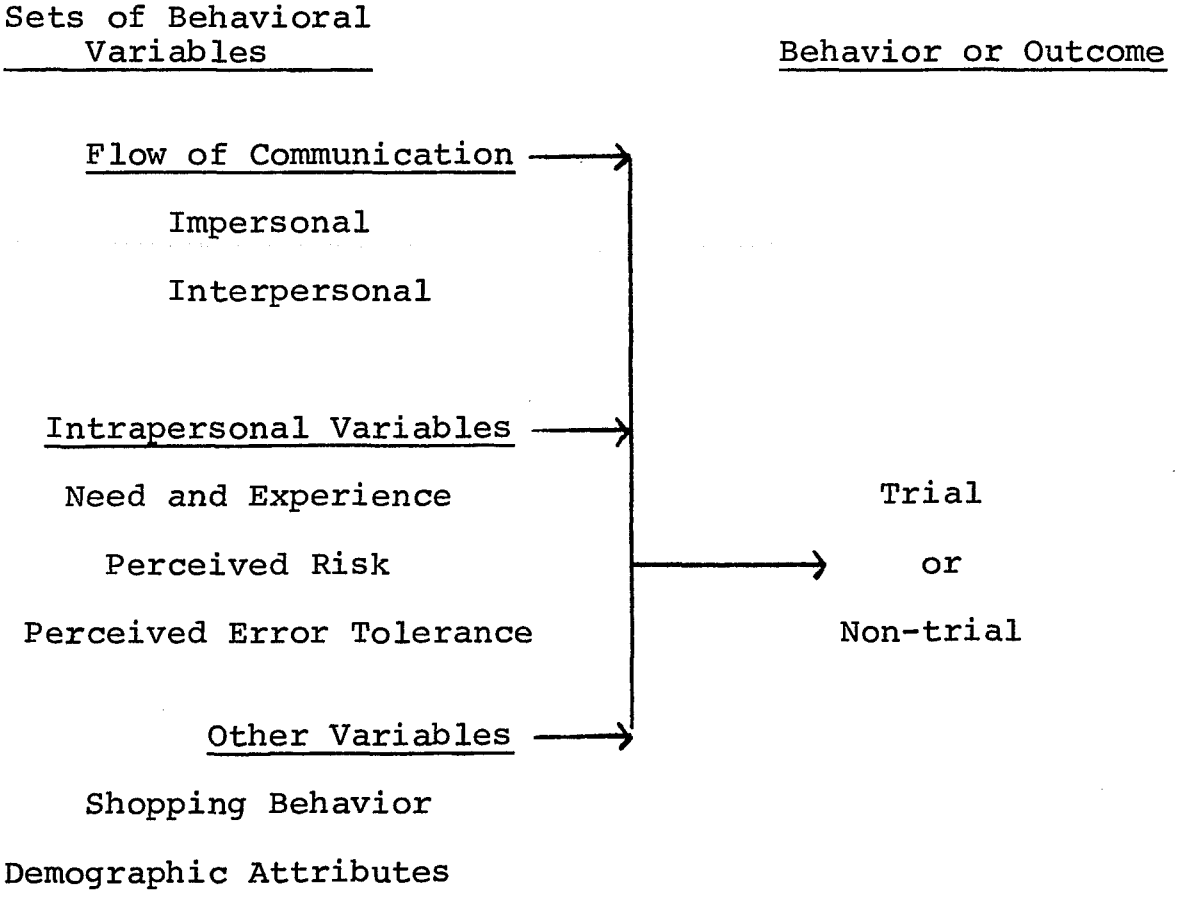
[13]See Appendix II for a copy of the Questionnaire.

FIGURE VII

A RESEARCH MODEL



fourth stage of the adoption process "trial" which was examined in Chapter III. The product trial variable is a measure of acceptance of the new Morton salt substitute.

The three sets of behavioral variables on the left side of the model constitute the third phase of the diffusion/adoption paradigm, which was examined in Chapters IV and V. They are (1) flow of communication, including impersonal and interpersonal sources of communication; (2) intrapersonal variables, including need, experience, perceived risk as well as perceived error tolerance, and (3) other variables, including shopping behavior and demographic attributes.

Each of the variables will now be operationally defined.

Product Trial. The dependent variable has two values--trial and non-trial of the Morton salt substitute. It was measured in the questionnaire by the following two questions:

> What did you do with the salt substitute coupon?
>
> Why did (didn't) you buy the Morton salt substitute?

The respondent's answer to these questions was validated against the redeemed coupons collected from the three participating supermarkets before interviewing was started.

Flow of Communication. One group of questions was designed to determine and compare the importance of impersonal (letter and coupon) and interpersonal (primarily, informal communication) sources. The following three questions were asked:

> How did you first learn of the Morton salt substitute?
>
> Thinking back over all of the ways you got your knowledge about the Morton salt substitute, which was most important?
>
> Which was more important in your decision to try the Morton salt substitute--would you say--the comments of others, or the coupon and letter?

In addition to the questions which compared impersonal and interpersonal sources, other questions were asked to measure: total amount of informal communication engaged in, amount of initiation and reception of informal communication, content of informal communication, and general opinion leadership pertaining to food.

The amount of informal communication engaged in by each respondent was measured by the total number of word of mouth contacts. The initiation of informal communication, degree to which each respondent is a sender of product related information, was measured by the following questions:

> Did you tell anyone, living here at Kissena I, about the Morton salt substitute?

Which other people, living here at Kissena I, did you tell about the Morton salt substitute?

Did you discuss the Morton salt substitute with anyone not living at Kissena I?

(If yes) Who?

The reception of informal communication, the degree to which each respondent is a receiver of product related information, was measured by the following questions:

Will you please tell me who, at Kissena I, made this first comment about the Morton salt substitute?

Which other persons, living at Kissena I, have commented to you about the Morton salt substitute?

The content of informal communication--did the conversation suggest product trial or non-trial--was measured directly by the following questions:

What was the first thing you remember hearing about the Morton salt substitute from someone living here at Kissena I?

Did this person recommend trying or not trying the Morton salt substitute?

Did most of these people recommend trying or not trying the Morton salt substitute?

Did you suggest that they try or not try the Morton salt substitute?

Did any of these people suggest that you try or not try the Morton salt substitute?

A group of source questions was asked in association with all of the above questions to determine the pattern of informal communication and to validate respondents' answers. For example, if Mrs. A said the first comment she heard about the product was made by Mrs. B, then Mrs. B in her interview should name Mrs. A as a person she told about the product.

A sociometric approach to the measurement of opinion leadership, with regard to food products, was employed in this study. Opinion leadership scores were determined by summing the number of times each respondent is designated an opinion leader by other respondents. The two questions used were:[14]

> With which persons, here at Kissena I, do you discuss new food products?
>
> Which persons, here at Kissena I, would you say are usually first to try new food products?

In addition to opinion leadership, one other related social variable, self-reported membership in social, religious and community groups will be examined. This variable was measured by the following question:

> Which clubs, social groups, religious groups, and community groups do you (or your husband) belong to?

---

[14]For both of these measures of opinion leadership, each respondent was asked to identify up to three other individuals living in the community.

Intrapersonal Variables. As set out in Chapter V, intrapersonal variables deal with the individual's predisposition to react in a given way toward a particular product category or brand. Four intrapersonal variables were examined: need, experience, perceived risk, and perceived error tolerance. Here each of these four intrapersonal variables will be operationally defined; they will be examined in Chapter VIII where the research results are presented.

Need for a salt substitute was determined by the following questions:[15]

> Are you (or your husband) on a salt restricted diet?
>
> Has a doctor or dietician advised you (or your husband) to use less, or to stop using salt?
>
> Should a person ask a doctor's or dietician's advice before trying a new food product like a salt substitute?

Experience was measured by the following questions:

> Do you (or your husband) use a salt substitute?
>
> Approximately when did you start buying salt substitutes?
>
> Have you (or your husband) been satisfied or dissatisfied with the brand of salt substitute you have used?

---

[15] Questions about "butter fat products" and "sugar" were also included as a means of not drawing too much attention to the questions dealing with salt substitutes.

As previously discussed, a pilot study indicated that a new salt substitute is compared with regular salt, rather than existing salt substitutes, and that there are two dimensions of perceived risk--taste risk (risk that a new salt substitute will not taste as good as regular salt); and health risk (risk that a new salt substitute will be better for one's health than regular salt). To measure these two dimensions of risk, the following two pairs of questions were employed:

> Taste Risk
> Would you say you are quite certain, somewhat certain, or not certain, that a new brand of salt substitute would taste as good as regular salt?
>
> Would you say it is not important, of some importance, or quite important, for you (or your husband) to get a salty flavor into your food?
>
> - - - - -
>
> Health Risk
> Would you say you are quite certain, somewhat certain, or not certain, that a new brand of salt substitute would be better for one's health than regular salt?
>
> Would you say there is no danger, some danger, or much danger, in using a new brand of salt substitute in place of regular salt?

Each respondent's score for the two dimensions of perceived risk, taste and health, will be determined by aassigning a numerical value to each of the three points of the scale. Table V illustrates the results of this

TABLE V

THE PERCEIVED RISK MATRIX

Certainty Scale		Consequences Scale (Danger)		
		No Danger	Some Danger	Much Danger
		(1)	(2)	(3)
Quite Certain	(1)	1	2	3
Somewhat Certain	(2)	2[a]	4	6
Not Certain	(3)	3	6	9

[a]Read: 2 x 1 = 2

Source:
Modification of Scott M. Cunningham, "The Dimensions of Perceived Risk," in Donald F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior (Boston: Division of Research, Graduate School of Business, Harvard University, 1967), p. 85.

process, using the health risk pair. From this matrix of numerical values a three-way categorization of low, medium, and high risk is derived. The determination of the three categories of risk is illustrated in Table VI.

Perceived error tolerance was introduced in Chapter V as a new complementary variable to perceived risk. It was suggested that consumers, as risk takers, maintain a consistent strategy, or willingness, to make one of two types of errors in their purchase behavior. That is, consumers are willing to make either a type I or type II error. A type I error is conceived of as a predisposition or tolerance for including negative outcomes (poor product choices) so as to maximize the likelihood of including positive outcomes. On the other hand, a type II error is a tolerance for excluding positive outcomes (good product choices) so as to minimize the likelihood of including negative outcomes. Consumers who are willing to tolerate a type I error may be categorized as "venturesome," while consumers who prefer a type II error may be emphasizing "security" or "safety."

This variable is operationalized with the following two questions:

> Who is a wiser consumer: (a) a person who tries a new food product which turns out to have a poor taste, or (b) a person who does not try a new food product and later learns it has a good taste?

TABLE VI

DETERMINATION OF RISK LEVELS

	Certainty	Danger	Matrix Value
Low Perceived Risk	Quite	No	1
	Quite	Some	2
	Somewhat	No	2
Medium Perceived Risk	Not	No	3
	Quite	Much	3
	Somewhat	Some	4
High Perceived Risk	Not	Some	6
	Somewhat	Much	6
	Not	Much	9

Source:
Modification of Scott M. Cunningham, "The Dimensions of Perceived Risk," in Donald F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior (Boston: Division of Research, Graduate School of Business, Harvard University, 1967), p. 85.

> Do you prefer to (a) try a new food product when it first comes out, or (b) wait and learn how good it is before trying it?

The first question is designed as an abstract yet direct measure of perceived error tolerance; the second question is more of a measure of perceived "venturesomeness" and serves as a back-up to the first question. For both questions the selection of response "a" is a type I error, while "b" is a type II error.

Also included in this set of behavioral variables is a measure of "general willingness to try new food products."[16] This variable served as an indication of each respondent's predisposition to try new food products. It was measured by asking each respondent:

> Would you tell me which of the following products you (or your husband) have bought at least once?

The following products were included in the question:[17]

> Breakstone Sour Dressing
> Lite-Line Ice Milk
> Cool 'N Creamy Frozen Pudding
> Super "Y" Health Juice
> Freeze Dried Sanka
> H-O Instant Oatmeal with Fruit
> Birds Eye Orange Plus
> Brr Soft Drink
> Borden Swiss Style Yogurt
> Ocean Spray CranApple Juice
> Louis Sherry Shimmer
> Kellogg Danish Go-Rounds

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[16]The pretest of this question was described earlier in this chapter.

[17]The "Super 'Y' Health Juice" and the "Brr Soft Drink" are both fictitious. They were included solely as a measure of possible exaggeration. None of the respondents identified either of the two products as one they had tried. They are not included in the measure of the variable.

