

THE DIFFERENTIAL DISTRIBUTION OF MARKET
NEWS FUNCTIONS:
AN INTERPRETATIVE STUDY OF
SELECTED STRUCTURAL DIMENSIONS

THESIS FOR THE DEGREE OF PH. D.
MICHIGAN STATE UNIVERSITY
ROBERT C. BEALER
1962



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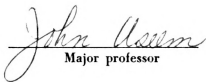
THE DIFFERENTIAL DISTRIBUTION OF MARKET NEWS
FUNCTIONS: AN INTERPRETIVE STUDY OF SELECTED
STRUCTURAL DIMENSIONS

presented by

ROBERT C. BEALER

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THE DIFFERENTIAL DISTRIBUTION OF MARKET NEWS FUNCTIONS:
AN INTERPRETATIVE STUDY OF SELECTED STRUCTURAL DIMENSIONS

by ¹⁹⁶²
Robert C. Bealer

A THESIS

Submitted to the College of Science and Arts
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Department of Sociology and Anthropology

1962

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Abstract

In this study a limited type of functional analysis was used to explain certain uses of market news by a representative sample of 356 lower peninsula Michigan farmers receiving such information. This analytical model was selected to compensate for certain deficiencies both in previous research and theory about market news, and in "effects" studies of mass communication. The organizing orientation was that of structural constraint; i.e., the function of an item is conditioned by the context of its appearance.

The item to which functions are imputed is the market news information received. The significant structural context was taken to be the individual's occupational role and was originally conceived as having five important dimensions: social-psychological involvement; commitment from non-preference economic factors; characteristic diffuse or specific type social relations with farm neighbors, and with major product dealer; and degree of rationality in the managerial practices used.

The possible uses for market news were categorized as latent or manifest on the basis of the intent of the United States Department of Agriculture Market News Service program. They included nine latent and seven manifest functions. The total number of each occurring, considered separately and then jointly, were the three dependent variables for the first phase analysis. A factorial analysis of variance model (after Keyfitz) assessed the ability of the structural dimensions in accounting for differentiating functions scores. Mode of market news receipt and type of information was controlled in this analysis.

The factorial analysis showed that rationality and both types of social relations significantly differentiated total and latent scores, but that none of these significantly differentiated manifest scores. High rationality levels and diffuse relations were associated with greater occurrence of these functions. Neither commitment nor involvement showed any consistent significant differentiating ability.

Structure was redefined on the basis of this evidence. Only those variables that were consistently significant differentiators were used in this phase of the analysis. Social relations were classed as diffuse, mixed, or specific on the basis of the neighbor and dealer Guttman-type scales. Rationality, measured by Guttman technique, was dichotomized. Cross classification of these two dimensions yielded six homogeneous types which were examined with respect to their relationship with each of the nine specific types of behavior construed as possible latent functions.

An "opportunity-motivation" proposition was evolved, which consistently differentiated the occurrences of the specific latent functions. Because this proposition could be derived as a working hypothesis from the notion of functional constraint, and because it could tie the disparate behavior together in a logical and meaningful fashion, it was taken as evidence for the validity of the study guide of functional constraint. It could not be taken as a formal test, however, since the analysis is post factum. Further research on functional constraint in communication research is urged.

Acknowledgements

Like every human product, this dissertation is a social endeavor with a history of indebtedness too long to be listed, too complex and subtle even to be known by the writer. However, for their special prominence I would like to thank:

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• The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

- Next, it is important to define the goals and objectives of the project. This helps to clarify what is to be achieved and provides a clear direction for the team.
- Once the goals are defined, the next step is to develop a plan. This involves identifying the resources needed, the tasks to be completed, and the timeline for the project.
- After the plan is developed, the team can begin to implement the project. This involves assigning tasks to team members and monitoring progress.
- Finally, it is important to evaluate the results of the project. This involves comparing the actual outcomes to the goals and objectives and identifying any areas for improvement.

• The process of project management is a continuous one, and it is important to remain flexible and adaptable throughout the project.

• The following are some key principles of project management:

- Communication is key. It is important to keep all team members informed of the project's progress and to encourage open communication.
- Time management is crucial. It is important to set realistic deadlines and to manage the project's schedule effectively.
- Risk management is essential. It is important to identify potential risks and to develop strategies to mitigate them.
- Flexibility is important. It is important to be able to adapt to changes and to respond to unexpected challenges.

• The project manager is responsible for ensuring that the project is completed on time, within budget, and to the satisfaction of the client.

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1. *Journal of the American Medical Association*, 1997; 278: 1039-1044.

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Chapter I

The Problem

The Background of the Study

In the United States prior to the Civil War agriculture was largely either of a subsistence type or oriented to local markets where both producer and buyer could be reasonably informed of relevant price setting conditions. After the War the urban-industrial upsurge resulted in a dramatic shift of population from the farms to the cities. Concomitantly, a large segment of the farms shifted from a subsistence to a commercial basis.¹ Generally this move forced sales to markets removed both in space and time from the producers. Early in this reorganization, dealers in farm products developed their own private information sources for supply and demand data necessary for rationally pricing those products they handled.² However inadequate these sources might have been, they tended to place the dealers in a relatively more advantaged position than the farm producer in regard to market and price information.³

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1. Murray Benedict, Farm Policies of the United States, 1790-1950, New York: Twentieth Century Fund, 1953, chapter five, particularly pp. 85-93. This characterization is less true of the cotton and tobacco economy of certain parts of the South. Also, it should be noted that the "supporting" factors for this move were not all "urban" in location. Technological advances in agricultural production increasing per operator output complemented the labor demands of the new manufacturing industries.
 2. Not infrequently the form of such "information" lay in the quasi-monopolistic organization of the buyer. See ibid., pp. 513-514.
 3. R. E. Betts, et. al., "The Market News Services," in The Agricultural Estimating and Reporting Services of the United States Department of Agriculture, Washington, D.C.: Bureau of Agricultural Economics and Production and Marketing Administration, United States Department of Agriculture, No. 703, December, 1949, p. 172.

Growing out of the particular, unique history of Homestead settlement and the ideological valuation of the "family farm" in agricultural policy, America's commercial farms were generally, and still are, at once sufficiently large enough to make sale for distant markets a mandate but not of such scale to allow development by each producer of his own private information sources. "This situation placed the producer at a disadvantage in bargaining with buyers better informed than himself regarding actual market conditions."⁴ Farmer agitation for public rectification of this information imbalance bore fruit at approximately the time of World War I.⁵

Ever since 1915 the United States Department of Agriculture (hereafter to be referred to as the USDA) has operated a program to provide farmers with information about daily market prices and conditions. A supplementary program to obtain long range market outlook information is also maintained. The program's intended purpose is "to aid in the effective distribution and fair pricing of farm products."⁶ The Department collects relevant information at the market place and transmits it to either the press wire services or its own leased wire. Eventually, the information becomes public through the mass media of radio, television, newspapers, magazines and commercial market letters. These mass media, through the decisions of those charged with editorial

4. Ibid.

5. For a more complete history of the Market News Service and the nature of its operation see Ibid., pp. 172-193.

6. Ibid., p. 172.

responsibility, may use or ignore the material as it is received or edit and supplement it with information collected by their own or other private sources. As a consequence, the majority of farmers look upon the mass media as originators of market news even though the primary source is the USDA.

In 1955 the USDA through provisions of the Research and Marketing Act of 1946 extended a contract⁷ to the Department of Sociology and Anthropology and the Social Research Service of Michigan State University to conduct investigations designed to ascertain where and how farmers obtain information regarding current and prospective market conditions, how they use it, and how adequate such information is for helping them make marketing and related production decisions. Accordingly, data were collected in the summer of 1957 from 375 farm operators drawn by area sampling methods to represent the farm population of lower peninsula Michigan. A survey schedule administered by interviewers elicited the information necessary for serving these ends.

This dissertation is a partial analysis of these data. The focus of the study is upon the "uses" made of market news by farmers. Combining somewhat unique methodology with substantive exploration, it will "interpret" the functions of a particular type of information within varying structural contexts. The problems which the dissertation addresses are substantive, theoretic, and methodological. Necessarily these are intimately intertwined. The present chapter will emphasize the first two through a somewhat historic perspective. The next chapter

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will consider the more specifically methodological problems.

Developing the Problem

Some Relevant Generalizations from Past Research

Initially the substantive interests stem from the two broad categories, "effects" studies in mass communications research and substantive analysis of market news in rural sociological research. However, rather than representing a full or simple linear development from each, the specific points of interest and the manner of attack must be understood as an attempt to meet certain analytic inadequacies in both areas. Since, in substance, the dissertation draws its greatest impetus from rural sociology, the pertinent investigations there will be considered first.

Although government-supplied market news information has existed a relatively long time, it has not received much attention from rural sociologists. Among the first studies, Green⁸ in 1926, O. V. Wells⁹ in 1930 for the USDA, and Youngstrom¹⁰ in 1932 evaluated the accuracy of long term outlook reports for both prices and supply. The substance of

8. R. M. Green, "Batting Averages in Agricultural Forecasting," Journal of Farm Economics, Vol. 8 (1926), pp. 174-193.

9. O. V. Wells, A Comparison of Outlook Statements With Subsequent Events, Washington, D.C.: Bureau of Agricultural Economics, United States Department of Agriculture, 1930, (mimeo).

10. C. O. Youngstrom, A Review of the Accuracy and Timeliness of Outlook Statements, Moscow, Idaho: Idaho Agricultural Experiment Station, Circular 62, 1932.

that research, however, is not relevant here. Market news as studied here refers only to short term and daily price and supply information.¹¹

A second type of study has been concerned with simply ascertaining the sources from which market news is obtained by farm people. For example, we know that 79 per cent of the farmers in an Ohio sample "obtained market information from the radio before deciding to sell their hogs"¹² whereas "radio served 94 per cent of the hog sellers"¹³ in an Iowa study. Similarly, in the former study, 65 per cent of the sample read daily newspapers for market information before selling hogs but only 45 per cent in the latter study engaged in this behavior. In these and all other such studies, a theory to account for these findings is not considered.

In addition to ascertaining market news sources, some studies have gone on to elicit farmers' evaluations of ways to "improve" market news reporting and/or have obtained criticisms of specific mass media cover-

11. It can be noted that evaluation studies in terms of economic accuracy of outlook information has continued through the years. See, Outlook Work: The First 20 Years, Washington, D.C.: United States Department of Agriculture, 1942; John D. Baker, Jr., and Don Paarlberg, "How Accurate is Outlook," Journal of Farm Economics, Vol. 34 (1952), pp. 509-519; An Appraisal of New York City Live Poultry Market Reports, 1949-50, Ithaca, New York: Cornell University Agricultural Experiment Station, Bulletin 884, 1952; John F. Heer, "Accuracy of Iowa Farm Outlook Information," Journal of Farm Economics, Vol. 36 (1954), pp. 143-147.
12. Francis B. McCormick, An Analysis of the Market News Service in Ohio, Wooster, Ohio: Ohio Agricultural Experiment Station, Research Bulletin 744, May, 1954, p. 23.
13. J. Parry Dodds and K. R. Marvin, How Do Iowa Farmers Obtain and Use Market News?, Ames, Iowa: Iowa State College Agricultural Experiment Station, Research Bulletin 417, November, 1954, p. 129.

age.¹⁴ The level of analysis has paralleled that of simple source enumeration. Throughout these inquiries it is assumed implicitly that market news information is used only for the purposes for which the USDA intends it. The investigations have ignored the possibility that any social arrangement can and often will take on a variety of unintended or unanticipated functions in given social structures. Such possible functions, beyond those intended by the USDA have gone completely uninvestigated.

With but a single exception, all the work has remained at the level of empirical generalizations,¹⁵ enumerated without any attempts at conscious and explicit causal explanations for the behavioral differences and/or similarities found.¹⁶ Furthermore, there have been no attempts

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14. See for further examples, Market News Services in the Midwest, Washington, D.C.; United States Department of Agriculture, 1949; Noah D. Holmes, Communications Media Through Which Iowa Farm Operators Obtain Agricultural Outlook Information, Ames, Iowa: Unpublished M.S. thesis, 1951; Listening Survey of Livestock and Other Market Reports, Chicago: Chicago Producers Commission, December, 1949, (mimeo).
 15. After Merton we take this to mean, "an isolated proposition summarizing observed uniformities of relationships between two or more variables." Robert K. Merton, Social Theory and Social Structure, Glencoe: The Free Press, 1957 (rev. ed.), p. 95. From Dewey we take that, "empirical means that the subject-matter of a given proposition which has existential inferences, represents merely a set of uniform conjunctions of traits ... without any understanding of why the conjunction occurs." John Dewey, Logic: The Theory of Inquiry, New York: Henry Holt and Company, 1938, p. 305.
 16. See, Dodds and Marvin, op. cit.; McCormick, op. cit.; Dodds and Marvin, What Does the Iowa Farmer Want From Radio Market News?, Ames, Iowa: Iowa State College Agricultural Experiment Station, Research Bulletin 413, August, 1954; Dodds and Marvin, What Does the Iowa Farmer Want From Newspaper Market News?, Ames, Iowa: Iowa State College, Special Report, 1954 (mimeo); Ways to Improve Market News and Information, report of the Market News and Information Conference, Kansas City, Missouri, May, 1955, compiled by Gene Futrell, published by Iowa State College, Ames, Iowa, 1955.

to develop a coherent theory to codify the disparate empirical generalizations. If any thing, there is a disclamation to phrase research in extant theoretic terms. Such research, therefore, tends to be unorganized in theory and non-cumulative in substance; a distinctly inefficient situation.¹⁷

Only one study to data has faced some of the deficiencies thus far indicated. Smith¹⁸ sought not only the sources from which farmers obtained market news and the criticisms of these sources which were made but also asked, "How may these variations in use be explained?"¹⁹ One possible explanatory factor was explored. This was "occupational commitment" or the degree to which a person is tied to farming as a source of livelihood. It was defined operationally by dichotomizing Guttman scale types for two unidimensional behavioral universes. One was the use of supplementary production resources. The relative use or non-use of accounting bookkeeping methods on the farm, of extension specialists, and of Experiment Station publications were the specific behaviors utilized. The second "universe was the nature of the interpersonal relationships maintained with the dealer to whom the farmer

17. This argument follows the exposition of Merton, op. cit., pp. 95-101.

18. Joel Smith, "Michigan Farmers' Use of Radio and Newspaper Market News," Quarterly Bulletin, Michigan Agricultural Experiment Station, Vol. 38, (May, 1956), pp. 612-627; Joel Smith, Organization of the Farm and Mass Communication, Evanston, Illinois: Northwestern University, unpublished PhD. dissertation, May 1954.