Following the lead of researchers who have examined a similar variable, the respondent group will be divided into three subgroups: low, medium, and high general willingness to try new food products.[18] Given the limitations of a small number of products, the following decision rules will be employed to assign a respondent's score to one of the three categories: (1) to include as nearly as possible one-third of the respondents in each of the three categories,[19] and (2) to begin each category with the next highest number of products tried. The number of new products tried by the respondent group varied from a low of "none" to a high of "six." Applying the two decision rules, the following division of the general willingness to try new food products was generated: low (0 and one product): 43 respondents; medium (two products): 28 respondents; and high (three to six products): 29 respondents.

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[18] Variables similar to the "general willingness to try new food products" have been used in other marketing adoption studies; see: Johan Arndt, op. cit., pp. 104-106; and Thomas S. Robertson, "The Effect of the Informal Group Upon Innovative Behavior," in Robert L. King (ed.), Marketing and the New Science of Planning (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1968), pp. 334-340.

[19] In addition to dividing the "general willingness" variable into three categories, it was decided that it would be most practical to attempt to include as nearly as possible one-third of the respondents in each of the three categories so as to assure a sufficient number of respondents in each category, given that the population was relatively small.

The new food products included in this list were required to meet each of the following criteria:

1. It was "new" in more ways than a package change, or the word "new" or "improved" appearing on the package.

2. It was introduced within a year and a half of the date of the field study.

3. It would seem to be consistent with the health and dietary requirements of the members of the community.

4. It was available in each of the three supermarkets in the area serving the community.

Other Variables. In addition to the intrapersonal variables, a small number of shopping behavior variables and demographic attributes will be examined in Chapter VIII. These variables have been brought together, under the heading of "other variables," as a means of convenience.

Shopping behavior was determined by the following questions:

> How frequently do you (or your husband) go shopping for grocery products?
>
> In which neighborhood stores do you (or your husband) shop for the majority of your grocery items?
>
> When you (or your husband) go shopping for food products how often do you go with someone else who lives at Kissena I?
>
> How often do you (or your husband) look for newspaper advertisements of food store sales?
>
> When you receive or see a price-off coupon how often do you use it?

The demographic attributes examined consisted of the following specific variables: (1) age of the respondent; (2) status (married, widowed or single); and (3) income. Data on these three variables were taken from the files maintained by Self-Help, rather than by asking each respondent to supply the information. This approach was followed because the officers of Self-Help desired to avoid having the residents answer personal questions.

Hypotheses[20]

Each of the following hypotheses will be examined:

Flow of Communication Hypotheses

Trial will vary directly with the amount of product related conversation.

Trial will vary directly with the favorableness of the content of product related conversation.

Trial will vary directly with the variety of sources of product related conversation.

Trial will vary directly with the frequency with which one is designated by others as a person with whom they discuss new food products.

Trial will vary directly with the frequency of being designated usually first to try new food products by others.

Trial will vary directly with the number of memberships held in social and other organizations.

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[20]Analysis using percentages is an accepted procedure in the literature of the behavioral sciences and more specifically in marketing adoption research; e.g., see Fred N. Kerlinger Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1964), pp. 624-649; Arndt, op.cit., p. 52; and Robertson, "Determinants of Innovative Behavior," op.cit., p. 330. Each of the indicated hypotheses will therefore be tested in terms of percentages in Chapters VII and VIII.

Hypotheses Relative to Intrapersonal Variables

Trial will be greater if there is (a) a history of restricting the intake of regular salt, and (b) a health need for such restriction.

Trial will vary indirectly with perceived risk.

Trial will be greater if there is a willingness to make an inclusion error, rather than if there is a willingness to make an exclusion error.

Trial will vary directly with the degree of general willingness to try new food products.

Hypotheses Relative to Other Variables

Trial will vary directly with (a) the number of stores shopped, (b) the frequency of shopping, and (c) the frequency of shopping with others.[21]

Trial will vary directly with the degree of deal proneness.

Trial will vary indirectly with age.

Trial will be greater for married and single households than for widowed households.

Trial will vary directly with income.

Data Analysis Procedure

It is appropriate to treat the respondent group as a population, rather than as a sample, since all but a single member of the community were interviewed. Therefore, no test of statistical significance will be used in the following chapters where the results of the field experiment are presented.

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[21]The first two shopping behavior hypotheses ("a" and "b") are offered because it is felt that each represents an increased opportunity to be exposed to new products. The third ("c") was proposed because the researcher wanted to explore whether shopping with others might be an influential factor in new product trial.

Conclusion

In this chapter the research design employed in the field experiment, plus a model and component variables, hypotheses, and analysis approach were reviewed. Based upon the foregoing, the next two chapters will present the findings of the field experiment. Chapter VII will consider the flow of communication. Chapter VIII will cover intrapersonal and other variables.

CHAPTER VII

THE FLOW OF COMMUNICATION: RESEARCH FINDINGS

This chapter will examine the research findings pertaining to the impact of impersonal and interpersonal communication in the trial of the Morton salt substitute. Chapter VIII will consider the relationship between product trial and intrapersonal variables.

By way of general introduction to this and the next chapter, Table VII summarizes what the respondents claimed they did with the price-off coupon for the Morton salt substitute. Table VII indicates that 17 percent of the respondents redeemed the coupon; this group constitutes the "triers." The remaining respondents (83 percent) constitute the "non-triers." Almost 60 percent of the respondents claimed that they threw the coupon away, and most of the others either gave it away, or were saving it at the time of the interview.

Four of the 17 residents who purchased the Morton salt substitute purchased more than a single unit of the product. Those who purchased more than one unit used the coupons supplied by neighbors to make the additional purchase at the same savings as their original purchase. This seems

TABLE VII

WHAT RESPONDENTS DID WITH THE COUPON

	Number	Percent
Purchased the product	17	17
Threw it away	57	57
Gave it away	13	13
Saved it	12	12
Misplaced it	1	1
Total	100	100

to indicate that those who made more than a single purchase were "stocking up" during the special offer period.

A check of the three supermarkets stocking the product uncovered that two residents purchased the item after the interviewing phase was completed. These individuals, along with all other residents who had not purchased the product prior to being interviewed, are treated as "non-triers."[1]

Tables VIII and IX show the reasons given for purchasing or not purchasing the Morton salt substitute. Table VIII indicates that 65 percent of the triers gave a "health reason" for purchasing the product. This is not surprising, since salt substitutes are health-food products. Table IX shows a wider range of reasons why non-triers did not purchase the Morton salt substitute; the major reasons were: no need for the product, general dislike of substitute products, no usage of regular salt, use of regular salt, and uncertainty as to the product's effects. The majority of the non-triers offered reasons for not purchasing which are related to not needing the item.[2]

Of particular interest is the relatively large number of respondents who indicated a general dislike of substitute products. This claimed reason for not purchasing the Morton salt substitute is possibly explained by the considerable negative publicity that sugar substitutes with cyclamates received several months prior to the field experiment.

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[1]Some observations with regard to those who purchased after the trial period will be made later in the chapter.

[2]Further exploration of the relationship between "need" and "trial" will be considered in the next chapter.

TABLE VIII

INDICATED REASONS FOR BUYING
THE MORTON SALT SUBSTITUTE[a]

Indicated Reasons for Buying	Number	Percent
Good for one's health	8	40
Cannot use regular salt	5	25
Received the coupon	3	15
Miscellaneous	4	20
Total[b]	20	100

[a]These results are based upon the responses given to the following question: "Why did (didn't) you buy the Morton salt substitute?"

[b]Total exceeds number of respondents because of multiple responses.

TABLE IX

INDICATED REASONS FOR NOT BUYING
THE MORTON SALT SUBSTITUTE

Indicated Reasons for Not Buying	Number	Percent
Do not need it	13	15
Do not like substitutes	12	14
Do not use salt	12	14
Use little salt	9	10
Use regular salt	9	10
Do not know if it is good	7	8
Did not like salt substitute previously used	6	7
Not interested	5	6
Doctor did not advise using	4	4
Could not find it in the stores	2	2
Costs too much	2	2
Plan to buy it	2	2
Do not know	5	6
Total	88*	100

*Total exceeds number of respondents because of multiple responses.

In this brief introduction the respondent group has been divided into two subgroups: triers, those individuals who purchased the Morton salt substitute, and non-triers, those who did not purchase. The stated reasons for purchasing or not purchasing were also considered. In the remainder of this chapter the relationship between communication and trial of the Morton salt substitute will be examined. The following specific aspects of the impact of impersonal and interpersonal-informal communication will be considered: (1) product awareness; (2) perceived importance of the impersonal and interpersonal sources during decision making; (3) the nature and extent of initiation and reception of informal communication, between members of the Kissena I community; (4) the extent of interpersonal communication with persons outside of the community; (5) the content of informal communication; and (6) finally, the impact of several measures of food related opinion leadership.

Flow of Communication

As previously mentioned, prior to the field experiment the Morton salt substitute was not promoted, nor was it available except in several test market cities located in a different section of the country. Therefore, the impersonal source of communication--the distribution of a letter with attached price-off coupon--was expected to serve as the primary, if not only, source of product

awareness. It was also felt that the letter and coupon would generate product interest, since it was expected that consumers over 65 constitute the primary market for this product. In addition, it was anticipated that the awareness and interest generated by the impersonal source of communication (the letter and coupon) would in turn stimulate a portion of the residents of the Kissena I community to initiate informal communication with other members of the community. Finally, it was expected that the combination of the impersonal communication, serving to create awareness and interest, and the interpersonal-informal communication, would lead to product trial by a portion of the residents of Kissena I.

Product Awareness. It will be recalled from the discussion in the background chapters of this dissertation that "awareness" is the first stage of the rural sociological adoption process. Awareness occurs when an individual first learns of the existence of the innovation. Table X presents the results of a question designed to determine the source of awareness for the members of the respondent group pertaining to the Morton salt substitute. Specifically, Table X indicates that 89 percent of the triers claimed that the letter and coupon were their initial source of exposure to the Morton salt substitute; upon further examination of the other sources of awareness, this may be an understatement. It seems that the

TABLE X

THE RELATIONSHIP BETWEEN FIRST AWARENESS AND TRIAL OF THE MORTON SALT SUBSTITUTE[a]

Means of First Awareness	Triers		Non-Triers	
	Number	Percent	Number	Percent
Letter and coupon	16	89	71	80
An advertisement	1	6	2	2
Husband	1	6	2	2
Saw it in the store	0	0	7	8
A friend	0	0	2	2
Do not know	0	0	5	6
Total[b]	18	100	89	100

[a]These results are based upon the responses given to the following question: "How did you first learn of the Morton salt substitute?"

[b]Total exceeds the number of respondents due to multiple responses.

one trier who identified "an advertisement" as the source of initial exposure was referring to the letter and coupon in a generic sense, and that the other trier, who identified "her husband" as the source was indicating that he opened the letter containing the coupon, and then passed both along to her.

Turning to the non-triers, Table X shows that with the exception of a number of respondents who claimed that "I saw it in the stores" or "I do not know," the letter and coupon were also the primary source of initial exposure for non-triers. These results suggest that there was not a critical difference between triers and non-triers with regard to initial awareness; most triers and non-triers claimed first learning of the new Morton salt substitute through the letter and coupon. As reported in an earlier chapter, Robertson also found that there was no real difference between those who purchased, and those who did not purchase a touch-tone telephone insofar as awareness of the product's existence and availability was concerned.[3]

Sources of Information and the Decision to Try. The above discussion indicates that product awareness was primarily established through the letter and coupon; this

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[3]Thomas S. Robertson, "Determinants of Innovative Behavior," in Reed Moyer (ed.), Changing Marketing Systems (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1967), p. 331.

is logical, when it is considered that the product was not available, nor was it promoted prior to the placement of the salt substitute in the three neighborhood supermarkets, and the distribution of the letter and coupon to the residents of Kissena I.

The next step is to compare impersonal and interpersonal-informal sources of communication relating to the formation of the decision to try the Morton salt substitute.[4] More specifically, does the impersonal letter and coupon continue to dominate as the decision to purchase is being made, or is there a shift to interpersonal-informal sources?

Tables XI and XII present the results of questions designed to determine whether triers viewed the letter and coupon or interpersonal-informal communication as more important in forming the decision to try the product. The evidence from both tables indicates that most of the triers felt that the impersonal letter and coupon together were the more important source of information, quantitatively speaking, with regard to the decision to try the product.

However, the following discussion will show that the overwhelming majority of respondents did not engage in interpersonal-informal communication and, therefore, triers did not possess the "balanced" exposure necessary to

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[4] "Decision" is here used to include both the "interest" and "evaluation" stages of the adoption process. These two stages are combined because: (1) it is difficult to divide these two mental activities; and (2) more importantly, it does not serve any particular function to attempt to divide them.

TABLE XI

COMPARATIVE IMPORTANCE OF IMPERSONAL AND INTERPERSONAL SOURCES FOR TRIERS*

Sources	More Important (Number)
Impersonal Source:	
Letter and Coupon	16
Interpersonal Source:	
Informal Communication	1
Total	17

*These results are based upon the responses given to the following question: "Which was more important in your decision to try the Morton salt substitute--Would you say: the comments of others, or the coupon and letter?"

TABLE XII

THE SOURCE OF PRODUCT RELATED INFORMATION IDENTIFIED AS MOST IMPORTANT BY TRIERS[a]

Sources	Number	Percent
Impersonal Source: Letter and Coupon	15	83
Interpersonal Source: Informal Communication	3	17
Total[b]	18	100

[a]These results are based upon the responses given to the following question: "Thinking back over all of the ways you got your knowledge about the Morton salt substitute, which way was most important?"

[b]Total exceeds number of triers because of multiple responses.

properly compare the impersonal and interpersonal sources of information. They were reacting to the impersonal letter and coupon, and for the most part the comparison between impersonal and interpersonal sources was only a hypothetical exercise. Therefore, the conclusion that the impersonal letter and coupon were the principal source in the formation of triers' decision to purchase the product is based on limited exposure to interpersonal-informal sources.[5]

Interpersonal-Informal Communication Among Members of the Respondent Group. In this section four related issues will be examined: (1) the amount of informal communication; (2) the extent of initiation and reception of informal product related communication between community members; (3) the amount and nature of informal communication with persons outside of the community; and (4) the content of informal communication.

Table XIII shows that over 90 percent of the respondents did not initiate a single informal communication with regard to the Morton salt substitute. Table XIV presents the findings of similar questions designed to determine

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[5]It is possible that because the special offer only had a specified "life" of two weeks there was insufficient time for informal communication to build up and spread. However, Arndt, who used a similar period, two weeks, in his study of a new brand of regular coffee, reported considerably more informal communication; see: Johan Arndt, Word-of-Mouth Advertising: The Role of Product Related Conversations in the Diffusion of A New Food Product (Unpublished Doctoral Dissertation, Graduate School of Business Administration, Harvard University, 1966).

TABLE XIII

THE RELATIONSHIP BETWEEN TRIAL AND INITIATION OF INFORMAL PRODUCT RELATED COMMUNICATION*

	Extent of Initiation					
	Did Not Initiate Any Communication		Initiated at Least One Communication		Total	
	Number	Percent	Number	Percent	Number	Percent
Triers	14	15	3	50	17	17
Non-Triers	80	85	3	50	83	83
Total	94	100	6	100	100	100

*The results are based upon the responses given to the following question: "Did you tell anyone, living at Kissena I, about the Morton salt substitute?"

TABLE XIV

THE RELATIONSHIP BETWEEN TRIAL AND RECEPTION OF INFORMAL PRODUCT RELATED COMMUNICATION*

	Extent of Reception					
	Did Not Receive Any Communication		Received at Least One Communication		Total	
	Number	Percent	Number	Percent	Number	Percent
Triers	14	16	3	30	17	17
Non-Triers	76	84	7	70	83	83
Total	90	100	10	100	100	100

*These results are based upon the responses given to the following questions: "What was the first thing you remember hearing about the Morton salt substitute from someone living here at Kissena I?" and "Which other persons living here at Kissena I have commented to you about the salt substitute?"

the reception of informal product related communication. The results indicate that 90 percent of the respondents did not recall receiving even a single product related message from a friend or neighbor living at Kissena I. In Arndt's study of the acceptance of a new brand of coffee, over 30 percent of the wives of graduate students discussed the new product with at least one other resident of the community.[6] The possible meaning of the seemingly substantial difference between the Arndt study and the present results will be discussed in the next two chapters of the dissertation.

Looking at the relationship between initiation of informal communication and trial of the Morton salt substitute, Table XIII indicates that 50 percent of those who initiated at least one communication were triers, compared with 15 percent of those who did not initiate any communication. A similar pattern exists for reception of informal communication; Table XIV indicates that 30 percent of those who received one or more communications were triers, compared with 16 percent of those who did not receive any informal communication. The results of both tables suggest a positive relationship between trial and initiation, and reception of informal communication. In absolute terms, both Tables XIII and XIV indicate that triers were more likely not to initiate and/or receive

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[6]Arndt, op. cit., p. 55.

informal communication than to participate in such communication. However, in comparison, non-triers were even less likely to play an active initiating or receiving role in some informal communication than triers.

Table XV supplements Table XIII and XIV by drawing attention to the relationship between initiation and reception of informal product related communication. The focus is on the interrelationship between initiating or receiving informal communication, and being a trier or a non-trier of the Morton salt substitute. The results indicate that the same number of triers and non-triers initiated informal communication, while non-triers received more communication than triers. This appears to suggest that informal communication may be moving from those who tried, to those who did not try. However, based upon the limited amount of informal communication, such a conclusion must be viewed as quite tentative. Although tentative, some additional data collected during interviews with each of the three non-triers who initiated informal communication tend to lend indirect support to the idea that the communication may have been moving from triers to non-triers. In their responses to other questions the three non-triers who initiated informal communication each seemed to be more positively disposed to the Morton salt substitute than other non-triers who did not initiate any informal communication. One of the non-triers claimed that she intended to purchase but could not locate the product in

TABLE XV

INTERRELATIONSHIP BETWEEN NUMBER OF PRODUCT RELATED COMMENTS RECEIVED AND INITIATED AND TRIAL

		Receivers			
		Triers	Non-Triers	Receiver not Identified	Initiated Total
	Triers	1	2	1	4
INITIATORS	Non-Triers	1	1	2	4
	Initiator not Identified	0	4		
	Received Total	2	7		

any of the supermarkets. She made her frustration known to two other residents who, in turn, relayed this communication when they were interviewed. A second non-trier who initiated informal communication claimed that she misplaced the coupon and would purchase the product either when she found it, or received another one. Several days after the interviewing was completed her coded coupon was redeemed in one of the stores which still stocked the product. The third non-trier who initiated informal communication indicated that she planned to use the coupon. Again, several days after the interviewing was completed, her coupon was redeemed in one of the stores. It may be more than a coincidence that the three non-triers who initiated informal communication were each willing to purchase and, in fact, two did purchase, although it was after the study was completed. It seems appropriate to conclude that their positive intention placed them closer on some continuum to triers than to the other non-triers, and this may in turn account for their initiation of informal communication.

The above discussion was focused on the extent of interpersonal-informal communication between members of the Kissena I community. Attention will next be focused on interpersonal communication between members of the community and outsiders.

Table XVI indicates that only 7 percent of the community was in touch with an outsider. The evidence also suggests that 43 percent of those who communicated with at

TABLE XVI

THE RELATIONSHIP BETWEEN TRIAL AND INTERPERSONAL COMMUNICATION WITH PERSONS NOT LIVING AT KISSENA I*

	Communication with Outsiders					
	Did Not Communicate With Any Outsiders		Communicated With At Least One Outsider		Total	
	Number	Percent	Number	Percent	Number	Percent
Triers	14	15	3	43	17	17
Non-Triers	79	85	4	57	83	83
Total	93	100	7	100	100	100

*These results are based upon the responses given to the following question: "Did you discuss the Morton salt substitute with anyone not living at Kissena I?"

least one outsider regarding the Morton salt substitute purchased, while only 15 percent of those who did not communicate with anyone outside of the community purchased. Table XVII shows that most of the outsiders were related to the respondents.

The respondents who discussed the product with persons outside of the community, with one exception, were not the same respondents who discussed the product with persons inside the community. Those communicating with an outsider, most frequently a relative, were informing him of the existence of the product because they felt that the outsider might benefit from the product.

A related issue which demands attention is the content of the interpersonal communication: was it favorable, neutral or unfavorable with regard to trial? The results indicate that all of the interpersonal communication was either favorable (recommending trial) or neutral, for example, "Have you received the coupon?" or "Have you tasted the product?" There was no indication of any negative interpersonal communication which discouraged trial of the product.

The small amount of interpersonal communication, coupled with the favorable or neutral content of this communication, seems to suggest that interpersonal communication did not play a major role in the decision to purchase for most respondents. These findings are

TABLE XVII

RELATIONSHIP BETWEEN RESPONDENTS AND OUTSIDE PRODUCT CONVERSATION

Relationship	Triers (Number)	Non-Triers (Number)
Relative:		
Brother	1	0
Son or Daughter	0	2
Other	1	2
Non-Relative:		
Friends	2	0
	4	4

somewhat at variance with most of the studies examined in Chapter IV, where the evidence indicates a more substantial role was played by interpersonal communication. Why is there a difference between the results of this study and the other studies reviewed earlier? The answer to this basic question will be explored in the next chapter where intrapersonal variables are examined.

In Chapter VI the following three hypotheses were proposed with regard to the flow of communication:

> Trial will vary directly with the amount of product related conversation.
>
> Trial will vary directly with the favorableness of the content of product related conversation.
>
> Trial will vary directly with the variety of sources of product related conversation.

In the case of the first hypothesis, the research evidence suggests that trial does vary directly with the amount of product related conversation (Tables XIII and XIV). Therefore, the first hypothesis is accepted. However, results with regard to the content and variety of exposure are not of sufficient quantity to allow either acceptance or rejection of the second and third hypotheses.

The remainder of this chapter will be devoted to an examination of the results of a small group of questions designed to determine the extent of food opinion leadership and the relationship between opinion leadership and trial of the Morton salt substitute.

Food Opinion Leadership. As was discussed in Chapter IV, opinion leadership is a component of the interpersonal-informal communication process. It is the opinion leader who either seeks out or who is sought out by persons desiring his wisdom with regard to some issue. Since the Morton salt substitute may be viewed as a health food product, a food measure of opinion leadership was generated. In measuring opinion leadership a sociometric approach, as outlined in Chapter VI, was employed.

All respondents were asked to identify other residents with whom they discuss new food products. Based upon the number of choices received, a measure of opinion leadership was developed for each respondent. A total of 45 percent of the residents of the community received at least one choice. Table XVIII indicates that 18 percent of the triers received no choices, 16 percent received one or two choices, and 14 percent of the triers received three or more choices. These results suggest an inverse relationship between the number of choices received as a person with whom other residents discuss new food products and trial.

However, hidden behind the results presented in Table XVIII is a relatively strong pattern of physical proximity. This pattern was determined by examining a

TABLE XVIII

THE RELATIONSHIP BETWEEN TRIAL AND THE NUMBER OF CHOICES RECEIVED AS "PERSON WITH WHOM YOU DISCUSS NEW FOOD PRODUCTS"*

	NUMBER OF CHOICES RECEIVED							
	None		One or Two		Three or More		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	10	18	6	16	1	14	17	17
Non-Triers	45	82	32	84	6	86	83	83
Total	55	100	38	100	7	100	100	100

*These results are based upon the responses given to the following question: "With which persons, here at Kissena I, do you discuss new food products?"

physical relationship, floors lived on, for those who volunteered names of neighbors, and the neighbors so named. It was found that 70 percent of the dyads were between persons living on the same floor of the apartment house community.[7] This finding indicates that physical proximity may be an important factor in determining informal communication links, particularly in the case of the elderly who live in an apartment house type community. That there is a close relationship between physical proximity and opinion leadership, within the confines of apartment house type living, is certainly not a startling idea; however, this may be the first time that such a relationship has been shown within the context of a consumer behavior study.

With regard to the second measure, the number of choices received as a person who is usually first to try new food products, Table XIX indicates that 17 percent of the triers received no choices, 15 percent received one or two choices, and none of the triers received three or more choices. These results appear to suggest an inverse relationship between the number of choices received as usually first to try new food products, and trial of the Morton salt substitute.

In view of the results of these measures of opinion leadership, the following two hypotheses are rejected:

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[7]Dyad, a group of two, is employed here to indicate the resident who volunteered another's name and the person named.

TABLE XIX

THE RELATIONSHIP BETWEEN TRIAL AND THE NUMBER OF CHOICES RECEIVED AS "PERSON WHO IS USUALLY FIRST TO TRY NEW FOOD PRODUCTS"*

	Number of Choices Received							
	None		One or Two		Three or More		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	15	17	2	15	0	0	17	17
Non-Triers	71	83	11	85	1	100	83	83
Total	86	100	13	100	1	100	100	100

*These results are based upon the responses given to the following question: "Which persons, here at Kissena I, would you say are usually first to try new food products?"