19. Smith, "Michigan Farmers," op. cit., p. 612.

sold his main product. That relationship was dichotomized as "intimate and non-specialized" or "distant and specialized."²⁰ Three levels of "commitment" resulted when the two scales were cross-classified.²¹ These classes were shown to be highly related to obtaining market news from mass media sources.

In every case, the use of mass media as sources of market news is positively and significantly related to the degree of occupational commitment. The greater the commitment, the greater the extent of use.²²

In turning to research in mass communications and its effects, a parallel to market news studies may be observed. Generally, analysis is restricted only to the level of "empirical generalization;" although the meaning of this term needs to be extended to include, after Parsons,²³ repeated observation. The major organizing principle in mass communication research has been the now classic question "who says what to whom in what context with what effect?"²⁴ Following Lazarsfeld, communication research can be categorized then into five general areas:

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20. Smith, Organization, op. cit., p. 65.
 21. The two types of cases of high use of supplementary information but "specific" dealer relations or low use of supplementary information and "diffuse" dealer relations were combined as a "mixed" commitment category.
 22. Smith, "Michigan Farmers", op. cit., pp. 624-625.
 23. Talcott Parsons, The Social System, Glencoe: The Free Press, 1951, p. 487.
 24. It is interesting to note that while this question is widely quoted, specific credit for its origination has eluded the present writer.

control, content, audience, functional analyses, and effects.²⁵ We shall not attempt to review systematically the vast literature in each of these areas. Only the last is of direct substantive interest and only selected comments there are relevant to the study in hand.

Most research in mass communications tends to follow out or emphasize a single category of the Lazarsfeld schema. There is one notable exception. The notion of effects has been placed in an inextricable relationship with message transfer.

The chief reason we study this process (of message transfer or communication) is to learn something about how it achieves effects. We want to know what a given kind of communication does to people.²⁶

In no small part, this goal is fostered by the "applied", commercial nature of much research in mass communications' effects. The research goals are limited very often simply to evaluating the relative effectiveness of different situational conditions in obtaining desired goals of the communicators. In fact, the measure used to assess the "success" of a particular communication attempt is frequently the degree to which an implied or directly stated directive of a message is realized in communicatee behavior. For instance, as one of innumerable examples, the degree of communication of a "documentary" anti-Fascist broadcast has been measured by the degree to which attitude questions showed that listeners had increased their negative evaluations of

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25. P. F. Lazarsfeld, "Communication Research and the Social Psychologist," in W. Dennis (ed.), Current Trends in Social Psychology, Pittsburgh: University of Pittsburgh Press, 1948, pp. 218-273.
26. Wilbur Schramm, "How Communication Works," in Wilbur Schramm (ed.), The Process and Effects of Mass Communication, Urbana: University of Illinois Press, 1954, p. 12.

Fascism after hearing the program.²⁷ This evaluation procedure seems reasonable because "communication" is implicitly or explicitly defined in terms of action taken upon receipt of symbols not merely as the degree to which literal understanding of symbols has occurred.

Given this orientation, an interest in the "effects" of communication generally results in an examination of the degree to which the goals intended by a particular message are achieved in a given population.²⁸ Empirical studies of "effects" attempt to explain why a message was or was not effective in obtaining the given goal the message initiator had in mind. Under these circumstances, empirical studies of "effect" in the mass communication literature can be characterized perhaps more accurately as studies of effectiveness.²⁹

A second line of work concerning "effects" has been aptly summarized and commented on by Smith as follows:

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27. E. C. Wilson, "The Effectiveness of Documentary Broadcasts," Public Opinion Quarterly, Vol. 12 (1948), pp. 19-29. See also the summary article by H. F. Lionberger, "The Diffusion of Farm and Home Information as an Area of Sociological Research," Rural Sociology, Vol. 17 (1952), pp. 132-140. Lionberger considers a number of studies attempting to evaluate communication effectiveness and concludes, "As in previous studies, changes in farm practices attributed to bulletins, and acknowledgement of information from them, were taken as the measure of usefulness (i.e., extent of communication)." p. 134.
 28. Cf. the summary articles of Carl I. Hovland, "Effects of the Mass Media of Communication," in Gardner Lindzey (ed.), Handbook of Social Psychology, Cambridge: Addison-Wesley, 1954, pp. 1062-1103; Joseph T. Klapper, "The Comparative Effects of the Various Media," in W. Schramm (ed.), The Process and Effects of Mass Communication, 2d. ed., pp. 91-105.
 29. Katz and Lazarsfeld in reviewing communications studies write, "We are suggesting that the over-riding interest in mass media research is in the study of effectiveness of mass media attempts to influence -- usually, to change -- attitudes and opinions in the very short run." See Elihu Katz and P. F. Lazarsfeld, Personal Influence, Glencoe: The Free Press, 1955, pp. 18-19.

For some reason, there are few empirical studies available on which to build reliable propositions about the functions of mass communication. This does not mean that sociologists have not concerned themselves with the social functions of communications in general, or mass communications specifically. Small, Cooley, Park, Burgess, Simmel and other earlier sociologists concerned themselves with the matter. However, their writings on the subject are largely impressionistic, and serve, at best, as unverified hypothesis.³⁰

It can be added that the commentary on the effects of mass communication is simply enormous and in comparison to the inductive research on "effects" has been extremely far reaching into the latent aspects.³¹ However, these speculations have not led to many attempts at empirical verification.³² While highly stimulating, few have attempted to bridge the gap between these broad generalizations and empirical verification. For mass communication in general we may summarize that when "effects" are studied empirically, interest remains with manifest function, and when latent functions are focal, empirical inquiry is neglected.

The Relevance of Research Generalizations for the Present Study

In the present study, communication is conceived as being independent of its effects. "Communication" and the "effects" of communication are viewed as separate matters of inquiry. By communication is meant "the transfer of a set of meanings embodied in a message form in a

30. Smith, Organization, op. cit., p. 2.

31. See Bernhard Rosenberg and D. M. White (eds.), Mass Culture: The Popular Arts in America, Glencoe: The Free Press and Falcon's Wing Press (joint publication rights) 1957.

32. Lazarsfeld, op. cit., p. 219.

manner that permits it to be received in a preferred way by a specific person or persons."³³ In other words, communication is a process of interaction involving the exchange of significant symbols. A significant symbol is defined, in the sense of George Herbert Mead, as any symbol for which both actor and alter share the same mental image. "Effect" refers to any change in the behavior and/or mental condition (including "no change") of message recipients, as well as to any other condition viewed as possibly being dependent on a given communication situation.

This separation of communication and effects has both theoretical and practical support. Perhaps the former³⁴ can be understood better by considering the following table which summarizes the possible relationships between given communication situations and any possible previously defined consequence.

		Existence of Specific Communication Situation	
		Yes	No
Occurrence of Specific Effect	Yes	Cell 1	Cell 2
	No	Cell 3	Cell 4

33. Joel Smith, Robert C. Bealer, and Francis M. Sim, "Communication and the 'Consequences' of Communication," paper read at the American Sociological Society Meetings, Washington, D. C., August 27-29, 1957, p. 3. Contained as Appendix C.

34. Adopted from Ibid., pp. 7-8.

If given communication situations relate to their potential effects so as to occur empirically only in cells 1 and 4 then effects can be accounted for by a communication theory and no differentiation is necessary. In predicting effects, only those things need be known which are specified in the theory as necessary in accounting for communication. The occurrence of empirical cases in cells 2 and 3, however, suggests the independence of these two phenomena. Knowledge of the communication situation, by itself, will be inadequate for predicting effects.³⁵ Information indicated by a theory of communication as necessary in accounting for a communicative situation would be insufficient for predicting the occurrence of the consequence (effect). Undetermined additional information concerning factors and/or relationships superfluous for the communication theory would be necessary. To simply try and apply a communication theory to predict effects probably would require both the inclusion of certain variables necessary for explaining communication but not effects and the omission of some variables necessary for effects but not necessary to explain communication. The principle of parsimony in theory building would be doubly violated.³⁶

35. M. L. DeFleur, "A Mass Communication Model of Stimulus Response Relationships: An Experiment in Leaflet Message Diffusion," Sociometry, Vol. 19 (March, 1956) pp. 12-25; and Katz and Lazarsfeld, op. cit., offer examples of this observation from among recent researches.

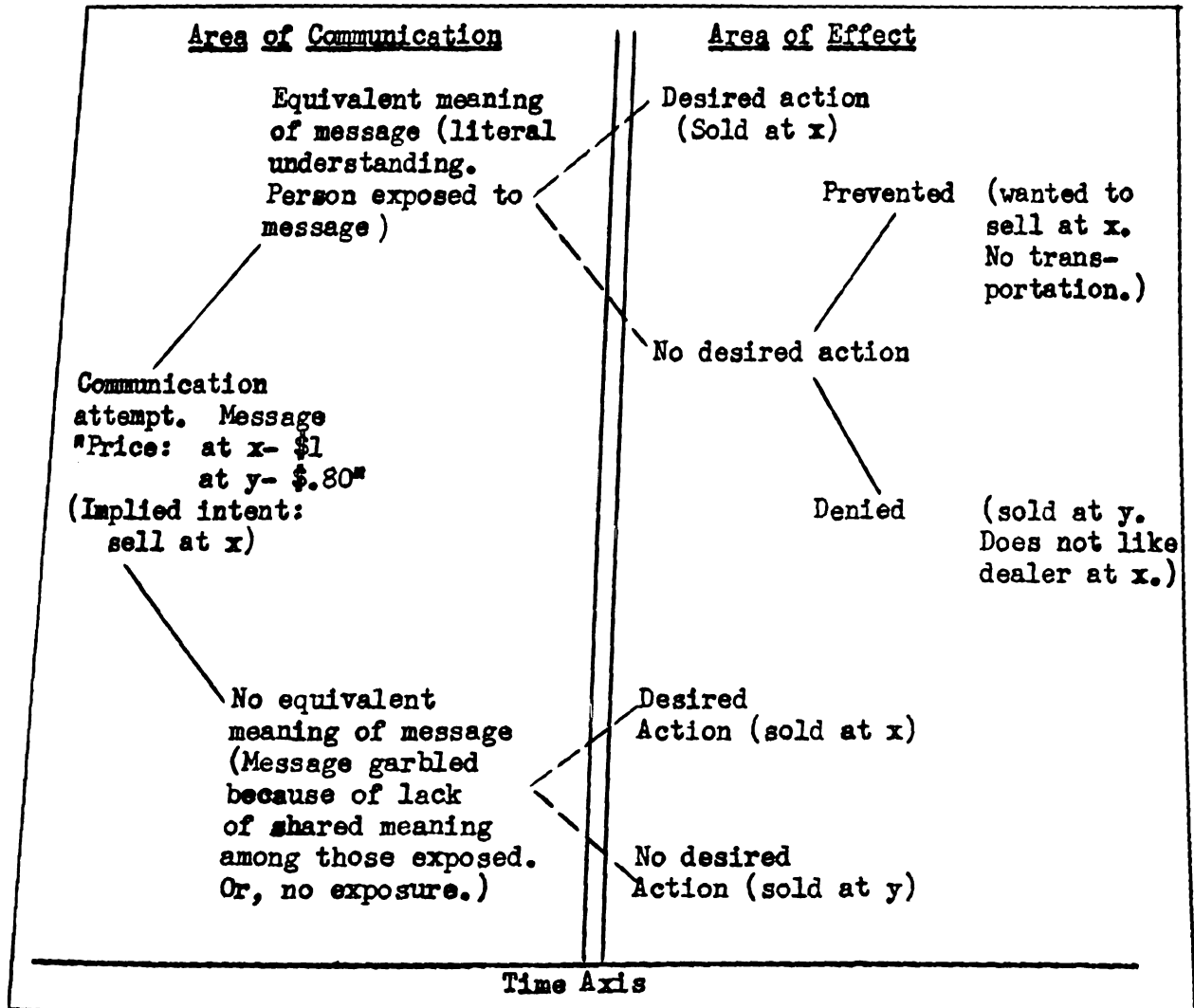
36. M. R. Cohen and Ernest Nagel, An Introduction to Logic and Scientific Method, New York: Harcourt, Brace, 1934, p. 395.

The "practical" reason for maintaining this separation is tied in with the theoretical and is depicted in Chart 1. A simple, hypothetical market news information example is used to bring out the salient features. The depicted situation is one in which there is a fairly wide price differential between two markets. Although intent of the message is not as unambiguous as an advertisement for cars, cigarettes, or soap, it does fairly clearly imply that the intent is "sell at X", all other considerations being equal. Of course, in any real situation the "other factors" are hardly ever equal. Still, within a given "almost equal" strata, some will be found among those exposed to the message who would explicitly deny the intent of the message,³⁷ and some will be prevented from complying by such extenuating circumstances as are illustrated in the chart.