Trial will vary directly with the frequency with which one is designated by others as a person with whom they discuss new food products.

Trial will vary directly with the frequency of being designated usually first to try new food products by others.

Arndt used similar measures of opinion leadership (he calls them sociometric integration) in his study of the acceptance of a new brand of regular coffee by young housewives. His results also do not show a clear relationship between these measures and trial.[8]

One other related variable was examined, i.e., the number of social and other organizations to which the respondents reported belonging. This variable was included to see if the social involvement of the residents might play some role in the trial of new products. Table XX presents the results of this social variable in relationship to trial of the Morton salt substitute. The evidence indicates that 31 percent of those belonging to three or more groups tried, as compared to 15 percent of those belonging to either "none" or "one or two" groups. Table XX also shows that more than five times the number of triers belong to one or two groups than belong to none, and twice as many belong to three or more social groups than belong to none. This evidence suggests a positive relationship between the number of social and other group memberships

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[8] Arndt, op. cit., p. 70.

TABLE XX

THE RELATIONSHIP BETWEEN TRIAL AND THE NUMBER OF MEMBERSHIPS HELD IN SOCIAL AND OTHER GROUPS

	Number of Choices Received							
	None		One or Two		Three or More		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	2	15	11	15	4	31	17	17
Non-Triers	11	85	63	85	9	69	83	83
Total	13	100	74	100	13	100	100	100

*These results are based upon the responses given to the following question: "Which clubs, social groups, religious groups and community groups do you (or your husband) belong to?"

and trial of the Morton salt substitute. Therefore, the following hypothesis, suggested in Chapter VI, is accepted:

> Trial will vary directly with the number of memberships held in social and other organizations.

Conclusion

In this chapter the impact of impersonal and interpersonal sources of communication on, first, awareness, and then on the decision to try the Morton salt substitute, was considered. The evidence suggests that the impersonal letter and coupon were the principal source throughout the adoption process, and that interpersonal-informal communication (between community members and between community members and outsiders) was for most triers less important.

Next, interpersonal-informal communication was examined, particularly the interrelationship between initiation and reception of informal communication. Although there was a relatively small amount of informal communication between community members, there seems to be a tendency for informal communication to move from triers to non-triers. Also, the evidence suggests a direct relationship between trial of the Morton salt substitute and the amount of informal communication. The content of informal communication was found to be either favorable or neutral. There seemed to be no unfavorable informal communication.

Finally, several measures of generalized food opinion leadership and membership in social and other organizations

were examined. The evidence with regard to food opinion leadership was inconclusive, while the evidence with regard to memberships held in social and other organizations seem to indicate a positive relationship with trial of the Morton salt substitute.

The next chapter will consider two additional sets of variables: intrapersonal and others (shopping behavior and demographic attributes). At the end of the section dealing with the intrapersonal variables, the relatively small amount of informal communication identified in the present chapter will be discussed.

CHAPTER VIII

INTRAPERSONAL AND OTHER VARIABLES: RESEARCH FINDINGS

In the last chapter research findings pertaining to the flow of impersonal and interpersonal communication were considered. In this chapter, the emphasis will be directed "inward" to intrapersonal variables--those predispositional factors which reflect an individual's need and past experience, his perceived risk, and his tolerance for error.

The availability of a small amount of research, which was reviewed in Chapter V, gives evidence that intrapersonal variables have received little attention in the adoption literature. Most adoption research has focused on the flow of communication from external sources to the individual, rather than on internal sources, or the need and experience of the consumer. As will be seen from the evidence presented in this chapter, intrapersonal variables may be extremely important in determining the purchase of product innovations and may, in fact, be more important, under certain conditions, than the flow of communication from external sources.

In addition to the intrapersonal variables, two other sets of variables--shopping behavior and demographic attributes--will be examined in this chapter.

Intrapersonal Variables

The intrapersonal variables will be considered in the following order: (1) need, (2) experience, (3) perceived risk, and (4) perceived error tolerance.

Need and Experience. The first two intrapersonal variables--need and experience--will be considered together. These two variables have received very little attention in the literature of adoption. For the most part, the few research studies examined in Chapter V treat need and experience in passing, rather than as a central part of the research plan.

In this field study need for a salt substitute was measured by determining whether any member of a respondent's household: (1) limited his intake of regular salt, and (2) had been advised by a professional (physician or dietician) to limit his intake. In addition, respondents were asked if they felt it was necessary to seek professional advice before purchasing a product like a salt substitute. This point was included to establish if the respondents perceived the product as one which required professional sanction, or if it could be purchased, based upon individual determination.

Tables XXI and XXII indicate that over one-half of the households have at least one member on a salt restricted diet, and 45 percent of the households have at least one

TABLE XXI

THE RELATIONSHIP BETWEEN TRIAL AND AT LEAST ONE MEMBER OF RESPONDENT'S HOUSEHOLD BEING ON A SALT RESTRICTED DIET

	Salt Restricted Diets					
	Yes		No		Total	
	Number	Percent	Number	Percent	Number	Percent
Triers	14	25	3	7	17	17
Non-Triers	42	75	41	93	83	83
Total	56	100	44	100	100	100

TABLE XXII

THE RELATIONSHIP BETWEEN TRIAL AND AT LEAST ONE MEMBER OF RESPONDENT'S HOUSEHOLD BEING ADVISED BY A DOCTOR OR DIETICIAN TO RESTRICT SALT INTAKE

	Advised to Restrict Salt Intake					
	Yes		No		Total	
	Number	Percent	Number	Percent	Number	Percent
Triers	14	30	3	6	17	17
Non-Triers	32	70	51	94	83	83
Total	46	100	54	100	100	100

member who was professionally advised to limit salt intake, respectively. The evidence also shows a positive relationship between these two need measures and trial of the Morton salt substitute. For example, 25 percent of those households where at least one member restricted his intake of regular salt purchased the new product, as compared with 7 percent of those who did not restrict their intake. The evidence, in Table XXI, also indicates that triers were four times more likely to be members of a household where there was this restriction, than where there was none.

Table XXIII presents the results of an abstract measure of the importance of seeking professional advice before trying a product like a salt substitute. The results indicate that 28 percent of those who felt that a person should seek professional advice before trying such a product, purchased Morton's new item, as compared with only 5 percent of those who did not feel that it was necessary to seek such advice. This would seem to indicate that those who purchased perceived a salt substitute to be a health product, which required professional authorization. Since triers had more often actually received professional advice (Table XXII) it is consistent that they would perceive it as desirable to seek such advice before purchasing a product like a salt substitute. In addition, Table XXIII shows that a trier was six times more likely to feel that a professional's advice should be secured, than to feel that such advice was unnecessary.

TABLE XXIII

THE RELATIONSHIP BETWEEN TRIAL AND THE PERCEIVED NEED TO SEEK PROFESSIONAL ADVICE BEFORE TRYING A PRODUCT LIKE A SALT SUBSTITUTE

	Seeking Professional Advice							
	Yes		No		Do Not Know		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	13	28	2	5	2	20	17	17
Non-Triers	33	72	42	95	8	80	83	83
Total	46	100	44	100	10	100	100	100

Tables XXI, XXII and XXIII suggest that the three measures of "need" each relate positively to trial of the Morton salt substitute. Based upon this evidence, the following hypotheses outlined in Chapter VI are accepted:

> Trial will be greater if there is a history of restricting the intake of regular salt.
>
> Trial will be greater if there is a medical need to restrict the intake of regular salt.

Experience was measured by asking respondents if any member of their household was presently using a salt substitute. The number of years a salt substitute had been used, and whether the experience had been satisfactory, were factors also determined.

Table XXIV shows that 58 percent of those households where at least one member was presently using a salt substitute purchased the new Morton salt substitute, while only 11 percent of those households where no salt substitute was being used purchased. This evidence suggests a strong relationship between past experience with similar products, and trial of the new product.

Table XXIV also indicates, in absolute terms, that more of the triers were not using a salt substitute before the purchase of the new product. The strong positive relationship between previous usage of salt substitutes, and trial of the product is not inconsistent with the fact that, in absolute terms, more triers had not been using a salt substitute prior to their purchase of the new product.

TABLE XXIV

THE RELATIONSHIP BETWEEN TRIAL AND AT LEAST ONE MEMBER OF RESPONDENT'S HOUSEHOLD PRESENTLY USING A SALT SUBSTITUTE

	Present Use of A Salt Substitute				Total	
	Yes		No			
	Number	Percent	Number	Percent	Number	Percent
Triers	7	58	10	11	17	17
Non-Triers	5	42	78	89	83	83
Total	12	100	88	100	100	100

It seems that the overwhelming majority of those who purchased, but had not been using a salt substitute, were limiting or restricting their intake of regular salt. This seems to suggest that this group may have been moved to try the new product because of the combined effect of their positive predisposition (restriction of intake of regular salt) and the receipt of the special offer coupon for the Morton salt substitute.

A limited number of responses, pertaining to the number of years a salt substitute was used, and whether the users were satisfied with the previous brands, seems to indicate (1) that those who tried Morton's new product had been using salt substitutes for a longer period of time than those who did not make the trial purchase and (2) that several of those respondents who purchased the product were dissatisfied with previous brands, while none of those who were using a salt substitute, and did not purchase the Morton salt substitute, were dissatisfied.[1] Although the limited number of responses makes any conclusion most tenuous, the evidence seems to indicate that the longer salt substitutes had been used and the greater the dissatisfaction with other brands, the greater the likelihood that the Morton salt substitute was purchased.

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[1]These results are too fragmented for tabular presentation.

The results of need and experience measures presented indicate that these two intrapersonal variables appear to play an important role in determining purchase behavior, and that need and experience are factors worthy of future consideration in research studies designed to examine the acceptance of product innovations.

Perceived Risk. The evidence to be presented with regard to perceived risk indicates the existence of an inverse relationship between perceived risk and trial of the Morton salt substitute. These findings are consistent with previous research reviewed in Chapter V.

It will be recalled from the discussion in Chapter VI that a pilot test study showed that a group of elderly consumers perceived two types of risk regarding salt substitutes--taste and health risk. Taste risk is the perceived risk that a new salt substitute will not taste as good as regular salt; and health risk is the perceived risk that a new salt substitute will be better for one's health than regular salt. With regard to taste risk, Table XXV indicates that 53 percent of those respondents who had a low perceived taste risk score tried the Morton salt substitute, as compared with 3 percent of those who had a high risk score. The strength of this inverse relationship is supported by the fact that a trier was 2.6 times more likely to be a low taste risk perceiver than a high risk perceiver.

TABLE XXV

THE RELATIONSHIP BETWEEN
PERCEIVED TASTE RISK AND TRIAL

	Perceived Taste Risk Levels						Total	
	High		Medium		Low			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	3	6	6	16	8	53	17	17
Non-Triers	44	94	32	84	7	47	83	83
Total	47	100	38	100	15	100	100	100

Table XXVI indicates that 42 percent of those who had a low perceived health risk score purchased, as compared with 2 percent of those who had a high health risk score. A trier, in the case of health risk, was ten times more likely to be a low risk perceiver, than a high risk perceiver. Again, the evidence suggests a strong inverse relationship between risk and trial.

A comparison of Tables XXV and XXVI suggests that more triers were low health risk perceivers than low taste risk perceivers. Given that a trier was ten times more likely to be a low health risk perceiver than a high taste risk perceiver, this seems to confirm the notion that low health risk may be a more important factor than low taste risk.

The above evidence pertaining to the two dimensions of perceived risk--health and taste risk--indicates that the following hypothesis proposed in Chapter VI should be accepted:

> Trial will vary indirectly with perceived risk.

The results of the present study, where the respondent group was composed of elderly consumers living in special housing, are consistent with the other research evidence pertaining to perceived risk, which was reviewed in Chapter V. This suggests that with regard to perceived risk, the elderly group studied here is quite similar to younger respondent groups studied in previous research.

TABLE XXVI

THE RELATIONSHIP BETWEEN
PERCEIVED HEALTH RISK AND TRIAL

	Perceived Health Risk Levels							
	High		Medium		Low		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	1	2	6	19	10	42	17	17
Non-Triers	43	98	26	81	14	58	83	83
Total	44	100	32	100	24	100	100	100

Perceived Error Tolerance. Perceived error tolerance was introduced in Chapter V as a new and complementary variable to perceived risk. At that point it was suggested that basically two strategies exist with regard to dealing with the uncertainty of trying new products. Some consumers are so willing to purchase new products when they first appear, they run the risk of trying some which will turn out to be less than satisfactory, so as to increase the likelihood of including as many products as possible which will be satisfactory. A person who elects such an inclusion strategy is willing to run the risk of making a type I error, i.e., to include negative outcomes so as to increase the likelihood of including positive outcomes. On the other hand, some consumers prefer not to purchase new products as they first come out, but rather prefer to wait, and learn from others if the product is good. Those who prefer to wait run the risk of not initially benefiting from some products, which they would find satisfactory. Their strategy is one of exclusion, or a type II error, i.e., they prefer to exclude positive outcomes in order to increase the likelihood of excluding negative outcomes.

Table XXVII presents the results of one of the two measures of perceived error tolerance. Each respondent was asked, "Who is a wiser consumer: a person who tries a new food product which turns out to have a poor taste, or a person who does not try a new food product and later learns

TABLE XXVII

THE RELATIONSHIP BETWEEN PERCEIVED ERROR TOLERANCE AND TRIAL

	Perceived Error Tolerance Strategies							
	Type II Error (Exclusion)		Type I Error (Inclusion)		Do not Know		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	9	16	7	27	1	6	17	17
Non-Triers	47	84	19	73	17	94	83	83
Total	56	100	26	100	18	100	100	100

it has a good taste?" This measure was framed in terms of "taste" rather than "health," since it was felt that for most new food products the principal question is one of taste. Table XXVII shows that 27 percent of those respondents who preferred a type I error (inclusion strategy) purchased, as compared with 16 percent of those who preferred a type II error (exclusion strategy). The "do not know" column suggests that triers were more certain of their position and were more willing to take a stand than non-triers. The results indicate that this measure of perceived error tolerance and trial of the Morton salt substitute are related as hypothesized. In terms of absolute numbers, Table XXVII indicates that non-triers preferred a type II error (exclusion strategy) to a type I error (inclusion strategy) in the proportion of approximately 2:1. By way of contrast, triers preferred a type II error in the proportion of 9:7. Consistent with the hypothesized relationship, this suggests that triers were less likely to prefer a type II error than those who did not try the new Morton salt substitute.

The respondents were also asked, "Do you prefer to try a new brand of food product when it first comes out or to wait and learn how good it is before trying it?" Table XXVIII indicates that 36 percent of the respondents who claimed that they preferred trying new food products when they first come out purchased the Morton salt substitute,

TABLE XXVIII

THE RELATIONSHIP BETWEEN PERCEIVED ERROR TOLERANCE AND TRIAL

	Perceived Error Tolerance Strategies							
	Prefer Waiting (Exclusion)		Prefer Trying (Inclusion)		Do Not Know		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	6	10	11	36	0	0	17	17
Non-Triers	55	90	21	64	7	100	83	83
Total	61	100	32	100	7	100	100	100

as compared with 10 percent of those who preferred waiting for others to try first. Those who purchased the Morton salt substitute were more than 1.5 times as likely to prefer an inclusion strategy to the strategy of exclusion. The results of Tables XXVII and XXVIII (particularly Table XXVIII) support the acceptance of the following hypothesis proposed in Chapter VI:

> Trial will be greater if there is a willingness to make an inclusion error, rather than if there is a willingness to make an exclusion error.

The two measures of perceived error tolerance presented in Tables XXVII and XXVIII are both perceptions of behavior rather than actual behavior. In order to determine the extent of actual past trial of new food products, a measure of "general willingness to try new food products" was generated. Table XXIX indicates that 31 percent of those respondents who had a high general willingness score tried the Morton salt substitute, as compared with 2 percent of those who had a low score. As hypothesized, these results suggest a strong direct relationship between trying new food products and trial of the Morton salt substitute. The hypothesis is supported by the fact that a trier of the new salt substitute was nine times more likely to have a high general willingness score, than a low score. These results are also consistent with the perceived error tolerance results, that is, respondents

TABLE XXIX

THE RELATIONSHIP BETWEEN TRIAL AND GENERAL WILLINGNESS TO TRY NEW FOOD PRODUCTS

	General Willingness Score						Total	
	Low		Medium		High			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	1	2	7	26	9	31	17	17
Non-Triers	43	98	20	74	20	69	83	83
Total	44	100	27	100	29	100	100	100

who perceived that they are willing to try new food products, in fact did have higher actual general willingness scores to try new food products (Tables XXVIII and XXIX). On the other hand, those who perceived that they were not willing to try new products had lower actual general willingness scores to try new foods.[2]

Arndt used a measure of food innovativeness which is almost identical in form to the "general willingness to try new food products" measure used here. Unlike the strong positive relationship found here between the willingness score and trial, Arndt found only limited support for such a direct relationship between his measure and purchase of a new brand of regular coffee.[3] No conclusion is possible since many factors could account for the difference in outcomes between the two studies. However, the results of the present study suggest that those who tried the new Morton salt substitute also tried more new food products in general.

The examination of the four intrapersonal variables indicates that they played an important role with regard to the adoption process. The remainder of this section

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[2]This conclusion is based upon the positive relationship which exists between the two measures of perceived error tolerance and the general willingness to try new food products scores.

[3]Johan Arndt, Word-of-Mouth Advertising: The Role of Product Related Conversation in the Diffusion of A New Food Product (Unpublished Doctoral Dissertation, Graduate School of Business Administration, Harvard University, 1966), p. 104.

will be devoted to an examination of how the intrapersonal variables may assist in explaining the relatively small amount of informal communication identified in the last chapter.

The Relationship Between Intrapersonal Variables and Informal Communication. In the last chapter, which dealt with the flow of communication, attention was focused on a substantial number of measures of informal-interpersonal communication. Although the results indicate that those who initiated or received informal communication from a friend or neighbor living at Kissena I were more likely to purchase the new Morton salt substitute, the evidence also indicates that only about 10 percent of the community's households were active initiators or receivers of informal communication. A discussion of the possible reasons for this small amount of informal communication was deferred until now so as to have the benefit of the results of the intrapersonal variables before undertaking the examination.

The evidence pertaining to need presented in the beginning of this chapter indicates that over 50 percent of the households had at least one member who was restricting his intake of regular salt. In addition, the evidence dealing with experience indicates that households which had at least one member who was using a salt substitute prior to the receipt of the special offer coupon were more likely to purchase the new Morton salt substitute than those who did not have a member who was using a salt substitute.

Also, the greater the number of years a salt substitute was used, and the more the dissatisfaction with previous brands used, the more likely was the purchase of the new product.

Besides the existence of this pattern of need and experience, each household received the half-price special offer coupon and accompanying letter, which served as the principal source of initial exposure to the new product. It is argued here that the combination of need and experience, and exposure to the coupon and letter, were of sufficient strength to make the seeking out of external sources of information (informal communication) unnecessary for this group of elderly consumers.

The key to the importance of both need and experience may be the age of the group members, and the extensive amount of general consumption experience which goes along with age. The group of elderly consumers studied in the present field experiment had most likely acquired a large number of preconceived likes and dislikes during the years that they had been making consumption decisions. Such patterns would not be as well established if the group studied was composed of younger households. These established biases may serve the elderly consumer in much the same way as receptivity to, or the seeking out of informal communication, serves the less initiated younger household.

Within the marketing literature there are three studies which support the notion that generalized experience comes with age and that older or more experienced consumers may rely more on past experience, and less on external informal communication. Cox, in his in-depth study of the consumer behavior of two housewives, found that one subject who relied upon her past experience when making consumer decisions, was married for five years, while the subject who sought out external sources of informal information was married for only six months.[4] Katona and Mueller found in their examination of the consumer decision making process that older families evidenced less deliberation when it came to making a purchase decision.[5] Although this could be interpreted as due to either carelessness, or the effect of higher income, it may also suggest that the accumulated experience of older families makes the seeking out of external information less important. Feldman and Spencer,[6] in a study of the selection of physicians by a sample of

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[4]Donald F. Cox, "Risk Handling in Consumer Behavior - An Intensive Study of Two Cases," in Donald F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior (Boston: Division of Research, Graduate School of Business, Harvard University, 1967), pp. 40-54.

[5]George Katona and Eva Mueller, "A Study of Purchase Decisions," in Lincoln H. Clark (ed.), Consumer Behavior (New York: New York University Press, 1955), p. 61.

[6]Sidney P. Feldman and Merlin C. Spencer, "The Effect of Personal Influence in the Selection of Consumer Services," in Peter D. Bennett (ed.), Marketing and Economic Development (Chicago: Proceedings of the Fall Conference of the American Marketing Association, 1965), p. 446.

newcomers to a midwestern metropolitan community, found that those using impersonal sources (telephone directories) to select a physician were over 35 years of age and in the upper end of the socioeconomic spectrum, while those using informal sources (friends and neighbors) were 35 years or younger, and in the middle of the socioeconomic spectrum.

In addition to need and experience, the fact that those who purchased the new product perceived less risk with regard to salt substitutes and were more willing to run the risk of a type I error, an inclusion strategy, may also be indicative of the fact that seeking additional information was not necessary when the proper mix of need and experience is coupled with low perceived risk and preference for trying new products. On the other hand, those who had higher levels of perceived risk and preferred a type II error, an exclusion strategy, may have felt that there was insufficient incentive to alter their pattern of solely restricting their intake of regular salt. For this group of non-triers the seeking out of additional information was equally unnecessary, since their behavioral biases were also well established.

In this section several possible reasons for the small amount of informal communication were discussed. The overall conclusion is that a group of experienced elderly consumers, such as the group studied here, may have accumulated sufficient information over the years anddeveloped satisfactory patterns of behavior which make informal communication presently less important.

Other Variables

In this section the relationship between trial of the Morton salt substitute and two sets of variables, (1) shopping behavior, and (2) demographic attributes, will be examined.

Shopping Behavior Variables. This set of variables focuses on the relationship between trial of the Morton salt substitute and the number of stores shopped, the frequency of shopping, the frequency of shopping with others, and deal proneness.

Table XXX shows the relationship between number of stores shopped for grocery items, and trial of the Morton salt substitute. This relationship is explored as a means of getting some fix on the possible impact of in-store exposure and trial. The evidence indicates that 22 percent of those respondents who shop in three or more stores purchased the new salt substitute, while only 9 percent who shop in only one store purchased. In addition, the results indicate that a household which tried was twice as likely to shop in three or more stores, than to shop in only one store. These results suggest a relatively strong direct relationship between the number of stores shopped for the majority of a household's food needs and purchase of the Morton salt substitute. Therefore, the following hypothesis is accepted:

> Trial will vary directly with the number of stores shopped.

TABLE XXX

THE RELATIONSHIP BETWEEN TRIAL AND NUMBER OF STORES SHOPPED FOR MAJORITY OF GROCERY ITEMS*

	Number of Stores Shopped							
	One Store		Two Stores		Three or More Stores		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	3	9	8	20	6	22	17	17
Non-Triers	29	91	33	80	21	78	83	83
Total	32	100	41	100	27	100	100	100

*These results are based upon the responses given to the following question: "In which neighborhood stores do you (or your husband) shop for the majority of your grocery items?"

Table XXXI does not indicate any difference between those who shop daily and those who shop once a week or less as far as trial of the Morton salt substitute is concerned. Therefore, there is no real evidence, based upon these results, that frequency shopping is capable of distinguishing between triers and non-triers. The following hypothesis, therefore, is rejected:

> Trial will vary directly with the frequency of shopping.

The relationship between shopping with others and product trial was examined to determine if informal social interaction at the point of purchase might influence new product trial. Table XXXII shows that 17 percent of those respondents who "never" or "seldom" shop with others purchased the Morton salt substitute, as compared with 15 percent who claim that they "sometimes" shop with others; none of those who claim that they "often" shop with others purchased. These results suggest the existence of an inverse relationship between shopping with others and trial of the Morton salt substitute. Since a direct relationship was hypothesized, the following hypothesis is rejected:

> Trial will vary directly with the frequency of shopping with others.

Three shopping behavior variables have been examined thus far: number of stores shopped, frequency of shopping and frequency of shopping with others. Only the first,

TABLE XXXI

THE RELATIONSHIP BETWEEN TRIAL AND FREQUENCY OF SHOPPING*

	Frequency of Shopping							
	Once a Week or Less		Two to Four Times a Week		Daily		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	4	17	9	16	4	17	17	17
Non-Triers	20	83	43	84	20	83	83	83
Total	24	100	51	100	24	100	100	100

*These results are based upon the responses given to the following question: "How frequently do you (or your hsuband go shopping for grocery products?"