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37. The United States Department of Agriculture maintains only that it wishes to aid in "efficient" pricing. A priori there is no reason then to believe that the "denied" category should be construed as an impairment of "efficient pricing." In point of fact, however, most employees of the Market News Service have their training in economics and tend to accept "efficient" as orthodox economic efficiency. This position implies man's supreme valuation is upon pecuniary reward and accepts the model of man as homo rationales, if not in fact, then in "to be striven for" goal. This latter assumption validates the educational aspects of the economist's role. If the farmer is not rational (i.e., desirous of obtaining maximum price) he is acting either in ignorance or in error. In either case he is in need of education.

See below Chapter III on methodology for evidence supporting this view. For a clear delineation of efficiency types relevant to economics see L. W. Witt, "Economic Efficiency and Social Welfare," (mimeo, undated) Michigan State University and for the broadest philosophical exploration and mandate of the implied positivistic position demonstrated in this view see Talcott Parsons, The Structure of Social Action, Glencoe: The Free Press, (second ed.,) 1949, pp. 51-82.

Chart 1 - A Hypothetical Market News Situation



In either case, using "effect" as the measure of communication can lead evaluation programs astray. Lack of desired actions can result either from the immediate communication situation or not. To attribute all failure of desired action to communication mechanisms -- choice of symbols, syntax, delivery order, nature of appeal, etc. -- implies that the denial of a message is impossible, and that "successful" communication and intended consequences can not vary independently of each another.

The "practical" aspects of the communication - effects disjunction has further significance. There are a number of problems currently involved with communication as defined here without adding the complications to analysis presented by the "denied" and "prevented" categories. For instance, analysis of market news reports by the Flesch Readability Scale show that they tend to be of above average difficulty.³⁸ Nearly one-third of the farmers in an Iowa study³⁹ reported they did not understand radio reports sufficiently to feel that they could translate personally such information meaningfully to their own situation, i.e., could not judge what grade their animals were.⁴⁰ Whether they would have used the information in the intended way, to set grades and thereby allow reasonable price expectations or evaluations of dealer honesty in the process of efficient pricing, if they could have made this translation is a question apart. It is best answered separately.

It should be understood that this argument does not mean that communication and effects are unrelated. They most certainly are, but

38. Unpublished United States Department of Agriculture materials.

39. Dodd and Marvin, How Do Iowa, op. cit.

40. Actually whether this is a problem of communication (as here defined) or of effects is somewhat indeterminate. If the farmer who says he cannot translate the information, say by grade, can understand that choice grade hogs are bringing a certain price, communication in our sense has occurred. This assumes that the program message was to convey simply the information that hogs of a certain grade at a given location were selling at a given price range. Being able to reproduce the qualities of a given grade hog could be a communication problem if the program's intent was to convey specifications on what constitutes a given class of hogs.

a careful analysis would look on the relationship as problematic rather than necessary.

Certain implications of the evaluation that many investigations of "effects" can be understood more readily as studies of effectiveness have direct import for the study. In large measure, the study of "effectiveness" commits the investigator to accepting as his evaluative criterion only the intended or manifest consequences desired by the communicator. Merton's observations on this point are particularly cogent.

What is his [the sociologists] task if he confines himself to the study of manifest function? He is then concerned very largely with determining whether a practice instituted for a particular purpose does, in fact, achieve this purpose ... He will ask whether a propaganda campaign has indeed gained its objective of increasing "willingness to fight" ... so long as sociologists confine themselves to the study of manifest functions, their inquiry is set for them by practical men of affairs, rather than by the theoretical problems which are at the core of the discipline ... with the concept of latent function, the sociologist extends his inquiry in those very directions which promise most for the theoretical development of the discipline.⁴¹

In this light it is to be expected that sociological investigations should be concerned with more than the determination of the effectiveness of market news programs in reaching farmers, or of ascertaining ways in which to implement the intended effects of rational economic decision making relevant to the farm enterprise. A sociological analysis of market news should be concerned with both the manifest and the latent effects of communication acts, systems, or structures.

41. Merton, op. cit., pp. 65-66.

If "effects" and "effectiveness" were coterminous in fact, much of mass communication effects research would still be inadequate. Fearing indicates the crux of the difficulty when he notes, "many widely held notions about the communicator-content-effects relationships, especially in the mass media, grossly oversimplify the problem."⁴² Much research in this area is posed in essentially unanswerable forms. In part, Fearing recognizes this when he asks rhetorically:

How are the effects of mass media influenced by the character and content of the communication? In answering this question one must consider both the types of appeals employed and the arrangement of the elements sequentially.⁴³

A stronger recommendation than this, however, needs to be made. A sharp delineation of the "conditions under which" the "character and content" are to be observed would help to resolve much of the ambiguous evidence on mass communication "effects." For instance, there is uncertainty on the relative merit of "type" of appeals to win support for a measure.⁴⁴ Hovland indicates that while two studies show "superiority of emotional propaganda over logical argumentation"⁴⁵ the remaining available have "failed to find clear-cut superiority of one type of appeal over the

42. Franklin Fearing, "Social Impact of the Mass Media of Communication," in N. B. Henry (ed.), Mass Media and Education. The 53rd Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1954, p. 171.

43. C. I. Hovland, op. cit., p. 1075.

44. Ibid.

45. Ibid.

other."⁴⁶ He cogently comments, "The lack of consistency in outcome suggests the need of further research on the conditions which affect the relative advantage of the two types of appeals."⁴⁷

In the present context, this comment should have the effect of directing inquiry into the effects or consequences of market news information into tightly delimited bounds rather than in the broad terms often found in effects research. Hovland's general directive to explicate the "if-then" context of all "effects" studies can and should be extended. In its germ is an outline of a general method for studying communication effects which contains correctives for the shortcomings of the investigations thus far examined. The reference is to functional analysis. After briefly examining its major tenets, it will be possible to delimit specifically the problem for this dissertation.

Functional Analysis: A Framework for Studying Market News Effects.

Perhaps the most programatic statement on the functionalist framework for sociology is in Merton's work.⁴⁸ He indicates that "the central orientation of functionalism - [is] expressed in the practice of interpreting data by establishing their consequences for larger structures in which they are implicated."⁴⁹ Specifically then, "the theoretical framework of functional analysis must expressly require that there be specification of the units for which a given social or cultural item is functional."⁵⁰

46. Ibid., p. 1076.

47. Ibid. (*Italics mine*)

48. Merton, op. cit., pp. 19-84.

49. Ibid., pp. 46-47.

50. Ibid., p. 30.

In contrast to the more delimited notion of functionalism in anthropology, Merton argues that the unit to which functional importance is to be attributed need not be society in its totality. It is necessary "to consider a range of units for which the [any] item has designated consequences ... Terminologically, this implies the concepts of psychological function, group function, societal function, cultural function, etc."⁵¹

In delimiting item(s) to which functions are imputed, Merton indicates that "the basic requirement is that the object of analysis represent a standardized (i.e., patterned and repetitive) item."⁵² And then, in assessing the functions of the unit, we are required "to introduce a conceptual distinction between the cases in which subjective aim-in-view (of actors) coincides with the objective consequence, and the cases in which they diverge."⁵³ In other words, a distinction needs to be drawn between manifest and latent functions. The former "are those objective consequences contributing to the adjustment or adaption of the system which are intended and recognized by participants in the system."⁵⁴ Conversely, latent functions are "those which are neither intended nor recognized."⁵⁵

51. Ibid., p. 52.

52. Ibid., p. 50.

53. Ibid., p. 51.

54. Ibid.

55. Ibid.

This abbreviated general outline⁵⁶ will be the framework used for analyzing the effects (functions) of market news systems of information in this dissertation. Functional analysis as described here has no necessary substantive bounds. "The central orientation ... (of) interpreting data by establishing their consequences for larger structures in which they are implicated - has been found in virtually all the sciences of man."⁵⁷ Functionalism as this study uses it represents a general analytical procedure.⁵⁸

The Special Significance of "Functional Alternatives": The "Hypothesis" of the Study

One of the basic tenets of functional analysis is that "the range of variation in the items which can fulfill designated functions in a social structure is not unlimited."⁵⁹ There is structural constraint. In turn, this implies the notion of a system of various "parts" in some determinate complex of interconnections. To use a simple mechanical

56. A number of other details of functional analyses are taken up by Merton but are not germane at this point.

57. Marton, op. cit., pp. 46-47.

58. This is not to represent the field historically. Barber has correctly observed that functionalism (which he calls structural analysis) "is in part a body of substantive sociological concepts and theories in part a method . . . of analyzing the relations among structural parts." B. Barber, "Structural-Functional Analysis: Some Problems and Misunderstandings," American Sociological Review, Vol. 21 (April, 1956) p. 130.

59. Merton, op. cit., p. 52.

analogy as an example, gasoline injected into a diesel engine would stop the operation. The same fuel injected into a gasoline engine would start or continue operation. The difference in function could be "explained" in terms of structural context, i.e., the articulation of the given set of relationships (the engine) with the "new" element. Similarly, within a growing season it is manifestly impossible for a sugar beet farmer who has contracted his crop at the beginning of the year to have market news function in the making of a decision as to when or where to sell at harvest. However this may be the crucial role of market news for a wheat farmer. It seems reasonable that, other things equal, variability in structure should result in different patterns of effect when the same or similar message is received. This argument rests on an extension of the postulate of functional alternatives to its more general form. The particular function of a given item is the result of the structural context in which it is entered. This postulate in its general form provides the major orientation of this analysis.

At the outset it should be emphasized that the general "hypothesis" of the study is not a hypothesis in the strict sense, but rather a "sensitizing" orientation in the manner which Blumer distinguishes definitive and sensitizing concepts.

Whereas definitive concepts provide prescription of what to see, sensitizing concepts merely suggest directions along which to look . . . they rest on a general sense of what is relevant.⁶⁰

Were the former meaning applicable, the study could have proceeded with explicit and precise pre-factum operational or working hypotheses

60. Herbert Blumer, "What is Wrong With Social Theory," American Sociological Review, Vol. 19, (February, 1954) p. 7.

translating the general directive to specific substantive references. This was not the case both because of the paucity of previous research in market news (particularly with reference to latent functions) and the lack of adequate theory explicating communication as such.⁶¹

Primarily this study is meant to be exploratory and demonstrative. First, it intends to ascertain the efficiency of certain selected structural dimensions for differentiating market news functions. Second, given positive results in this endeavor, the study will examine in a functional framework certain of the specific functions with respect to delimited structural contexts. In both, the study can only demonstrate⁶² what is possible methodologically and analytically. A definitive substantive setting out of the relationships between structure (as will be defined below) and market news functions is impossible. The small sample size as well as the necessary lack of depth inherent in survey research (the research model used for the more general study) preclude this latter goal.

This limited goal is not without significance. Merton has cogently assessed, "all interpretative schemes . . . depend upon a triple alliance

61. Smith, Sim, Bealer, op. cit.

62. "Demonstration" will take on broader meaning in the next chapter when the model for data analysis is examined. There an attempt will be made to reconcile the "tests of significance" school and the recently revocalized "cross-tabulation, causal analysis" school. See, Hanan G. Selvin, "A Critique of Tests of Significance in Survey Research," American Sociological Review, Vol. 22 (October, 1957) pp. 519-527.

between theory, method and data. Of the three allies, method is by all odds the weakest."⁶³ This is particularly true of rural sociology both in the specific area of market news and in general.⁶⁴ The present study is oriented specifically toward workers in this field. Of course, the study is equally relevant for mass communication effects analysis.

One further word about the hypothesis of the study is necessary. The argument that a "difference" in social structure prior to the introduction of an item will result in a functional difference does not mean that an item will function in the same manner in one and only one type structure or that function is treated as a dichotomous all-or-nothing phenomena. Rather, one of the intended by-results of the dissertation is to gain some insight into the range of structures for which a single item can serve the same function. The line of attack proposed will look at a number of different structures simultaneously at the same point in time. The functionalist generally is concerned with the other aspect of the time-space axis, a unit or structure through time or in articulation with different type of structures in the institutional sense.

63. Merton, op. cit., p. 19.

64. See W. H. Sewell, "Some Observations on Theory Testing," Rural Sociology, Vol. 21 (March, 1956) pp. 1-12. The appraisal article by Taves and Gross, "A Critique of Rural Sociological Research, 1950" Rural Sociology, Vol. 17 (June, 1952) pp. 109-118 gives incisive evidence on the point.

Chapter II

The Schema for Analysis: General Properties

Dimensions of Structure

General Definition

In functional analysis data must be interpreted by establishing their consequences for the structure in which they are implicated. Levy has defined structure as "a pattern, i.e., an observable uniformity, of action and operation"⁶⁵ and, notes that, "the general form of this concept is deliberately left in to cover a wide range of possibilities from highly stable uniformities to highly fleeting ones."⁶⁶ He further indicates those aspects of the definition which have significant methodological implications:

Structure ... refers to an aspect of empirical phenomena divorced from time. The patterns of action, qua patterns, do not exist as concrete objects in the same sense that sticks and stones do. The patterns of action in this sense are abstractions from concrete empirical phenomena, and they "exist" and are "empirically verifiable" in the same sense that the squareness of a box "exists" and is "empirically verifiable."⁶⁷

Thus, "Any event may contain an element indicative of a structure insofar as it is considered with regard to its nonunique aspects or characteristics."⁶⁸

65. Marion J. Levy, Jr., The Structure of Society, Princeton: Princeton University Press, 1952, p. 57.

66. Ibid., p. 58. Parsons puts it this way, "Structure does not refer to any ontological stability in phenomena but only to a relative stability - to sufficiently stable uniformities in the results of underlying processes so that their constancy within certain limits is a workable pragmatic assumption." Talcott Parsons, "The Present Position and Prospects of Systematic Theory in Sociology," in Essays on Sociological Theory (revised edition), Glencoe: The Free Press, 1954, p.217.