TABLE XXXII

THE RELATIONSHIP OF TRIAL
AND FREQUENCY OF SHOPPING WITH OTHERS*

	Frequency of Shopping with Others						Total	
	Never/Seldom		Sometimes		Often			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	15	17	2	15	0	0	17	17
Non-Triers	70	82	11	85	2	100	83	83
Total	85	100	13	100	2	100	100	100

*These results are based upon the responses given to the following question: "When you (or your husband) go shopping how often do you go with someone else who lives at Kissena I?"

number of stores shopped, is positively related to trial, as hypothesized. The two other shopping behavior variables did not behave as hypothesized, and therefore are rejected.

One other subgroup of shopping variables, deal proneness, the tendency to take advantage of special store sales and use of special offer coupons, was also examined with regard to trial of the Morton salt substitute. Table XXXIII indicates that 14 percent of those who "never" or "seldom" look for advertisements of store sales purchased the Morton salt substitute as compared with 12 percent of those who "often" look for such advertisements. The small spread between these two extreme points makes any concrete conclusion impossible.

Table XXXIV shows that 15 percent of those who "never" or "seldom" take advantage of special offer coupons purchased the Morton salt substitute, as compared with 10 percent who "often" take advantage of special offer coupons. Furthermore, the results indicate that a trier was three times more likely to either "never" or "seldom" take advantage of special offer coupons than to "often" take advantage of special offer coupons. These results are not consistent with the hypothesized relationship, particularly since a coupon was used to generate awareness and interest for the Morton salt substitute. The results may indicate that those who purchased the new salt substitute purchased primarily for reasons other than the receipt of the special

TABLE XXXIII

THE RELATIONSHIP BETWEEN TRIAL AND FREQUENCY OF LOOKING FOR NEWSPAPER ADVERTISEMENTS OF FOOD STORE SALES*

	Reported Frequency of Looking for Advertisements of Store Sales							
	Never/Seldom		Sometimes		Often		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	5	14	8	28	4	12	17	17
Non-Triers	32	86	21	72	30	88	83	83
Total	37	100	29	100	34	100	100	100

*These results are based upon the responses given to the following question: "How often do you (or your husband) look for newspaper advertisements of food store sales?"

TABLE XXXIV

THE RELATIONSHIP BETWEEN TRIAL AND FREQUENCY OF COUPON REDEMPTION*

	Reported Frequency of Coupon Redemption							
	Never/Seldom		Sometimes		Often		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	7	15	8	24	2	10	17	17
Non-Triers	40	85	25	76	18	90	83	83
Total	47	100	33	100	20	100	100	100

*These results are based upon the responses given to the following question: "When you receive or see a price off coupon how often do you use it?"

offer coupon. In Chapter VII where the reasons for purchasing the product were considered, the evidence suggests that a relatively small number of triers credited their purchase to the coupon. It would seem that this gives further support to the notion that the product was bought because of a health need, rather than because the triers were deal prone.

Using similar measures of deal proneness, Arndt found a strong positive relationship between deal proneness and acceptance of a new brand of regular coffee, for a sample of young university housewives.[7] Since Arndt's study is the only field experiment which measured deal proneness, it is impossible to draw any concrete conclusions with regard to deal proneness as pertains to the great difference in age of the two groups studied. On the surface, the evidence would seem to indicate that Arndt's younger sample group is more deal prone; however, this is a dangerous conclusion to draw from only one other study, especially one where a different product was used.

The results presented here indicate that the following hypothesis pertaining to the relationship between deal proneness and trial is rejected:

> Trial will vary directly with the degree of deal proneness.

With the exception of the "number of stores shopped" the shopping behavior variables are either inconclusive or rejected.

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[7]Arndt, op. cit., p. 98.

Demographic Attributes. The relationship between trial of the Morton salt substitute and the following three demographic attributes will be examined here: (1) age of the respondent, (2) marital status, and (3) income.

With regard to age, Table XXXV shows that those who were 75 years or younger were more likely to have purchased the Morton salt substitute than those who were 76 or older. As hypothesized, there appears to be a tendency for trial and age to vary inversely.

The relationship between marital status and trial of the Morton salt substitute was examined to see if family life situation might have any impact on the trial of new products. Due to the limited number of single residents, Table XXXVI only clearly shows that married residents were more likely to purchase than those who were widowed or single. Therefore, the following hypothesis pertaining to the relationship between marital status and trial cannot be accepted:

> Trial will be greater for married and single households than for widowed households.

Turning attention to the relationship between income and trial, Table XXXVII indicates that 20 percent of those households which had incomes of $4,000 or more purchased the Morton salt substitute, as compared with 14 percent of those with incomes under $2,000.[8] The results also

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[8]The use of other income breakdowns do not substantially alter the conclusion.

TABLE XXXV

THE RELATIONSHIP BETWEEN TRIAL AND AGE

	Age Groups							
	65 and Younger		66 - 75		76 and Older		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	1	20	10	19	6	14	17	17
Non-Triers	4	80	43	81	36	86	83	83
Total	5	100	53	100	42	100	100	100

TABLE XXXVI

THE RELATIONSHIP BETWEEN TRIAL AND MARITAL STATUS

	Marital Status							
	Widowed		Single		Married		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	8	15	1	25	8	20	17	17
Non-Triers	47	85	3	75	33	80	83	83
Total	55	100	4	100	41	100	100	100

TABLE XXXVII

THE RELATIONSHIP BETWEEN TRIAL AND INCOME

	Income Groups						Total	
	Under $2,000		$2,000 to $3,999		$4,000 and Over			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Triers	2	14	6	14	9	20	17	17
Non-Triers	12	86	36	86	35	80	83	83
Total	14	100	42	100	44	100	100	100

indicate that triers who had incomes of $4,000 or more were four times as likely to purchase the product as triers who had incomes of under $2,000. This evidence suggests a rather strong direct relationship between income and trial, which is logical when it is considered that income as an "enabler" is a particularly sensitive factor for elderly retired households which have a relatively small fixed income.

Conclusion

The first section of this chapter was devoted to an examination of four intrapersonal variables. The results of the research presented indicate that need and experience are positively related to trial of the Morton salt substitute. Restricting one's intake of regular salt, being advised by a professional to restrict the intake of regular salt, feeling that it is desirable to seek the advice of a professional before trying a product like a salt substitute, and having used a salt substitute before, all were affirmatively related to trial of the Morton salt substitute. In addition, triers seemed to have used salt substitutes for a longer period of time than non-triers, and they were also less satisfied with the brands previously used than were non-triers.

As hypothesized, the evidence also indicates a strong indirect relationship between each of the two dimensions of perceived risk and trial of the Morton salt substitute.

The new complementary measure of perceived error tolerance also performed as predicted. Those who purchased the Morton salt substitute were more willing to run the risk of an inclusion error, while those who did not purchase were more likely to prefer an exclusion error. Further, those who purchased the Morton salt substitute seemed to have actually tried more new food products than those who did not purchase, as indicated by the "general willingness to try new food products" variable.

It was also suggested that the relatively small amount of informal communication, identified in the last chapter, could possibly be explained by the developed patterns of behavior which come with age and experience. It was argued that the generalized experience of the elderly makes their need for informal sources of communication less essential than that of a younger, less experienced, consumer group.

In addition to the intrapersonal variables, a small number of shopping behavior variables and demographic attributes were examined. The evidence suggests that only "number of stores shopped" was positively associated with trial of the Morton salt substitute. The other shopping behavior hypotheses were either inconclusive or rejected.

In the next, and final, chapter the results presented in this dissertation are summarized, a conclusion is drawn and several recommendations are offered.

CHAPTER IX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter the review of the literature and research findings presented in this dissertation will be tied together, and some implications of the results will be explored.

Summary

The objective of the research described in the preceding chapters was to explore the acceptance of a new product by a group of elderly consumers, living in a geriatric community. An extensive search of the relevant literature of marketing, rural sociology, the sociology of communication, social gerontology, and several other disciplines indicated that the elderly have not previously served as the subjects for such a field experiment. As discussed in Chapter I, the published materials which examine the elderly as consumers tend to concentrate on the aggregate growth of the elderly segment of the population (i.e., analysis of changes in the United States census data with regard to those 65 and older). That there is a need for behaviorally oriented consumer studies of the elderly was also documented

in the beginning of this dissertation by reference to statements made before a Senatorial Subcommittee concerned with the welfare of the elderly as consumers.

The adoption process, which has its roots in the research tradition of rural sociology, served as the conceptual framework for the field experiment. To assist in the organization of the literature, a diffusion/adoption paradigm was proposed. The paradigm consists of three phases: (1) a diffusion process phase, (2) an adoption process phase, and (3) a related variables phase. The available research pertaining to each of the three phases of the diffusion/adoption paradigm was examined.

The third paradigm phase, the "related variables," received particular attention, since it was the examination of the relationship between these variables and trial of a new food product which was the basic research objective of the field experiment. The related variables were brought together in what seemed to be three logical "sets" of behavioral variables: (1) flow of communication variables, (2) intrapersonal variables (need, experience, perceived risk, and perceived error tolerance), and (3) other variables (shopping behavior and demographic attributes.)

Of the three sets of related variables, the flow of communication has received the greatest attention in the research literature of marketing. In order to organize the available evidence, a simple taxonomy of the sources of

information and their characteristics was developed. Two major source categories, impersonal and interpersonal, were employed. Impersonal sources were subdivided into mass media sources, editorial content, and specialized neutral publications, i.e., Consumer Reports. The second major category, interpersonal sources, was divided into informal and formal sources of communication. Informal sources were defined as communication taking place between two or more parties, neither of whom represented a commercial selling source. Formal sources were represented as communication where one of the parties is a professional (or commercial) influencer, such as a sales representative, who is compensated for presenting a product or service to potential purchasers. This new taxonomy seemed to be more flexible for analyzing marketing adoption communication sources than otheravailable classification schemes.[1] Employing the taxonomy, two main points were examined--the impact of different sources of communication at specific stages of the adoption process, and the dynamics of the informal communication process.

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[1]For other classification schemes, see: Everett M. Rogers, Diffusion of Innovations (New York: The Free Press, 1962), pp. 98-105; and Donald F. Cox, "The Audience as Communicators," in Stephen A. Greyser (ed.), Toward Scientific Marketing (Chicago: Proceedings of the Winter Conference of the American Marketing Association, 1963), p. 63.

The second set, intrapersonal variables, includes need, experience, perceived risk, and perceived error tolerance.

Need was conceived of as a stimulus, or trigger, for search for information. Experience was envisioned as a source of internal information. It was suggested that if an individual has satisfactory past experience, he may require little, if any, supplementary information from external sources. On the other hand, if an individual had little relevant experience, or if he did not place much value on his past experience, he might require much external information. The limited amount of available research evidence gleaned from marketing literature supports the idea that past experience serves as an internal source of information, and that experienced individuals are likely to require less supplementary information before making a purchase decision.

The third intrapersonal variable, perceived risk, views consumption as problem-solving, where the consumer acts to reduce uncertainty to a level where he can select an appropriate course of action. The present examination of perceived risk concentrated on the following: predispositional and social factors which may produce uncertainty; techniques which have been employed to measure perceived risk; studies of <u>within</u> and <u>between</u> product category perceived risk; and strategies which an individual might employ to reduce his perceived risk.

Of particular significance were the strategies employed to reduce perceived risk. The evidence seems to indicate that low risk perceivers seek out, or avail themselves of less supporting information than high risk perceivers, who require more information to reduce their level of risk, or bring their level of knowledge in line with their level of risk. This generalization suggests that perceived risk may at least partially moderate the amount of information an individual deems necessary before he is willing to purchase a particular product. When perceived risk is coupled with experience, it seems likely that a low risk person would be willing to rely on his past experience and, therefore, require less external sources of information than an inexperienced individual who depends upon external sources for evaluating a given product decision.

A new intrapersonal variable, perceived error tolerance, was also introduced. Perceived error tolerance was offered as a complement to perceived risk. Conceptually, it was proposed that, as risk takers, consumers exhibit one of two strategies in their new product purchase behavior. Some consumers are willing to make a "type I error" or a <u>strategy of inclusion</u>; that is, prefer to include some poor product choices so as to increase or maximize the likelihood of including positive product choices. On the other hand, some consumers are willing to make a "type II error" or a strategy of exclusion; that is, a preference to exclude some desirable choices so as to increase or maximize the likelihood of not

including products which they would find undesirable. Those consumers who are willing to tolerate a type I error were categorized as "venturesome," while those consumers who preferred a type II error were categorized as seeking security or safety. It was expected that those who preferred a type I error would be more likely to try new products than those who preferred a type II error. A small amount of literature from psychology and marketing was presented in support of the perceived error tolerance variable.

The third set of variables examined, labeled "other variables," was brought together for purposes of convenience (number of stores shopped, frequency of shopping, frequency of shopping with others, and deal proneness) and demographic attributes (age, marital status, and income).

In order to study the acceptance of a new food product by members of a geriatric community, the assistance of the management of Kissena I was secured. The Kissena I community met the requirements of being self-contained, having been set up exclusively for the elderly. The residents of this community were all of the Jewish faith; most were born in Europe and came to the United States to avoid or escape persecution by the Nazis. The average age of the members of the community was 74 years. All residents who had worked were retired.

To study the acceptance of a new product, support was received from the Morton Salt Company, which made their new salt substitute available for this research. The product seemed particularly suitable for the study, since the

elderly constitute the prime market for such a product, because of the increased need to restrict the intake of regular salt as one advances in age. The product was also desirable because it was not available prior to the field experiment. This meant that it was likely to be unknown to all of the members of the community. The Morton salt substitute was placed by the researcher in the three supermarkets serving the community.

To achieve initial awareness and stimulate interest for the new Morton salt substitute, a letter and half-priced coupon were distributed to each member of the Kissena I community. The letter described the features of the product, the stores where it was available, and specified the two-week "life" of the special offer.

College students, majoring in marketing, and who professed an interest in the research project, were selected and trained to do the interviewing. Within two days, 99 of the 101 residents were interviewed, and several days later another resident was seen, bringing the total to 100 completed interviews. The one resident not interviewed was unavailable because she became ill, and was hospitalized after the start of the field experiment.

Summary of Research Findings. The results of the field experiment indicate that 17 percent of the respondents redeemed the coupon during the trial period; this group constituted the "triers." The majority of those who tried

gave a health-related reason for their purchase, while the majority of non-triers claimed that they did not need the product.

As expected, most respondents identified the letter and coupon as their source of initial awareness. A comparison of the perceived importance of the letter and coupon, as well as informal communication, indicated that most of the triers viewed the letter and coupon as the most important source of information about the Morton salt substitute. However, since only 10 percent of the respondents engaged in any informal communication, most of the respondents were not in the position to adequately compare the impersonal and interpersonal-informal sources of product-related information.

Although there was only a relatively small amount of informal communication, the findings suggest that those who did engage in it were more likely to purchase the product than those who did not engage in such informal communication.

Analysis of the product-related conversation among residents of the Kissena I community offered tentative support of the notion that word-of-mouth publicity moved from triers and those who were particularly disposed toward the product (yet were non-triers) to non-triers.

Most of the informal communication with outsiders was between a community member and relative. Those respondents who discussed the product with someone outside of the community seemed to be informing a relative of the product's existence, because they felt that the relative would benefit

from its use. Respondents who communicated with outsiders were not, for the most part, the same residents who communicated with other members of Kissena I.

The content of all of the informal communication was either favorable or neutral (with regard to trial of the product). There was no evidence of any unfavorable word-of-mouth communication.

In line with the low rate of specific communication about the Morton salt substitute, the results of the general measures of food opinion leadership showed no clear relationship between being a food opinion leader, and trial of the new product. On the other hand, the related social variable, membership in social and other organizations, was positively related to trial of the Morton salt substitute.

An examination of physical proximity (floor lived on) indicated that 70 percent of the parties who named and were named an opinion leader, lived on the same floor of the apartment house type community. These results point up the importance of physical proximity in the formation of informal communication patterns (especially with older people, where mobility may be limited.)

Each of the four intrapersonal variables was related to trial of the Morton salt substitute as hypothesized. The two measures of need, namely, that at least one member of a respondent's household limit his intake of regular salt,

and that a professional (physician or dietician) recommended limiting it, were both positively related to trial of the Morton salt substitute.

Experience, which was measured by at least one member of the respondent's household presently using a salt substitute, was also positively related to trial of the new product. In addition, a limited amount of evidence suggested that those who purchased the Morton salt substitute had been using a salt substitute for a long period of time, and tended to be dissatisfied with the brands previously used, while those who did not purchase tended to have less experience with salt substitutes, and were pleased with the brands used.

The two types of perceived risk, taste and health, were both found to be indirectly related to trial of the Morton salt substitute. Those who were low risk perceivers were more likely to purchase the new product than those who were high risk perceivers. These results are consistent with available research evidence which examined the perceived risk of younger groups of housewives.

The results pertaining to a new factor advanced in this dissertation--perceived error tolerance--indicated that those who were willing to make a type I error, or preferred trying new products as they came out, were more likely to try the new Morton salt substitute than those who were willing to make a type II error, preferring to wait and learn from the experience of others if a new product should be purchased.

The exploratory examination of perceived error tolerance is consistent with the proposed behavior of the variable and the psychological and marketing literature upon which it is based. As a partial test of the validity of the perceived error tolerance variable, the results of a measure of general willingness to try new food products, which is an actual measure of new product trial, indicated that those who had a high score with regard to past trial of new food products were more likely to try the new Morton salt substitute. Furthermore, those who had a high "general willingness to try new food products" score were more willing to make a type I error, or perceived themselves as following an inclusion strategy.

The results of the "other variables," shopping behavior and demographic attributes, were mixed. With the exception of the number of stores shopped, which was positively related to trial of the new product, the shopping behavior variables (frequency of shopping, frequency of shopping with others, and deal proneness) did not relate to trial as had originally been suggested.

Three demographic attributes--age, marital status, and income--were examined. The findings suggest that younger residents were more likely to try the new product than older residents. With regard to marital status, the evidence suggests that married residents were more likely to purchase than those who were widowed or single. As might be expected,

a positive relationship between income and trial of the Morton salt substitute was found. Those who tried were more likely to have incomes of $4,000 or more, than incomes of $2,000 or less.

The results of the hypothesized relationship between each of the variables reviewed above, and trial of the new Morton salt substitute, is summarized in Table XXXVIII.

Conclusion

An unexpected finding of the present study was the relatively low incidence of informal communication with regard to the new Morton salt substitute. The results indicated that 10 percent of the households of the Kissena I community were involved in either initiating, or receiving, informal communication. Other marketing adoption studies, where the subjects were younger housewives, have reported a much higher incidence of informal communication. It would appear that the age differential between the Kissena I group, and those groups examined in the marketing literature, might at least partially account for the difference in extent of informal communication activity. This observation is supported when the Kissena I study is compared with Arndt's research of the acceptance of a new brand of regular coffee by young wives of graduate students, living in

TABLE XXXVIII

SUMMARY OF RESEARCH FINDINGS

Hypotheses	Accepted	Rejected	Inconclusive
Flow of Communication			
Trial will vary directly with the amount of product related conversation.	x		
Trial will vary directly with the favorableness of the content of product related conversation.			x
Trial will vary directly with the variety of sources of product related conversation.			x
Trial will vary directly with the frequency with which one is designated by others a person they discuss new food products with.		x	
Trial will vary directly with the frequency of being designated usually first to try new food products by others.		x	
Trial will vary directly with the number of memberships held in social and other organizations.	x		
Intrapersonal Variables			
Trial will be greater if there is a history of restricting the intake of regular salt.	x		
Trial will be greater if there is a medical need to restrict the intake of regular salt.	x		

Table XXXVIII (Continued)

Hypotheses (continued)

Intrapersonal Variables (continued)	Accepted	Rejected	Inconclusive
Trial will vary indirectly with perceived risk.	x		
Trial will be greater if there is a willingness to make an inclusion error, rather than if there is a willingness to make an exclusion error.	x		
Trial will vary directly with the degree of general willingness to try new food products.	x		
Other Variables			
Trial will vary directly with the number of stores shopped.	x		
Trial will vary directly with the frequency of shopping.		x	
Trial will vary directly with the frequency of shopping with others.		x	
Trial will vary directly with the degree of deal proneness.		x	
Trial will vary indirectly with age.	x		
Trial will be greater for married and single households than for widowed households.		x	
Trial will vary directly with income.	x		

a university-operated housing community. Arndt found that a substantial number of the housewives engaged in product-related conversation with other members of the community.[2]

The results of the present study seem to suggest that need and experience served as sources of internal information, which become substitutes for seeking out additional support in the form of informal communication. It appears that the majority of triers were content with the combination of their need and past experience, and the information provided by the initial letter and coupon. For those residents who did not purchase the product, the evidence suggests that there was either no need to restrict the intake of regular salt, and therefore no need for the salt substitute, or where there was a need, those who did not try were satisfied to simply restrict their intake of regular salt, and saw no reason to purchase the new product.

Other possible reasons for the low rate of informal communication also come to mind. For one, it is conceivable that the elderly may isolate themselves from their neighbors and, therefore, do not take advantage of the opportunity to engage in informal communication to the extent that younger people, who are more open to making new friends, do. Although this point seems credible, the impression of the

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[2]Johan Arndt, Word-of-Mouth Advertising: The Role of Product-Related Conversations in the Diffusion of A New Food Product (Unpublished Doctoral Dissertation, Graduate School of Business Administration, Harvard University, 1966).

researcher would tend to indicate that this was not the case with the Kissena I group. The community seems to be an extremely well-integrated unit. There exists a large program of social functions, and participation rate is high. Also, it will be recalled from the responses to the questions designed to measure food opinion leadership, that over 45 percent of the community named someone else. Those who named, and those who were named, tended to live on the same floor in the apartment house type community. This would suggest a relatively strong pattern of friendships.

Two other logical reasons for the small amount of informal communication are the product selected for the study, and the two-week "life" of the special offer coupon. A product like a salt substitute might generate a low level of word-of-mouth involvement. Also, the relatively short period of time in which the special offer was valid might not have been sufficient to achieve the major thrust of informal communication. Although these reasons are possible, they seem unlikely. One would expect in a community where more than 50 percent of the households had at least one member who was on a salt restricted diet, that there would be sufficient interest in such a product. It would seem that a product which had such a level of potential interest would generate more product-related conversation than a new brand of coffee.[3] Therefore, the evidence presented which

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[3]Arndt also used a two-week period for redemption of his price-off coupon; see: Arndt, op. cit., pp. 36-37.

suggests that the intrapersonal variables, particularly past experience, account for the low rate of informal communication. seems to be the most appropriate explanation.

Moreover, it is proposed that the elderly residents of the Kissena I community have attained with age extensive generalized consumer experience, which serves as an internal source of information, and as a substitute for informal communication.

Several studies examined in Chapter VIII support the idea that experience serves as a source of internal information, which makes the extensive seeking out of external sources of information unnecessary.

In addition to need and experience, the two other intrapersonal variables, perceived risk and perceived error tolerance, seem to moderate the amount of information sought in a given purchase situation. If an individual is a low risk perceiver, and he is willing to run the risk of a type I error, an inclusion strategy, then his need for external sources of information will be less than an individual who is a high risk perceiver, and who is willing to run the risk of a type II error, an exclusion strategy. Thus, the evidence suggests that the four intrapersonal variables moderate the extent of external search for information required in the making of new product purchase decisions.

Recommendations and Implications

Since this study represents the first field experiment of the acceptance of a new product by elderly consumers, it is necessary that additional studies be designed to examine consumer behavior of this group, and to test the conclusions drawn from the present findings, pertaining to the interrelationship between communication flows and experience in the making of purchas decisions. In order to get a clearer picture of the function of both past experience and the various sources of external information, a wider variety of households with more diverse backgrounds is called for. To achieve these ends, it would be desirable that researchers examine, over time, the changing purchasing behavior of households which are at different stages in the family life cycle. Such longitudinal research would accomplish two things: (1) it would allow for comparison between different households at various stages in the family life cycle, at the same point in time, and (2) it would allow for comparisons between the same households as they pass from one stage in the family life cycle to another.

Before such extensive research is undertaken, studies designed to develop improved measurement instruments would also seem worthwhile. For example, it would be necessary to develop a battery of questions which would allow for systematic evaluation of changing family experience and, likewise, shifts in the use of available sources of product

related information. In addition, future research should be undertaken to test the perceived error tolerance variable introduced here. It is important to determine whether analysis of the perceived error tolerance variable can be expanded and the interrelationship between the perceived risk and perceived error tolerance variables can be clarified.