67. Levy, op. cit., p. 57.

68. Ibid. (Italics added.)

Functional analysts have usually defined structure in terms of institutions or similar specific concepts reflecting order, for functional analysis has generally used society as the point of reference.⁶⁹ However, there is nothing in the logic of functional analysis to prevent the consideration of structures of lesser scope. This has, in fact, been done. Merton, in discussing middle range theory, uses as favorable examples of functional analysis studies taking as their points of reference empirical phenomena of less global content than "society."⁷⁰

Recognizing that they are addressing society as the unit of analysis, Bennett and Tumin's comments on structure are important as guides in the current study.

The sociological name for position in society is "status". This is to be distinguished from the common-sense use of the word where status is held to mean "prestige." ... In all human societies we find statuses based on differences in sex, skill, economic productivity, power, dependency, education, age, strength, attractiveness, marital status, parenthood, and native birth among others....If we can think of these various possibilities as building blocks, then we may note that the social structure of any society consists of a selected number of these building blocks arranged in such a way that together they form a total body of relationships to which... are attached different rules [modes] of behavior...⁷¹

69. See, ibid.; T. Parsons, The Social System, Glencoe: The Free Press, 1951; D. F. Aberle, et. al., "The Functional Prerequisites of a Society," Ethics, vol. 60 (January, 1950) pp. 100-111. Note also the comments of Merton op. cit., pp. 25-30, 52.

70. Merton, op. cit., inter alia, pp. 55-82.

71.. M. Tumin and John Bennett, Social Life: Structure and Function, New York: Knopf, 1949, pp. 87-88.

It is further emphasized that:

The status is not the same as the individual who occupies it...Status is not something tangible or perceivable by the senses; it is a way of thinking about and describing social phenomena which helps us make sense out of social life. It thus becomes possible to distinguish between the position and its occupant.⁷²

In the present case, the dissertation is concerned with the "status" factors (called "structural dimensions") in which a given individual is implicated and which constitute his "structure" at a point in time.⁷³ This interest is in the pattern and/or "status", (i.e., the "position" in Bennett and Tumin's terms) however, not the individual. The study will focus on certain of those "status" factors simultaneously and examine them for their relationship to market news, holding, of course, that the nature of the relationship (function) will be conditioned by the structural arrangement of which it is a part.

Considerations from the Research Design

Just what empirical events the notion of structure should refer to even in the limited sense in which "functional" analysis is used here is problematic. However, a number of guides are present. In the first place, market news information is highly specialized. It is intended

72. Ibid. pp. 89-90.

73. Alternative terminology which may be somewhat less troublesome is available in A. H. Barton, "The Concept of Property-Space in Social Research," in Lazarsfeld and Rosenberg, (eds.) The Language of Social Research, Glencoe: The Free Press, 1955, pp. 40-53. While in essential agreement with this, that exposition fails to convey the sense of variable interrelationships so lacking in market news studies and so greatly implicated by functional analysis.

to serve an occupationally specific audience, that is, farmers and business personnel involved in processing and marketing agricultural commodities. Restriction of "structure" to the individual farmer was an immediate possibility. Furthermore, the contract directed that such a group be studied. Accordingly, the range of functions that could be considered was limited by this restriction in the "structural" dimension.⁷⁴

Within these limits further considerations prevailed. The aspects of structure had to be universally applicable in the sense that all study participants could be categorized in their terms from indices obtainable under survey conditions of data collection. Such universal categories would promote continuity in research if, with appropriate changes in operationalization, they defined variables important for describing and mediating behavior in occupational enclaves beyond agriculture.⁷⁵ This was attempted, as will be taken up later.

Of somewhat intermediate concern were over all research purposes. The pertinence of separating "communication" and "effects" was discussed previously. Here it can be noted that the dissertation is meant to

74. For a fuller examination of these exact research limits stemming from the joint, "applied", contract financed aspects see Joel Smith, F. M. Sim and R. C. Bealer, "Research Design in Structural-Functional Analysis: A Case Study from Applied Research on a Communication System," paper read at the Ohio Valley Sociological Society Meetings, Columbus, Ohio, April 26-27, 1957 and contained in Appendix C.

75. The effects of trade journals on the structure and functioning of industrial concerns is one such area. Given both the magnitude of these information sources and the importance of knowledge in competitive organization such research would seem substantively significant.

stand in a complimentary relationship to a separate analysis of communication behavior, i.e., exposure to and understanding of market news information. Hence, the dimensions of structure also were selected for their possible cogency in differentiating exposure to media for market news. By utilizing the same sets of independent variables in each analysis, insight can be gained as to the extent to which the variables of a communication model can account for the consequences of communication.⁷⁶ Examination of the independence of these two types of questions is not, however, a part of this dissertation.

Finally, by way of theory, a functional approach to the question of "effects" implies commitment to the tenet that behavior is systemic in its determinants. It is manifestly impossible with present knowledge to control for or examine all possible facets of a system. As Parsons indicates, it is this imperfect knowledge which forces us to what he calls structural-functional analysis.⁷⁷ In line with Merton's usage we call it simply functional analysis.

76. For fuller explication of this problem see Smith, Sim and Bealer, "Communication", op. cit.

77. Parsons, "The Positions and Prospects", with recognition that his referent is orthodox functionalism, op. cit. pp. 215-218. He puts it this way: "The ideal of scientific theory must be to extend the dynamic scope of complex systems as a whole as far as possible... [and] the essential feature of dynamic analysis in the fullest sense is the treatment of a body of interdependent phenomena simultaneously, in the mathematical sense .. The ideal solution ... state [p.] all the elements of reciprocal interdependence between all the variables of the system. The ideal has ... been attained only in ... analytical mechanics. All other sciences are limited to a more primitive level of systematic theoretical analysis. ... [For sociology it is] the functional reference of all particular conditions and process to the state of the system as a going concern which provides the logical equivalent of simultaneous equations in a fully developed system of analytical theory." See also Parsons, The Social System, pp. 483-484.

Given these limitations and considerations it was necessary to delineate and define operationally as structure those aspects of systems which were both relatively independent and significant differentiators of behavior.⁷⁸ While relative independence is necessary if knowledge and prediction of behavior is to be maximized, the "independent" variables could not be completely unrelated or the assumption of a system that is basic in functional analysis would be violated.⁷⁹

In this light, two broad research options were immediately apparent. One involved the omnibus task of searching out empirically all the variables that might best explain the variance in behavior resulting from the receipt of market news. In this case one would use data on as many factors as possible to obtain the most efficient predicting equation. This approach is endless in its scope because it lacks a theoretical orientation. It would be no improvement over the research previously reviewed.⁸⁰

The second alternative, while not ignoring substance, would focus less explicitly and primarily on the particulars of the sample in selecting variables to explain any differential distribution of market news

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78. This is the same kind of thinking which basically underlies Parsons' use of primacy in defining and interrelating the modes of orientation and the pattern variables. See T. Parsons, The Social System, op. cit., pp. 58 ff.
79. Merton, op. cit.
80. Merton, op. cit., pp. 96-101. See Joel Smith and Francis M. Sim, Michigan's Lower Peninsula Farmers' Consumption and Use of Market News, East Lansing, Michigan, (mimeo), the research report to the United States Department of Agriculture for a fuller probing of variables differentiating functions of market news.

effects. The central analysis would shift from merely explaining the particular sample variance to using the sample as a means for also examining certain theoretic and methodological propositions. As indicated in the previous chapter, the dissertation follows this second approach.

The specific substantive variables selected were obtained from the research legacy of mass communication studies. Katz and Lazarsfeld have succinctly observed that:

...The intellectual history of mass media research may, perhaps, be seen best in terms of the successive introduction of research concerns - such as audience, content and the like - which are basically attempts to impute effects by means of an analysis of some more readily accessible intermediate factor with which effects are associated.⁸¹

These authors cite four such general sets: 1) exposure, access, or attention - variables of audience analysis; 2) medium, here it is assumed that effectiveness is modified by the channel which delivers the message; 3) content - in the sense of form, presentation, language, order, etc.; 4) predispositions - attitude structure of the communicatees involved. Each has been found important in mediating the effectiveness of communication.⁸² While these have been derived largely from studies concerned only with manifest consequences, they are relevant to the present study because it is concerned with manifest as well as latent functions. Furthermore, there are no comparable guides for the study of latent effects. An effort was made to operationalize structure by taking into consideration each of these four general categories.

81. Katz and Lazarsfeld, op. cit., p. 20.

82. Ibid., pp. 21-25; Hovland op. cit., pp. 1071-1099.

The Independent Variables

At the study's outset it was assumed that few if any persons who qualified as "farmers" by the study definition, and who were thereby eligible to be included in the sample⁸³ would not receive some market news. It turned out that there were only 9 of 375 interviewees for whom no evidence of the receipt of market news could be uncovered. It was possible, therefore, to control for "attention" or "exposure" without losing many cases by restricting the analysis to persons who were exposed to and received market news information.

One consequence of the argument that separates communication from its effects, is that the Katz-Lazarsfeld category of "content" could not be considered as an aspect of structure in the analysis. Rather, the item to which functions are attributed is market news information. For methodological rigor, the messages of which market news consists should be the same for all individuals if the variability in the dependent variable (uses of market news) is to be attributable to structural difference. If not, variability in functions may be attributable to either differences in content or in structure. Therefore, content should be controlled and cannot be an independent variable.

Like content, the medium through which market news information is received has an important bearing on effectiveness. Nevertheless, it could not be considered as an independent variable in this design. The logic behind the definition of structure is consistent with the argument for a separation of communication and effects. In the present study the

83. See chapter three for the specifications on sampling.

fact of communication is taken as given and questions refer to phenomena that may follow from that fact. Therefore, to the extent that the medium is a significant part of communication, it should be controlled and not considered an independent variable.

This leaves only the general "predisposition" category of the Katz and Lazarsfeld schema as a source from which to draw the independent variables. However, in the study cited, Katz and Lazarsfeld also suggest a fifth general category:

...it appears that communications studies have greatly underestimated the extent to which an individual's social attachments to other people, and the character of the opinions and activities which he shares with them, will influence his response to the mass media. We are suggesting, in other words, that the response of an individual to a campaign cannot be accounted for without reference... to the character of his interpersonal relations.⁸⁴

The dimensions of structure were framed with the guidance of these two general categories.

As previously indicated, market news is occupationally specific and specially meant for the occupational or work world. In general terms, there are at least two dimensions to any niche in the economic divisions of labor. On the one hand there is the actor's conscious awareness and evaluation of his own psychological relationship to the job. The work role is defined by ego as satisfying or noxious; as a source of prestige cumulation, affective indifference or disgrace; as something to be defended or rejected. Since men act in terms of their definition of the

84. Katz and Lazarsfeld, op. cit., p. 25.

action situation,⁸⁵ ego's relational definition to his job is of theoretical and empirical importance. "The social world of the average adult is primarily patterned about work activity ... The satisfactions of daily life are largely bounded by the rewards of work. And so, too, the dissatisfactions."⁸⁶

This social psychological orientation to one's job will be referred to as "occupational involvement." It is manifested in the degree to which a person has a preference for and identifies with an occupation. Some form of this relationship must exist for all occupations.

A complementary feature of the job, always present is the degree of "occupational commitment." By this is meant the comparative degree to which factors other than those of psychological preference tie a person to farming (or any other occupation) at a given point in time. In this sense the variable is specifically intended as a residual category as defined by Parsons.⁸⁷ The use of occupational commitment

85. For the clearest statement of this position in social psychological terms see Walter Coutu, Emergent Human Nature, New York: Knopf, 1949.

86. D. Miller and W. Form, Industrial Sociology, New York: Harpers, 1951, p. 7. Haire observes that, "There is probably no other field in the general area of social psychological problems in industry in which there are so many publications as there are under the general heading of morale." M. Haire, "Industrial Social Psychology," in Handbook of Social Psychology, Gardner Lindzey (ed.), Cambridge: Addison-Wesley, 1954, p. 1104. Morale and involvement tap quite similar phenomena.

87. Parsons, Structure, op. cit., pp. 16-20.

in this study pivots about the idea of economic cost. At least two highly related facets of the phenomena can be identified. These are the actor's position relative to present and future facilities⁸⁸ within and outside the given occupation and the articulation of the job with such other non-occupational factors as, for instance, the point in the life cycle. Occupational commitment as described here has sharp overtones of involuntary or non-recognized coercion. Its meaning will be explored further in the next chapter.

Of course, involvement and commitment can vary independently. For example, a young, part-time farmer, factory employed for the major part of his income may be highly identified with agriculture but not particularly committed to it presently (though he may desire to be in the future.) A full time farmer highly committed to agriculture because of advancing age, lack of education, a growing family, and an inherited dairy farm may or may not identify with farming. There are both happy and disgruntled dairy farmers. Furthermore, it seems reasonable to expect that variation in either involvement or commitment will produce significant effects on job performance and, hence, on the utility and functions of the occupationally specific market news information.

A third type of "predisposition" used in this study is the rationality of the individual in his orientation to the job. For presentational purposes, it will be called simply "rationality," and will refer to the degree to which the individual farmer behaves in ways which,

88. C. P. Loomis and J. A. Beegle, Rural Sociology, Edgewood Cliffs, New Jersey: Prentice-Hall, 1957, p. 7.

from economists' perspectives, should maximize income from the farm. For instance, some farmers go out of their way to use the latest improved farm technologies and practices. Others make no efforts in these directions and farm by the "seat" of their cultural heritage.⁸⁹ Since new technologies often are more efficient, they allow a greater return per unit of input. Other things equal, the person who adopts a new technology should accrue greater income than the person who does not. In this terminology, adoption would be construed as "rational" while non-adoption would be "non-rational."

The last two structural dimensions used in the study were drawn from the area of interpersonal relations. At least two broad aspects of this area are variable; first, the character or quality of the relationship, and second, the types of statuses to which the status in question must be related. Both may vary widely. However, Smith has demonstrated the relevance of a diffuse-specificity definition of interpersonal relationship to dealers and hired labor for explaining variations in some patterns of exposure to market news.⁹⁰ While it would be desirable to use the same variables in the present study, such direct replication was not possible. Since over half of the respondents (54.4%) used no hired labor, this status could not be used because it did not meet the criterion of applying to all sample respondents. In contrast, the residence pattern imposes some form of relationship with

89. See for example J. H. Copp, "Toward Generalization in Farm Practice Research," Rural Sociology, vol. 23 (June, 1958) pp. 103-111.

90. Smith, "Michigan," op. cit.; J. Smith, Organization, op. cit.

neighbors on all respondents. Moreover, a number of studies have demonstrated the important part played by neighbors and peers in communication.⁹¹ In addition, "no relationship" with neighbors can be ascribed a meaningful polar position on a diffuse - specificity continuum, while "no relationship" with hired labor is more ambiguous because it may be either a response to the specificity desired of the relationship or, an economic inability to support the conditions to have the contact. Therefore, relationship with the status "neighbors" was substituted for that with the status "hired labor." It was decided to include two statuses because it had been found that the tone of interpersonal relations could vary independently between dealers and hired labor.⁹²

The following list summarizes the disposition in this research of the "sets" of variables for effects.

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91. See for instance, Katz and Lazarsfeld, op. cit.; A. Lee Coleman and C. Paul Marsh, "Differential Communication Among Farmers in a Kentucky County," Rural Sociology, vol. 20 (June, 1955) pp. 93-101; Herbert F. Lionberger, "The Relation of Informal Social Groups to the Diffusion of Farm Information in a Northeast Missouri Farming Community," Rural Sociology, vol. 19 (September, 1954) pp. 233-243.
92. Smith, Organization, op. cit.

<u>Dimension of Effect</u>	<u>Place in Design</u>
1. Audience or exposure	1. Control. Study includes only those exposed.
2. Predispositions	2. Independent variables - rationality, involvement, commitment
3. Intervening diffuse groups	3. Independent variables - dealer and neighbor relations
4. Media (sources)	4. Control
5. Content	5. Control

Definition of Function

Function is defined as a "condition, or state of affairs, resultant from the operation (including in the term operation mere persistence) of a structure through time."⁹³ In less formal terms, "Functions refer to what is done and structure to how (including in the meaning of "how" the concept "by what") what is done is done."⁹⁴

The empirical phenomena seen as dependent (i.e., functions) were a variety of possible uses that market news might be put to by farmers receiving it. From the USDA viewpoint, market news is intended to have utility or operate toward several ends. These include use as a criterion in:

- 1.) making economic decisions about such aspects of marketing as when, where, how much, and in what form to sell, and what price to expect or charge.
- 2.) making decisions about changes in production plans.
- 3.) evaluating the honesty of dealers and the efficiency of local marketing arrangements

93. Levy, op. cit., p. 56.

94. Ibid., pp. 60-61.

In addition there are a number of uses not specifically intended by the USDA to which market news, nevertheless, could be put. A selected number of these conclude the dependent variables. These include the possibilities that it may be to:

- 1.) act as a resource in interpersonal relations i.e., as a conversational gambit.
- 2.) reinforce occupational involvement.
- 3.) provide new ideas and concepts - to change rationality through education.
- 4.) serve a mental health function by offering a target for hostilities derived from dissatisfaction in other areas.
- 5.) provide a criterion (among others) for ordering persons in a social prestige order for the community.
- 6.) permit surrogates to perform the task of obtaining market information.
- 7.) evaluate partially the performance of the USDA.

The range of both types of functions considered was not intended to be exhaustive for the respondents. Functions were chosen only to possibly articulate the independent variables and to demonstrate their breadth and, thus, were not meant to be exhaustive.

The distinction between intended and unintended uses corresponds in part to Merton's manifest-latent distinction.⁹⁵ Categorization was determined by the intent of market news as seen by the ultimate communicator (and client) - the federal government agencies. The functions, however, were defined in their relevance for the recipients - farm people. Thus, the manifest-latent distinction may not yield the same result when the point of reference is changed from communicator to communicatee.⁹⁶

95. Merton, op. cit., pp. 60-82.

96. Though no direct evidence was available bearing on the point it was the writer's impression that, following Merton's definition of latent as unrecognized by the participants i.e., farmers, the distinction as made was not broad enough. For many respondents the latent functions included not only those here defined as latent but many of what are here termed manifest functions.

While this is not crucial to the design, it does limit the research, particularly in terms of Merton's functional paradigm.⁹⁷

A final aspect of structural-functional analysis relevant for consideration here is that:

.... patterns of action are themselves the results of the operation of other patterns, and in this sense they are functions. This consideration points to a special characteristic of the referents of the concepts of function and structure. The same empirical phenomena may be an example of either a function or a structure depending upon the point from which it is viewed.⁹⁸

What is a "function" at one point in time may at a later point be "structure." In the present study, at the time of sampling, persons are categorized as having a certain structure. All persons in a structural type show certain distinctive behavioral and social characteristics. Each type differs, at least in these selected respects, from the others. However, each category contains a mixture of people, some who would always have been so classified and always will be, and others who may be moving into or out of the category in which they happen to fit at the time of the study. Of particular interest, in this respect, is the fact that the occurrence of some of the functions under study here can result in a change in the future structural placement of an individual.⁹⁹ Unfortunately, the extent to which these functions may have this effect

97. Merton, *op. cit.*, p. 51 gives as a "basic query," "What are the effects of the transformation of a previously latent function into a manifest function?"

98. Levy, *op. cit.*, p. 61.

99. See P. F. Lazarsfeld and R. K. Merton, "Friendship as Social Process: A Substantive and Methodological Analysis," in M. Berger, *et. al.*, Freedom and Control in Modern Society, New York: Van Nostrand, 1954, pp. 18-66 esp. pp. 37-55 for discussion of the point in a somewhat different substantive context.

cannot be ascertained from the present study. However, the fact that they can have this effect is abundantly illustrated by the fact that two of the possible functions are changes in the level of commitment and/or involvement. It should be made clear that, given the technique of a cross-sectional sample survey, the only question the study can address is that of some possible roles of a single facet of structure (market news information) in varying structural systems. The answer can be only in terms of correlation rather than causation. Causal analysis requires a necessary time dimension which the study did not obtain. The inability to bring conclusive data to bear on possible alterations on structure of a given "function" is one of the many limits of the research.

Some General Problems of Analysis

To this point the discussion has indicated certain analytical shortcomings in "effects" studies generally and in market news studies specifically. It has been argued that a limited type of functional analysis will meet those inadequacies. Within this framework a rationale has been given for selecting and defining: 1.) the dimensions of structure as independent variables; 2.) the unit to which functions are to be imputed - market news information; and 3.) the functions of interest as dependent variables. In bringing these three items to bear on the study hypothesis, a number of related considerations have to be taken into account.

As has already been indicated, functional analysis is based on the tenet of interpreting data by establishing their consequences for larger

structures in which they are implicated. Buckley has commented on what this has meant substantively in sociology.

... integrated social wholes are analyzed into structures and functions; the term "function" is used primarily in its non-mathematical sense; and the focus is primarily on the consequences of the operation of structures for the "survival" or "maintenance" of some specified or unspecified state of the whole.¹⁰⁰

In this light Merton is led to the distinction between "function" and "dysfunction"; the former, "those observed consequences which make for the adaptation or adjustment of a given system"; the latter, "those ... which lessen the adaptation."¹⁰¹

This distinction supposes some reasonably crystallized set of behavioral phenomena which may be designated as the system. Generally this means professionally conventional and not in any sense "given" in the existential world and directly perceived. This is vividly recognized when it is noted that:

... persons are no more concrete entities than are groups... we cannot "see" persons any more than we can see groups: both are realities which extend beyond the range of human perception. Both are abstractions from and summaries of our observations of more limited aspects of the reality.¹⁰²

In this very important aspect of consensual assignment to reality¹⁰³ and

100. Walter Buckley, "Structural-Functional Analysis in Modern Sociology," in Alvin Boskoff and Howard Becker (eds.) Modern Sociological Theory, New York: Dryden, 1957, p. 249.

101. Merton, op. cit., p. 51.

102. C. K. Warriner, "Groups Are Real: A Reaffirmation," American Sociological Review, vol. 21 (October, 1956) p. 552, italics added.

103. See Coutu, op. cit., particularly pp. 200-209.

percept, that which is considered to be a "structure" in sociology is an empirically "observable" whole - for example, a ward political club, a city machine, a national political party. In short, functional analysis conventionally presupposes boundary maintaining social systems.¹⁰⁴

Then, in the example, one can be in a favorable position to assess the "net balance of an aggregate of consequences"¹⁰⁵ of a phenomenon like patronage. That is so because there is a backlog of interpretation and research cast in terms of reality perceived in this certain way.

The present study does not deal with a structure as an empirically "observable" whole in this same sense. The empirical referent of structure (i.e., "system") is a-conventional for functional analysis. This is so in two senses. First, as indicated above, the study defines as structure phenomena less general than society or other organized social systems. Second, in focusing on combinations of selected statuses, the customary "sort factors" or "social correlates" as variables of "social structure" are utilized in the study not as significant or objects of interest in and of themselves. Rather, they are interpreted

104. Parsons, The Social System, op. cit., pp. 482-483. Also, Loomis and Beegle, op. cit., chapter 1.

105. Merton, op. cit., p. 51, offers this process to counteract the incisive criticism that functionalism (if not functional analysis) tends to view all items in a structure as functioning positively (i.e., toward maintaining an equilibrium) and, hence, tends not to handle the problem of change. Cf., Buckley, op. cit.; A. W. Gouldner, "Some Observations on Systematic Theory, 1945-1955," in H. L. Zetterberg (ed.) Sociology in the United States of America, Paris: United Nations Educational, Social and Cultural Organizations, 1956, pp. 34-42; Carl C. Hempel, "The Logic of Functional Analysis," in L. Gross (ed.) Symposium on Sociological Theory, Evanston: Row, Peterson, 1959, pp. 271-307.

in terms of their meaning or implication for more synthesized variables.¹⁰⁶ For instance, age, amount of education, and size of farm are interpreted as significant only as they contribute or do not contribute to commitment or to involvement. In rural sociological research the variables of age, education, and size of farm are usually treated independently, often with little regard to their mutual relations. Sometimes these variables are treated simultaneously through a scaling procedure or composite index construction technique. Rarely are these variables aggregated into a series or battery of synthesized variables, *i.e.*, for example commitment and involvement, and considered jointly. This is particularly true in market news studies. Hence, there is very little substantive basis for ascertaining possible "functional" or "dysfunctional" roles for market news information. In the present context, since the study projects a flat picture timewise, and because only small numbers are available for any one of the structural types to be defined, the specification of a "net balance of consequences" is both impossible and premature. Rather, it seems first necessary to defend the designation as a structure of the complex being studied to demonstrate the programmatic utility of this decision. The analysis procedures must facilitate this task.

106. George Beal in a different context has urged the need for more attention to conventional "structural" variables in their "dynamic" rather than their "static" sense. See his, "Additional Hypotheses in Participation Research," Rural Sociology, vol. 21 (September - December, 1956) pp. 249-256. This dissertation does not accept Beal's definition of dynamic as "subject to control" nor does it accept his strong orientation to directed social change. This study does agree with the plea to deemphasize the traditional social structural variables in their static usage.

While the above considerations hold, it is also true that functional analysis supposes systemic determinants to behavior. This seems to suggest a holistic analysis; the need for a methodology for comprehending total phenomena sets simultaneously in time. However, if a sociological study is to be scientific, it must employ an objective, intersubjective methodology with all that this implies.¹⁰⁷ Objective operational techniques for comprehending such "wholes" are lacking in the social sciences.¹⁰⁸ Therefore, whatever else its merit, this

107. For a concise statement see Roy G. Frances, "The Nature of Scientific Research," in J. T. Doby (ed.) An Introduction to Social Research, Harrisburg: Stackpole, 1954, pp. 3-20. For a fuller treatment see Morris R. Cohen and Ernest Nagel, An Introduction to Logic and Scientific Method, New York: Harcourt, Brace, 1934, especially pp. 197 ff. And, in the most severe and at times overdrawn terms, George Lundeborg, Foundations of Sociology, New York: MacMillan, 1939.

108. Cultural anthropology in particular has been committed to this type of analysis through its use of "culture" as its most central concept. Cf., A. L. Kroeber and C. Kluckhohn, "The Concept of Culture: A Critical Review of Definitions," Papers of the Peabody Museum, Cambridge: Harvard University Press, vol. 41, (1950). At the same time there is a startling dearth of methodology texts in cultural anthropology. Notes and Queries on Anthropology (issued by a Committee of the Royal Anthropological Institute of Great Britain and Ireland, London: Routledge and Keegan, Paul; 6th edition, 1951.) is the only general methodology volume known to this writer. Its focus is on idiographic data collection (i.e., "Theory and fact should not be merged. The observer who wishes to give a theoretical construction to his material should consider this separately after recording his facts." p. 27) Radin's volume (The Method and Theory of Ethnology, New York: McGraw-Hill, 1933) is even more distressing, e.g., "Most good investigators are hardly aware of the precise manner in which they gather (or analyze) their data." (p. ix). Anthropology Today (A. L. Kroeber, (ed.) Chicago: University of Chicago Press, 1953) pp. 401-487, likewise contains certain data collection discussion.