If such proposed research substantiates that past experience does serve as a substitute for informal communication, then it is conceivable that marketers may be able to segment their promotional efforts to match the experience level of their audiences. For example, impersonal mass media advertising and such promotional tools as "through the mail price off coupons" may be found to sufficiently meet the informational requirements of older more experienced consumers. On the other hand, if a particular market group is composed of younger less experienced consumers, the impersonal sources of communication would be designed to stimulate interest, and provide an informational base which assists those who will engage in informal communication.

It is hoped that this study has demonstrated that the elderly household represents a market segment worthy of the same type of careful marketing research which in the past has exclusively been given to the younger household.

APPENDIX I

MORTON SALT COMPANY · 110 NORTH WACKER DRIVE · CHICAGO, ILLINOIS 60606 · (312) 621-5200

March, 1970

Dear Shopper:

We're introducing our new Morton Salt Substitute. If you would like to try a salt substitute that tastes like the real thing, here it is!

To help you get to know our new Morton Salt Substitute there is a 30-cents off coupon at the bottom of this letter. This will give you the opportunity to try this new product at about one-half the regular price.

This offer is good only for the next 2 weeks. You have until April 11, 1970 to redeem it at one of the following stores in your neighborhood:

A&P / King Kullen / Waldbaum
on Kissena Blvd.

Morton Salt Substitute tastes like the real thing. After all, we've been producing the real thing for over 58 years. We know what real salt flavor is. Now you can know too. Won't you redeem this coupon, and take advantage of our special offer now?

Thank you,

(Mrs.) Janet Crown

30¢ STORE COUPON

REDEEMABLE ON MORTON™ SALT SUBSTITUTE ONLY

To the Dealer: You are authorized to act as our agent in redeeming this coupon. We will reimburse you for the face value of this coupon, plus 3¢ for handling, provided you and the consumer have complied with the terms of this coupon offer. This coupon is good only when redeemed by you from a consumer at a time of purchasing specified brand. The consumer must pay any sales tax involved. This coupon is non-assignable. Invoices proving purchase of sufficient stock of our brands to cover coupons presented must be shown upon request. Coupon void if use is prohibited, restricted or taxed. Coupons will be accepted for reimbursement only if identified as being the property of the retail distributor of our merchandise who redeemed them. Coupons must be mailed to: Morton Salt, P.O. Box 1575, Clinton, Iowa 52732. This coupon good only on Morton Salt Substitute. Any other use constitutes fraud. Cash redemption value 1/20 of 1¢ F1-088

REDEEM PROMPTLY

30¢

30¢

A DIVISION OF MORTON INTERNATIONAL, INC

APPENDIX II

(Your Name _____, Interview Time: Begin _____ End _____)

DIET AND SHOPPING STUDY

Respondent's Name _____ Apt. # _____
(First and Last)

IF RESPONDENT IS NOT REACHED OR INTERVIEW NOT COMPLETED INDICATE REASON:

1. How frequently do you (or your husband) go shopping for grocery products?
   daily..... ____ once a week..... ____
   3 or 4 times a week ____ less than once a week ____
   2 times a week..... ____ (Do not know ____)

2. In which neighborhood stores do you (or your husband) shop for the majority of your grocery items? (Check as many as apply)
   A&P ____ King Kullen ____ Waldbaum ____
   Other (s) _____ (Do not know ____)

3.

	Never	Seldom	Some-times	Often	Do not know
a) When you (or your husband) go shopping for food products how often do you go with some-one else who lives at Kissena I- Would you say:.....	( )	( )	( )	( )	( )
b) How often do you (or your husband) look for newspaper advertisements of food store sales- Would you say	( )	( )	( )	( )	( )
c) When you receive or see a price off coupon how often do you use it- Would you say.....	( )	( )	( )	( )	( )

4. With regard to your use of food, do you keep a kosher home?
   Yes ____ No ____ Meats Only _____ (Do not know ____)

5. With which persons, here at Kissena I, do you discuss new food products?
   (PROBE)
   LIMIT TO THREE NAMES

First Name	Family Name	Apt. or Floor

None _____ (Do not know ____)

6. Which persons, here at Kissena I, would you say are usually first to try new food products? (PROBE)
   LIMIT TO THREE NAMES

First Name	Family Name	Apt. or Floor

None ____ (Do not know ____)

7. Are you (or your husband) on:

	RESPONDENT			HUSBAND		
	Yes	No	Do not know	Yes	No	Do not know
a) a low fat diet?.....	( )	( )	( )	( )	( )	( )
b) a sugar restricted diet?	( )	( )	( )	( )	( )	( )
c) a salt restricted diet?.	( )	( )	( )	( )	( )	( )

d) Other diet? _____

8. Has a doctor or dietician advised you (or your husband) to use less or to stop using:

	RESPONDENT			HUSBAND		
	Yes	No	Do not know	Yes	No	Do not know
a) butter fat products.....	( )	( )	( )	( )	( )	( )
b) sugar.....	( )	( )	( )	( )	( )	( )
c) salt.....	( )	( )	( )	( )	( )	( )

9. Should a person ask a doctor's or dietician's advice before trying a new food product like:

	Yes	No	Do not know
a) a sugar substitute	( )	( )	( )
b) a salt substitute	( )	( )	( )

10. Do you (or your husband) use:

	RESPONDENT			HUSBAND		
	Yes	No	Do not know	Yes	No	Do not know
a) margarine.....	( )	( )	( )	( )	( )	( )
b) sugar substitute.....	( )	( )	( )	( )	( )	( )
c) salt substitute.....	( )	( )	( )	( )	( )	( )

IF THE ANSWER TO 10c IS YES ASK:

11. a) Approximately when did you start buying salt substitute?

less than 1 year ago... ____ about 4 years ago ____
about 1 year ago..... ____ about 5 years ago ____
about 2 years ago..... ____ over 5 years ago ____
about 3 years ago..... ____ (Do not know ____)

b) Have you (or your husband) been satisfied or dissatisfied with the brand of salt substitute you have used?

satisfied ____ dissatisfied ____ (Do not know ____)

IF DISSATISFIED, ASK:

c) Why are you dissatisfied?

_____

_____

d) Which brands of salt substitutes do you recall buying?

Adolphs ____ Other(s) _____

(Do not know ____)

12. Would you say it is not important, of some importance, or quite important for you (or your husband) to get a salty flavor into your food?

Respondent: not important ____ Husband: not important..... ____
of some importance ____ of some importance.____
quite important... ____ quite important....____
(Do not know____) (Do not know ____)

13. Would you say you are quite certain, somewhat certain, or not certain that a new brand of salt substitute would taste as good as regular salt?

quite certain... ____ not certain.... ____
somewhat certain ____ (Do not know ____)

14. I would like to discuss some grocery products with you. Would you tell me which of the following products you (or your husband) have bought at least once.

	Yes	No	Do not know
a) Breakstone Sour Dressing	( )	( )	( )
b) Lite-Line Ice Milk,by Bordens	( )	( )	( )
c) Cool 'N Creamy Frozen Pudding Dessert	( )	( )	( )
d) Super "Y" Health Juice	( )	( )	( )
e) Freeze Dried Sanka	( )	( )	( )
f) H-O Instant Oatmeal with fruit	( )	( )	( )
g) Birds Eye Orange Plus	( )	( )	( )
h) Brr Soft Drink	( )	( )	( )
i) Borden Swiss Style Yogurt	( )	( )	( )
j) Ocean Spray CranApple Juice	( )	( )	( )
k) Louis Sherry Shimmer	( )	( )	( )
l) Kellogg Danish Go-Rounds	( )	( )	( )

15. Would you say you are quite certain, somewhat certain, or not certain that a new brand of salt substitute would be better for one's health than regular salt?
    quite certain..... ____ not certain ____
    somewhat certain.. ____ (Do not know ____)

16. Would you say there is no danger, some danger, or much danger in using a new salt substitute in place of regular salt?
    no danger.. ____ much danger ____
    some danger ____ (Do not know ____)

17. We have heard that some families in the Flushing Area have received in the mail a coupon advertising a new Morton Salt Substitute. Have you received a price off coupon for the Morton Salt Substitute?
    YES _____ NO____(Skip to Q. 19) (Do not know ____)

18. What did you do with the salt substitute coupon?
    I used it..... ____ I am saving it _____
    I threw it away ____ Other _____
    *I gave it away ____ (Do not know ____)
    *To whom _____

19. How did you first learn of the Morton Salt Substitute?
    Coupon & Letter..... ____ My husband told me about it ____
    Saw it in the store..... ____ Other _____
    I saw an advertisement... ____ Did not hear anything ____
    A discussion with a friend ___ (Do not know ____)

20. What was the first thing you remember hearing about the Morton Salt Substitute from someone living here at Kissena I?

    _____

    _____

    Did not hear anything ____(Skip to Q.26) (Do not know ____)

21. Will you please tell me who, at Kissena I, made this first comment about Morton Salt Substitute?

First Name	Family Name	Apt. or Floor
_____	_____	_____

    Will not say ____ (Stress the importance of answering all questions) (Do not know ____)

22. Did this person recommend trying or not trying the Morton Salt Substitute?
Try ____ Don't Try ____ Other _____
(Do not know ____)

ONLY ASK IF THE RESPONDENT BOUGHT THE MORTON SALT SUBSTITUTE.

23. Did this conversation occur before or after you bought the Morton Salt Substitute?
Before ____ After ____ (Do not know ____)

24. Which other persons, living here at Kissena I, have commented to you about the Morton Salt Substitute?
LIMIT TO THREE NAMES

First Name	Family Name	Apt. or Floor

None ____ (Skip to Q.26) Will not say ____ (Stress the importance of answering all questions)
(Do not know ____

25. Did most of these people recommend trying or not trying the Morton Salt Substitute?
Try ____ Don't Try ____ (Do not know ____)

ASK IF THE RESPONDENT BOUGHT THE MORTON SALT SUBSTITUTE. (IF NOT SKIP TO Q.28)

26. Thinking back over all of the ways you got your knowledge about the Morton Salt Substitute, which way was most important?
coupon & letter..... ____ seeing an advertisement ____
discussion with others..... ____ my doctor..... ____
my husband..... ____ Other _____
tasting it..... ____ (Do not know ____)

27. Which was more important in your decision to try the Morton Salt Substitute - Would you say:
the comments of others ____, or the coupon & letter ____
(Do not know ____)

28. Why did (didn't) you buy the Morton Salt Substitute?
WRITE DOWN VERBATIM

_____
_____
(Do not know ____)

29. Did you tell anyone, living here at Kissena I, about the Morton Salt Substitute?
Yes ____ NO ____ (Skip to Q. 33) (Do not know ____)

30. Which person did you first tell about the salt substitute?

First Name	Family Name	Apt. or Floor

Will not say ____ (Stress the importance of answering all questions) (Do not know ____)

31. Which other people, living here at Kissena I, did you tell about the Morton Salt Substitute?
LIMIT TO THREE NAMES

First Name	Family Name	Apt. or Floor
_____	_____	_____
_____	_____	_____
_____	_____	_____

None ____ (Do not know ____)

32. Did you suggest that they try or not try the Morton Salt Substitute?
Try ____ Not Try ____ Other _____
(Do not know ____)

33. a) Did you discuss the Morton Salt Substitute with anyone not living at Kissena I?
Yes ____ No ____ (Do not know ____)

IF YES ASK "b" and "c"
b) Was this person:
a friend..... ____ a sister or brother ____
your doctor..... ____ Other _____
a son or daughter.... ____ (Do not know ____)
c) Did any of these people suggest that you try or not try the Morton Salt Substitute?
Try ____ Not try ____ Other_____
(Do not know _____)

34. Have you seen any advertisements for the Morton Salt Substitute?
Yes ____ No ____ (Do not know ____)

IF YES ASK:
Do you recall where you saw the advertisement?
_____ _____ _____ (Do not know ___)

SAY: "JUST A FEW MORE QUESTIONS."

35. Do you prefer to (a) try a new brand of food product when it first comes out or, (b) to wait and learn how good it is before trying it?
(a) Try it ____ (b) Wait ____ (Do not know _____)

36. Who is a wiser consumer: (a) a person who tries a new food product which turns out to have a poor taste, or (b) a person who does not try a new food product and later learns it has a good taste?
(a) the person who tries ____ (b) the person who does not try ____
(Do not know ____)

37. Which clubs, social groups, religious groups and community groups do you (or your husband) belong to: WRITE DOWN

None _____ (Do not know ____)

THANK THE RESPONDENT

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