In a more specialized area, "culture-at-a-distance," M. Mead and R. Metraux (The Study of Culture at a Distance, (eds.), Chicago: University of Chicago Press, 1953) specifically attempt to set out and codify methodological canons. That the methodology here, and

procedure must be rejected as a modus operandi. What is required is ~~some~~ form of what Blumer has called "variable analysis" - "the scheme of sociological analysis which seeks to reduce human group life to variables and their relations."¹⁰⁹

in the studies done in its name, and in the closely allied endeavor of "culture and personality" is grossly deficient bears abundant testimony. See among others: A. R. Lindesmith and Anslem Straus, "A Critique of Culture - Personality Writings," American Sociological Review, vol. 15 (1950) pp. 587-600; A. Inkeles and D. J. Levinson, "National Character: The Study of Model Personality and Sociocultural Systems" in Gardner Lindzey (ed.) op. cit., pp. 977-1020; M. L. Farber, "The Problem of National Character: A Methodological Analysis," Journal of Psychology, vol. 30 (1950) pp. 307-316. Mead's counterargument to the criticism is particularly instructive and damning. See Margaret Mead, "National Character," in Anthropology Today, op. cit., pp. 642-667.

Redfield's candid admission goes to the heart of the matter: "The validity of a characterization of a culture by any of the models employed ... is not today established by experimental or any other precise proof. ... Rather it may be said that the reader of an account of a culture or system of social institutions is satisfied as to the truth of what he reads only in part by the correspondence between the more comprehensive propositions and the documentation offered. In part the proof, if proof it be, seems to issue from ... an act of apprehension of the totality ... and such an act of apprehension is characteristic of the understanding of a work of art." "Relations of Anthropology to the Social Sciences and to the Humanities" in Anthropology Today, op. cit., pp. 735-736.

109. Herbert Blumer, "Sociological Analysis and the 'Variable' ", American Sociological Review, vol. 21 (December, 1956) p. 683. This article is highly critical of variable analysis and correctly points to certain deficiencies. His plea to a holistic interpretation (p. 689), characteristically, is unsupported by a working methodology - " This is not the occasion to spell out the nature of the scheme." For the most succinct and sophisticated statement of variable analysis see Lazarsfeld and Rosenberg, op. cit.

A crucial problem is inherent in this analysis schema. Variable analysis requires a procedure or rule for judging the significance of variate correlations. Because statistical correlation between the operationally defined indices of the independent variables and the dependent variables offers the evidence to evaluate the study hypothesis in variable analysis, the question arises as to whether a given correlation is important and significant or not. There is no clearcut answer to this question.

Among those who subscribe to this methodology a significant split has developed on this issue. Selvin writes:

With only slight exaggeration it is possible to divide empirical researchers into two groups: (1) those who test each conclusion for significance but seldom cross tabulate extensively to discern causal or explanatory factors; and (2) those whose substantive analyses are based on extensive cross-tabulations, with no tests of significance. Although the members of the first group are by no means of one mind, the few critics within it have generally concluded that the tests do perform a valid function in sociological research. Exactly the opposite point of view has been [and is here] argued.¹¹⁰

110. Selvin, op. cit., p. 519. For generally concurring appraisal see J. S. Coleman, "Statistical Problems," in S. M. Lipset, Martin Trow and J. S. Coleman, Union Democracy, Glencoe: The Free Press, 1956, pp. 427-432; Patricia L. Kendall, "Note on Significance Tests" in R. K. Merton, G. C. Reader and P. L. Kendall (eds.), The Student Physician, Cambridge: Harvard University Press, 1957, pp. 301-305; Herman Wold, "Causal Inference from Observational Data," Journal of the Royal Statistical Society, vol. 119 (Series A, part 1, 1956) pp. 28-50. Without direct statement though inferentially supporting this position, is H. Zeisel, Say It With Figures, New York: Harper's (4th ed.), 1957, especially pp. 131-214 and nearly all of Paul F. Lazarsfeld's work. See particularly, "Interpretation of Statistical Relations as a Research Operation," in Lazarsfeld and Rosenberg, op. cit.; with P. L. Kendall, "Problems of Survey Analysis," in R. K. Merton and P. F. Lazarsfeld (eds.), Continuities in Social Research, Glencoe: The Free Press, 1950, pp. 131-196; with Elihu Katz, Personal Influence, op. cit.

Selvin's critique is trenchant. Above the technical difficulties following from the logic of the null hypothesis to which significance tests are inextricably wed,¹¹¹ one criticism stands out above all his others. It is that users of tests of significance tend to confuse statistical significance with substantive significance and, therefore, make no attempt to distinguish between "true" and "spurious" correlations. The former, "reflects a true causal connection."¹¹² "A causal relationship between two variables [exists] if the partial relationships [between them] never disappear, even when every conceivable antecedent test factor is introduced."¹¹³ A relationship is spurious if at first "X" and "Y" are found to be related but this relation is due to their concurrent correlation with a third variable "Z". Selvin argues:

... most users of significance tests do not even attempt to deal with the correlated biases; instead, they move directly from the observed difference to a test of significance. These tests must be the last step in statistical analysis, not the first.¹¹⁴

Selvin and his former colleagues of the Bureau of Applied Social

111. See W. A. Wallis and H. V. Roberts, Statistics A New Approach, Glencoe: The Free Press, 1956, chapter 12; R. A. Fisher, The Design of Experiments, London: Oliver and Boyd, 1951 (6th edition) pp. 13-17. We shall reconsider the technical difficulties in a somewhat different context below.

112. Zeisel, op. cit., p. 205.

113. Lazarsfeld and Kendall, op. cit., p. 158.

114. Selvin, op. cit., p. 522.

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Research at Columbia 115 propose other guide lines for assessing data and drawing inferences. Coleman¹¹⁶ points out two: test by partials and tests by implications. The former is achieved simply by introducing control variables as part of the usual contingency analysis. The result is manifold classification tables rather than single variable tables. It is particularly exemplified by the work of Zeisel.¹¹⁷ The second schema states merely that, "if there is a causal relationship between two variables, then this should imply other relationships as well."¹¹⁸ This criterion is argued by Merton, et. al., as "internal consistency" - "a finding with regard to one question is held to be valid only if it also holds true in connection with a closely related question."¹¹⁹ A second criterion offered by Merton and his co-workers is labeled "replicative consistency." This means that "a finding in one group must also hold true in a second independent group, if the same general conditions prevail in both."¹²⁰

115. See James A. Davis' review of The Student Physician, op. cit., in the American Journal of Sociology, vol. 63 (January, 1958) pp. 445-446.

116. James S. Coleman, letter to the editor, American Journal of Sociology, vol. 64 (July, 1958) pp. 59-60.

117. Zeisel, op. cit.

118. Coleman, letter, op. cit., p. 59.

119. Merton, Reader and Kendall, op. cit., p. 303.

120. Ibid., p. 304. Of course, neither of these criteria are new. They are basic to what is generally understood as "scientific knowledge." The fact that it is singled out for special emphasis underscores the confusion over the criteria of proof.

Davis has opposed this position. In his review of The Student Physician he points to numerous instances in which similar or identical data differences lead now to positive findings; now to negative ones. His rejoinder to Coleman's response to that review is cogent. It goes to the heart of the general methodological problem of concern here.

Coleman says: "If the relationship is truly a chance one, then it will tend to show inconsistencies under different values of the third variable." Probably so, but how can you demonstrate "inconsistencies" without some measure of inconsistencies and some allowance for chance fluctuation? Does he propose to reject every relationship which does not show identical degrees of relationship in each value of the third variable? If not, which ones does he propose to keep and which does he propose to reject? ... Coleman says that, if the implications of an interpretation pan out, the interpretation "is strongly reinforced." ... What bothers me is how you tell whether the implications pan out or not, if you do not use some sort of criterion for measuring the "pan-out ability" of a given relationship and evaluate the net "pan-out ability" of a series of relationships. Again, something akin to significance tests is sneaking in the back door.¹²¹

Simply, the problem is how to minimize spurious correlation and, yet, to present formalized, quantifiable techniques so that two research analysts must come to the same conclusion when faced with the same set of data. Davis suggests:

... The BASR methods and traditional significance tests are [not] mutually exclusive, but each provides data on a different type of potential error. Full error control requires the application of both types of tests.¹²²

Davis does not specify any detail in that direction, however.

Others have followed the problem more technically and explicitly.

121. James A. Davis, rejoinder to Coleman's letter, American Journal of Sociology, vol. 64 (July, 1958) p. 61.

122. Ibid.

A separate and pointed rejoinder to Selvin has appeared.¹²³ It will be useful to consider it. McGinnis argues that the general inability in sociology to randomize correlated biases is quite correct. However, this fact only vitiates the use of statistical tests of significance in survey data if one accepts the meta-sociological tenet of complete and absolute cause - effect interpretation. McGinnis denies that this is necessary by asserting that there are three types of hypotheses:

Type III hypotheses impose the condition that all correlated biases be controlled, which can only be accomplished by randomization. Type II hypotheses require that some finite number of related effects be eliminated, presumably in the statistical model itself. Type I hypotheses make no demands whatsoever of this sort.¹²⁴

He notes further that, "No test of significance requires of itself that all correlated biases be removed."¹²⁵ This is required only for Type III hypotheses.

McGinnis observes that Selvin slips to the hidden belief, "that social scientists should be concerned immediately and exclusively with Type III hypotheses and their tests. This conviction leads Selvin to the conclusion that all hypotheses of sociology are automatically of Type III."¹²⁶ This being the case, all of Selvin's critique rides on

123. See Robert McGinnis, "Randomization and Inference in Sociological Research," American Sociological Review, vol. 23 (August, 1958) pp. 408-414.

124. Ibid., p. 412.

125. Ibid., p. 413.

126. Ibid., p. 412.

false grounds and "the innocent test of significance becomes a false villain."¹²⁷

Tests of significance have a legitimate function to perform in survey research. If correlated biases are present in a sample or population and operating, this does not influence the outcome of a test for a null hypothesis of Type I or Type II.¹²⁸ It is crucial for a Type III hypothesis but, such types are not attainable presently.¹²⁹ Tests of significance offer a "prearranged decision procedure" for conforming to what Sewell argues is the law of parsimony in theory testing:

If a scientist's purpose is to test a hypothesis concerning the relationship between variables, he begins ... with the simplest possible hypothesis ... The hypothesis of no relationship, or the null hypothesis ... only if the hypothesis of no relationship can be rejected is there any point in entertaining more complex hypotheses.¹³⁰

127. Ibid., p. 413.

128. Ibid. Such hypotheses are necessarily time, space, and data bound.

129. Whether the future offers any hope is a moot point. McGinnis argues the extreme that there is no "completely general relationship which is independent of population, time and space." (ibid., p. 412) If one takes the "every conceivable antecedent factor" part of the definition of "true" correlation literally, it would seem that Selvin is not far from McGinnis. Selvin's own enumeration of why all correlated biases cannot be removed in practice from sociological research argues against his own demand for definitive cause-effect schemas.

130. William Sewell, "Some Observations on Theory Testing," Rural Sociology, vol. 21 (March, 1956) p. 7.

This analysis will proceed from the general position of Davis and McGinnis. In the present stage of knowledge, Type III hypotheses are working impossibilities. All correlated biases are neither known nor controlable. Nonetheless, Type III hypotheses are an ideal worth achieving. It is intended in this study to demonstrate a form of analysis which it is believed is a maximum effort in this direction under current conditions. Since it is a mode not generally used in sociology, the objective of "demonstrating" will be fulfilled.

Factorial Design

General Propositions

The model for analysis used in the study is a factorial arrangement of variables evaluated by the analysis of variance. "Analysis of variance is, as its name implies, the ... breaking up of variance into portions arising from specified sources and the testing of these portions to discover if they are significantly different."¹³¹ In general it is a method "for analyzing and describing association between one quantitative and one or more nonquantitative characteristics."¹³²

In a factorial design the effects of a number of different factors on a dependent factor are investigated simultaneously. The treatments (of standard experimental terminology¹³³) consist of all combinations

131. Margaret J. Hagood and D. O. Price, Statistics for Sociologists, New York: Henry Holt, 1952 (revised edition) p. 379.

132. Ibid., p. 381.

133. Ostle correctly indicates that a large measure of semantic error inheres in the use of "factorial" which generally implies a type of experimental design. But, he notes "factorial really refers to how the 'treatments' were formed and not to the basic design." See Bernard Ostle, Statistics in Research, Ames: Iowa State College Press, 1954, p. 341.

that can be formed from the different factors. For example, in a 2 X 2 factorial, years of education as the necessary quantitative dependent variable could be investigated in terms of two independent qualitative factors, say race and religion each operationalized at two levels¹³⁴ of white and Negro; Protestant and Catholic, respectively. Then there would be four possible "treatments" - Negro Protestant, Negro Catholic, white Protestant, and white Catholic. The effect of any one treatment on education is considered as the sum of three effects: race, religion, and the interaction of race and religion. In this instance interaction measures the failure of race effects to be the same for each religion and, conversely, the failure of religion effects to be the same for each race. Interaction is the measure with which "two factors combine to produce an added effect not due to one of them alone."¹³⁵

Now, it is true as Hagood and Price point out that, "there has been no thorough treatment of the utility of the analysis of variance ... in the analysis of data from purely observational situations as differentiated from experimental."¹³⁶ The analysis of variance was devised for use where relatively strict experimentation is possible. However, as Ostle points out, there is no necessary reason why factorials could not

134. Hence, the designation 2 X 2. If 3 levels of one factor were used and 2 of the second the designation would be 2 X 3 and so on. There is no limit to the number of independent variables or the number of "levels" for each, aside from practical considerations.

135. Ostle, op. cit., p. 345.

136. Hagood and Price, op. cit., p. 380.

be applied to survey data.¹³⁷ Yates concurs cautioning only, as with the results of other tests of significance, that:

... deductions as to the magnitudes [if any] of the effects of given factors can never be made with certainty from survey data. ... In order to determine with certainty the magnitude in the causal sense of the effect of any given factor, experiments must be undertaken ... Nevertheless they [surveys] are of value.¹³⁸

Numerous sociological surveys have used the analysis of variance, generally without careful or explicit concern with whether the necessary assumptions involved are satisfied by their data.¹³⁹ Only one published work in sociology which has used a factorial arrangement has come to the writer's attention. That is a study by Keyfitz investigating the significance of distance from city on family size.¹⁴⁰

Using a 2⁶ factorial arrangement, the effect of any one of 6 independent variables was examined while holding "constant" the level of the other five. Only two classes for each independent variable were used; this for "vastly simpler [and efficient] calculation purposes,"¹⁴¹ and

137. Ostle, op. cit., pp. 341; 374-375.

138. Frank Yates, Sampling Methods for Censuses and Surveys, London: Charles Griffin, 1953 (revised edition) p. 131.

139. See particularly Churchill Eisenhart, "The Assumptions Underlying the Analysis of Variance," Biometrics, vol. 3, (March, 1947) pp. 1-21. Fortunately, this probably has not caused overly great practical repercussions. See, William G. Cochran, "Some Consequences When The Assumptions for The Analysis of Variance Are Not Satisfied," Biometrics, vol. 3, (March, 1947) pp. 22-38.

140. Nathan Keyfitz, "A Factorial Arrangement of Comparisons of Family Size," American Journal of Sociology, vol. 58 (March, 1953) pp. 470-480.

141. In the nature of the case unequal numbers arose in the "treatment" types for the analysis of variance. Such a situation presents special calculation problems for the analysis of variance. The dichotomous case short circuits these. See G. W. Snedecore, Statistical Methods, Ames: Iowa State College Press, 1956 (5th edition), pp. 268-270.

because "the problem was conceived essentially as one of finding out whether or not there was an effect ... rather than how much effect."¹⁴² Sixty-four cells resulted. These were all the possible combinations of the six dichotomized factors. Each case in the sample of 1056 families was assigned to one and only one cell of the master table. The average number of children for those cases in any one cell constituted the data for analysis.

On this basis it was found that certain of the results "contradict other work on differential fertility." That is, a direct relationship of fertility with both income and years of schooling were found in contrast to the usual inverse relationships.¹⁴³ Thus, in the BASR terminology, a spurious correlation was ferreted out. Keyfitz concludes "holding relevant variables constant may reverse familiar relationships."¹⁴⁴

The significance of this for exploratory studies is that if "relevant" factors are controlled at the outset, the likelihood of "spurious" correlations will probably be less.¹⁴⁵ The likelihood of reversing "familiar relationships" will be less because Type II hypotheses replace

142. Keyfitz, op. cit., p. 472.

143. Ibid., p. 477.

144. Ibid.

145. Smith, op. cit., achieved control on age and education by sampling within a single age-education level and thus avoided spurious correlation with respect to these factors.

Type I from the beginning. Research effort need not be spent in costly duplicative, though necessary, studies whose only purpose is to investigate the relationship of certain factors when the effects of others are removed.¹⁴⁶

Furthermore, a factorial arrangement of variables facilitates investigation of the impact of systemic relations, by use of estimates of interaction effects. Cochran and Cox observe that:

It sometimes happens that the effects of factors are independent. By this [for example] we mean the response of nitrogen is the same whether ploughing is shallow or deep, and that the difference between the effects of deep and shallow ploughing is the same whether nitrogen is present or not ... The question arises: How do we know whether factors are independent? ... A factorial experiment itself provides a test of the assumption of independence.¹⁴⁷

The existence of significant interactions effects is evidence for complex systemic action of the factors involved. Interaction is measured as the variance in a factorial cell not accounted for by the components taken singly when the level of the remaining components is held constant. Significant interactions "indicate" that the simple effects of a factor vary according to the particular combination of other factors with which they are produced,"¹⁴⁸ the complex form of "system." Since "interaction

146. See for instance, William Sewell, A. O. Haller and M. A. Straus, "Social Status and Education and Occupational Aspiration," American Sociological Review, vol. 22 (February, 1957) pp. 67-73.

147. William G. Cochran and Gertrude M. Cox, Experimental Designs, New York: John Wiley, 1950, pp. 123-124.

148. Ibid., p. 125.

is the important effect about which the factorial design can give information,"¹⁴⁹ factorial analyses are particularly fruitful for studies of systemic relations.¹⁵⁰

Adaptation to the Research Data

The last consideration in this chapter is the adaptations of the study data to the demands of a factorial design. Two major problems were involved. In the first place, given the sample size, it was apparent that the probable maximum limit for a dichotomized factorial arrangement was a 2^5 model. Using more than five qualitative factors meant that there would be no cases for some cells of the factorial, an ambiguous situation for tests of significance.¹⁵¹ In addition, a model beyond 2^5 would also yield a very small number of cases in many other cells. Estimates of error based on such small numbers of cases would be so wide as to be meaningless. Since the study proposed five structural dimensions and two control variables, some compromise was required.

It will be recalled that, for methodological rigor, communication should be "constant" to assess whether differences in functions could

149. R. L. Anderson and T. A. Bancroft, Statistical Theory in Research, New York: McGraw-Hill, 1952, p. 267.

150. Yates, op. cit., p. 313, cogently observes with specific regard for Keyfitz's problem, but with wider import, that, "The procedure of grouping and working with factors at two levels provides an alternative to multiple regression analysis. In data of this complexity [i.e., Keyfitz's example] regression analysis would be exceedingly laborious, requiring the evaluation of 28 sums of squares and products and the inversion of a 6×6 matrix. Moreover, the regression technique does not readily lend itself to the investigation of the existence of interactions."

151. See Oscar Kempthorne, The Design and Analysis of Experiments, New York: John Wiley, 1952, pp. 287-288.

be attributed to the independent variables in question.¹⁵² At the same time the study was aimed at an investigation of the structural dimensions as a system. Because of the shortage of cases, both goals could not be attained. One had to be chosen. The initial compromise was made in favor of a study of system.

First, evaluations will be made without the use of control variables. Subsequently controls will be added to: (1) the various subsets of independent variables significantly related to the dependent variables; and (2) to the various subsets of independent variables not significantly related. In no case will it be possible to combine "system" and "control" in complete patterns. The next best alternative seems to be to ask whether significant relationships continue to prevail when control variables are substituted, or whether significant relations emerge when none existed before if control variables are substituted. In case all five items comprising a "system" show significant relations (or, the converse, of all five showing no relationship) each of the combinations of two controls and three independent variables will be examined.

The second problem concerns the dependent variable. In the analysis of variance the dependent variable must be quantitative and, hence, continuously distributed. In this respect Guttman's observation is cogent:

confusion may arise as to what is a quantitative variable because when one is dealing with a statistical variable,

152. Within, of course, the more general recognition of the "weak" rather than positive (causal) relationship to which survey data are currently subject.

one is always dealing with not one variable but with two variables simultaneously. One variable is the content of interest ... the other variable is the frequency function. The frequency function is always quantitative as it arises from a counting process. The variate itself may be either quantitative or qualitative; the fact that the frequency function is quantitative has nothing to do with the nature of the variate.¹⁵³

The dependent variables of the study singly considered do not meet the quantitative requirement directly. On the other hand, by jointly considering all functions simultaneously a new variable quantitative in content can be defined. If we assume that the functions are reasonably independent, and if we entertain the hypothesis of no relationship between any structural type and any function, then it would be possible to obtain a measure of "functionality" through simply counting and summing the number of functions which can be identified as being served for a given individual irrespective of their contribution (functional or dysfunctional) to a structure. If there is no relationship between the structural dimensions and the dependent variables, then the number of functions associated with varying levels for any structural dimension should be a matter of chance and consequently should be distributed randomly. The distribution of the total number of functions to any cell of the factorial also should be distributed randomly.

This new variable of "functionality" has the same claim to "quantitativeness" as do many other borderline cases, for instance, number of children in the family or income.¹⁵⁴ This point is not to be overly

153. In S. Stouffer, et. al., Measurement and Prediction, Princeton: Princeton University Press, 1950, p. 193.

154. Economists have for years operated as if each dollar of income were equal "in content", using Guttman's terminology. This gave them

stressed, for in the last analysis the assignment as quantitative or qualitative is not completely unequivocal.¹⁵⁵ In the present case this assumption is of particular heuristic value. It allows the development of a procedure which, under given conditions, maximizes simultaneous controls (the plea of the BASR school) while yet giving objective rules for rejecting or accepting a relationship as significant. At the same time it helps in advancing a necessary substitute to a Mertonian "net balance of functions" analysis precluded by certain conditions of the research.¹⁵⁶ The factorial analysis allows us to cut through a large number of possible structural variables and winnow them down to manageable proportions for the substantive functional analysis of chapter five. Here the dependent behaviors, considered singly, are considered as "qualitative" variables and here, the tests crucial for the study "hypothesis" are addressed.

Before turning to an examination of operational procedures, we may summarize what the factorial analysis will provide. If the analysis shows that the independent variables ("structure") are significantly

sufficient grounds for the parametric models characteristically employed in the field. Without necessarily refuting the parametric models some economists have recently explicitly recognized the artificiality of complete faith in this assumption. Hence, they have recognized the truth implicit in the old law of "diminishing utility." See for example, James S. Duesenberry, Income, Saving and the Theory of Consumer Behavior, Cambridge: Harvard University Press, 1949.

155. For an opposed view see Hagood and Price, op. cit. It is implied also in Guttman, op. cit.

156. See the discussion pages 42 - 44.

related to "functionality" this does not constitute direct proof for the study "hypothesis." The "hypothesis" of the study is only a sensitizing construct which cannot be verified by these data. However, such an outcome would be evidence for the associated objective of differentiating significant structural dimensions, i.e., verifying the utility of defining structure as has been done. Depending on the outcome of this first analysis, exploratory inquiries into the specific functional roles of variant communication receiving structure (i.e., complex of statuses) may also be made. This second analysis bears more directly on the "hypothesis" of structural constraint.

Chapter III

The Scheme for Analysis: Operationalization

Data Collection

Study Development, Schedule Construction, and Pretesting

Initial steps toward operationalizing the research project were taken early in January, 1956. For eight weeks the members of the research committee of the Department of Sociology and Anthropology¹⁵⁷ met with various USDA personnel and Michigan State specialists in agricultural economics and communication skills. Conferences were held on the average of every four days for three to four hours per session. These meetings were intended to serve as a background for understanding market news information and the part played by it in American agriculture.

A research design that emerged from these meetings was submitted to the research committee on March 7th. It was revised in light of that response and resubmitted March 15th. The design was again revised and submitted formally on April 23rd. This time presentation was to the entire Department of Sociology and Anthropology faculty and graduate students at the Department's colloquium series. The session showed the need for further slight revisions. Approval of the sponsoring agency was obtained only after this exhaustive examination of the research design.

157. The Research Committee was composed of Dr. Glen Taggart, chairman, Joel Smith, Edward Moe and Duane Gibson. Dr. Smith assumed working chairmanship upon Dr. Taggart's appointment as Dean of the International Studies Program and was in full charge of the research execution. Mr. Francis Sim, Mr. Harold Israel and the present writer were affiliated as graduate research assistants.

Work was begun immediately on both the sampling plan and schedule construction. The former will be treated in the next section. The latter received considerable attention before its adoption in final form (contained in Appendix B).

The information that had to be obtained in interviews with farmers was of four types: (1) latent consequences; (2) manifest consequences; (3) sources of market news; and (4) demographic and descriptive data to serve as indicators of the independent variables. For each of these areas it was possible to construct a section of the interview schedule somewhat independent of the other three. Between July 16th and December 26th four revisions of the latent consequences section, three of the sources section, and two each of the manifest and demographic sections were tested on farm operators in Ingham and Livingston counties. In light of these reconnaissances, by the research assistants, revisions were drafted under Dr. Smith's direction and retested with new respondents. The sections were then assembled into the total schedule and this was pretested, revised, and given further testing. Pretesting was included as part of the instruction for interviewers. In total, 24 full schedule interviews were completed in the pretest phase.

Sampling Procedure

The sample was drawn for the Department by the Agricultural Marketing Service of the USDA. It was a probability area sample of

almost all open country areas of lower peninsula Michigan.¹⁵⁸ The procedures followed were those outlined in Agricultural Handbook No. 67 by E. E. Houseman and T. J. Reed.¹⁵⁹ The senior author of that handbook was responsible personally for the sample drawn.

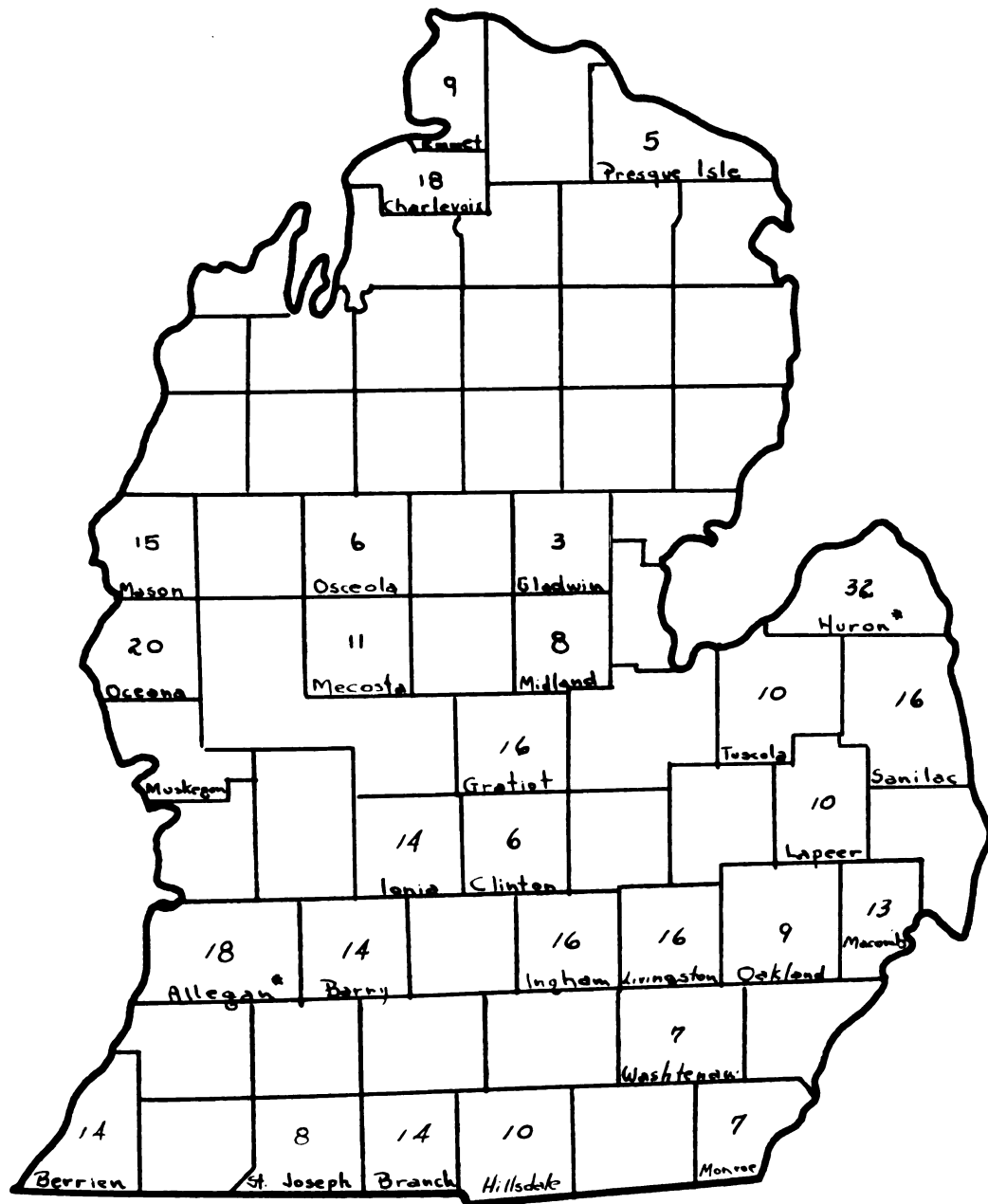
Thirty-one sample areas i.e., townships, which were drawn were located in the counties indicated by name in Figure 1. Within each of the 31 townships further areal segment sampling was applied. Thus, the sample was a two stage design with Minor Civil Divisions as the primary sampling unit and smaller areal segments within the township as the secondary sampling unit. By using the latest available aerial maps, attempts were made at the USDA to define the secondary units with probably equal numbers of farms.¹⁶⁰ The primary units were defined to make them as homogeneous by type of farming area and availability to mass media as possible while still requiring: (1) that each primary unit be a contiguous area and (2) that each area follow political boundaries for Minor Civil Divisions.

158. The population excluded certain areas of Ingham and Livingston counties because they had been used for pretesting. Townships with special township extension agent programs were withdrawn as were townships immediately contiguous to heavily populated urban areas which had substantial suburban populations. Finally, certain townships were excluded because interviewing for a study of livestock farmers' use of market news had been conducted recently in them by the Agricultural Economics Department of Michigan State University. All these areas constituted but a minor part of the total state farm population based on the 1954 Agricultural Census.

159. See Houseman and Reed, Application of Probability Area Sampling to Farm Surveys, Washington, D.C.: United States Department of Agriculture, Agricultural Marketing Service, May, 1954.

160. These maps were generally four to eight years outdated.

Figure 1 - Distribution of the Primary Sample Units and Number of Interviews Usable From Each County.



* Two sample areas in county.

On advice from the Sociology and Anthropology Department as to the time-cost factor for interviewing, revealed in pretesting, a sample of 330 farmers was judged to be the largest possible with the given resources. On this basis a sampling rate of 1/200 of all secondary units was deemed appropriate.

Within each of the 31 primary sampling units three secondary areas were drawn, constituting the sample. Each secondary sampling unit constituted an area for complete enumeration by the interviewers. Schedules were completed only for those persons who resided in the area and were farmer operators, i.e., who had marketed at least 150 dollars gross value of farm commodities in the calendar year preceding contact. Furthermore, such a person actually had to be responsible for the decisions made as to how much, where, when, and how the commodities were actually sold and had to be residing in the sample segment. Thus, a farmer tenant who had the marketing decisions dictated by a landlord was excluded from the sample by virtue of the definition of the universe. Similarly, persons farming land in an enumeration segment, but living outside the segment were excluded from the sample. Conversely, persons living in an enumeration segment and farming in another not included in the sample were included. No minimum acreage control requirement was used in defining a farm operator.

Interviewing

The data were collected by trained interviewers, all of whom were doctoral candidates in the Sociology and Anthropology Department at

Michigan State University and experienced in interviewing. While five interviewers¹⁶¹ were engaged, four-fifths of the completed interviews were taken by three,¹⁶² including the writer and Mr. Sim. The latter two jointly supervised the field work. Interviewing was begun the last week of June, 1957, and completed approximately the first week in October. A total of 375 completed schedules were obtained. For purposes of this study, however, only 356 were usable. Nine of the 375 respondents claimed to receive no market news. Another ten schedules were missing information on one or more of the independent variables and could not be assigned a place in the basic factorial.

Generally, interviewing was done on the farm at the respondent's convenience. The schedule was rather lengthy by normal survey standards. Interviews averaged between two and two and one-half hours. Since a large number of the respondents - 47.7% - worked off the farm, and nearly four in five of these worked at least half the year for a full day, a large number of very early morning and late evening appointments were required. A further factor contributing to interviews at such odd hours was the coincidence of schedule length and harvest schedules in the field bean and fruit areas. In spite of these conditions, cooperation was extremely high. Only five persons refused to be interviewed. This constituted a refusal rate of just over one

161. Misters David Lewis, Robert Hicks, Ellwyn Stoddard, Francis Sim and the writer completed the interviewing. The writer wishes to acknowledge his appreciation to these persons.

162. The small percentage for the remaining two interviewers was due to their early withdrawal to accept permanent professional appointments.

per cent based on the total number of persons eligible for interviewing, i.e., discounting those excluded by the fact of their unavailability.

A minimum of three calls,¹⁶³ including two call-backs, were necessary before excluding a residence from the sample. The day was construed as falling into three parts - midnight to noon, noon to 6 p.m., and 6 p.m. to midnight. Call backs were to be made during the two time periods which would round out a full day. At least one of the two had to be made on a day other than that of the original contact. All "first" refusals were revisited at least once by a field supervisor in an attempt to obtain cooperation. Persons who were not home but eliminated from any segment as non-farmers were so classified only when this status was verified by cross-checks with at least two neighbors.

The final disposition of the original sample drawn is summarized in the working tabulation, Table 1-W, Appendix A. The cases used in this study are distributed as in Figure 1.

Sample Representativeness

The present study, in general, is not claimed to represent any parameters other than those for the sample itself. There will be no

163. In an effort to obtain complete coverage in the sample areas up to eight call-backs were actually made. Maximum limits were flexible depending primarily on the time-cost feasibility involved. Generally each of the 31 primary sampling units was worked by the interviewers as a group. Under these circumstances the first persons encountered in a segment generally would receive more call-backs than those visited last. Since there was no set order for beginning the enumeration of a segment, any biases inherent in the procedure should randomize out over the entire sample.

attempt to ascertain the probable distribution of structural types in the Michigan farming population. Only the relationships among structural elements with respect to their possible bearing on the uses made of market news will be investigated. It is assumed that the variables under consideration go together in "determining" the dependent behavior (i.e., functions) in finite and reasonably limited ways.¹⁶⁴ For this purpose it is only necessary to have sufficient numbers in each cell of the factorial to obtain reasonable stability in the interactions among the independent variables. Thus, complete representativeness of the sample for the Michigan farm population, while imperative for estimating the distribution of structural types, is less important for the goal of this analysis.

It is true that a sample which accurately reflects the distribution of lower peninsula Michigan farmers in the factorial would enhance confidence that the cases also represent reliably the true relationships of the study variables in this population. Certainly, with complete representativeness the typicality of the variable relationships would be maximized for the given sample size. This matter is significant in light of the sampling design utilized.

Kish has observed that with cluster sampling, "The individuals in these sampling units tend to resemble each other -- there is usually some homogeneity of characteristics, of attitudes, of behavior."¹⁶⁵ On this suggestion, an analysis of the variance in the

164. See the discussion of structural constraint, chapter one.

165. Leslie Kish, "Confidence Intervals for Clustered Samples," American Sociological Review, vol. 22 (April, 1957), p. 155.

dependent scores was conducted, in which the secondary sampling segments were used as the criterion for classification, Table 1. As can be seen, the F tests are statistically significant. From this it can be concluded that there is greater variability among than within the

Table 1 - Analysis of Variance for Total, Latent and Manifest Score Classified by Secondary Sampling Units.

Score and Analysis of Variance Item	Sum of Squares	Degrees of Freedom	Mean Square	F ratio ⁺
Total Score				
Total	2,155.90	345		
Among	674.03	79	8.53	
Within	1,481.87	266	5.57	1.53**
Latent Score				
Total	939.37	345		
Among	266.04	79	3.37	
Within	673.33	266	2.53	1.33*
Manifest Score				
Total	767.93	345		
Among	230.64	79	2.92	
Within	537.29	266	2.02	1.45*

⁺ F ratios are read from tabular values of 75 and 200 degrees of freedom respectively for the greater and lesser mean squares - the closest tabular values available and the most conservative under the circumstances. The F values for the latent score are on the borderline of statistical significance. With 200 degrees of freedom the F value associated with an .05 probability level is 1.35; with 400 degrees of freedom, the next closest tabular value, the same F value is 1.32.

classes.¹⁶⁶ In other words, there is a tendency, significantly above chance, for persons within sampling clusters to be more similar in score than people in different clusters.

166. In the analysis only those segments were used that had two or more schedules completed. Necessarily there would have to be complete agreement on score for only one case. Ten secondary sampling units contained but one eligible respondent. Three units yielded no interviews.

The significance of this is not clear. It is conceivable that the "homogeneity" in the dependent variable is attributable to similarity in structural types. The data available were not satisfactory to test this possibility. There are 80 secondary sampling units with two or more respondents but, almost 40 per cent (31) contain only two or three cases. Without being able to justify any ordering for the sampling units besides nominal distribution, only lower power statistical measures could be applied.¹⁶⁷ A chi-square goodness of fit test was not possible since the data did not meet the criterion that no expected frequency be smaller than one or that no more than 20 per cent be less than five.¹⁶⁸ Use of the binominal test for each secondary sampling unit with an assessment of the probability of the occurrence of the number of significant tests actually obtained was not warranted. A binominal test, under a hypothesis of $p=q=\frac{1}{2}$ and with no direction predicted, can never show statistically significant differences for samples of three.¹⁶⁹ Extrapolating from the remaining cases is not valid because of the large amount of data necessarily excluded.

167. See Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences, New York: McGraw-Hill, 1956, especially chapter 3, pp. 18-34.

168. W. G. Cochran, "Some Methods for Strengthening the Common X^2 Tests," Biometrics, vol. 10 (1954), pp. 417-451.

169. See Siegel, op. cit., pp. 38-39.

It was the writer's impression that some structural dimensions, particularly those of interpersonal relations and rationality, occasionally showed striking homogeneity within sampling segments but that, on the whole, homogeneity was only moderate. ¹⁷⁰

It may be surmised that homogeneity within segments with respect to the number of functions served is probably not due to homogeneity in structural assignment. Territoriality as such, or as a correlated index to other variables, is another variable whose relationship to market news might be investigated in future research. It could receive no further consideration in the present study.

Of course, and finally, it should be noted that the similar sums occurring within segments might have been based on sharply different structural components. It is this interpretation which is made for the remainder of the analysis.

If the dissertation was concerned with making estimates of the distribution of structural types in Michigan, the possible biasing effect of cluster sampling would be highly important and limiting. Even with the more modest, exploratory goal of the present analysis it retains some of its significance, for it is assumed that the cases in any cell of the basic factorial give a reasonable representation of both the range and the interaction of the independent variables. With

170. See working Table 2-W, Appendix A, for support of this observation. This conclusion is given some further weight by the fact that the F values obtained were not extremely large.

significant homogeneity in the secondary sampling segments, the actual number of cases which are viewed effectively in the study is possibly less than it would be if a simple random sample design had been used for selecting individual farmers.

There is no way of assessing adequately the biasing effect of the cluster techniques used here. While it is possible that this is minimal, following Keyfitz's suggestion,¹⁷¹ an altered within-class error expression will be used as a "safety" feature in computing the significance of differences in mean scores.

Indices: Independent Variables

It was assumed that each of the independent variables would yield scales by Guttman scaling techniques.¹⁷² This preference was reflected in the study design. It was indicated previously that, ideally, the structural dimensions should be independent to maximize predictive knowledge. Scale analysis is particularly geared to seek out and test the assumption of unidimensionality in a composite set of qualitative data. Scale analysis, "affords a procedure for ordering individuals or groups along a single dimension, at the same time testing the assumption that the several acts or items 'hang together' to represent

171. Keyfitz, op. cit., pp. 476-477.

172. For a detailed discussion of these procedures see S. Stouffer, et. al., Measurement and Prediction, Princeton: Princeton University Press, 1950, particularly pp. 3-19, 60-90. Hereafter the terms "scalogram analysis", "Guttman techniques" and "scale analysis" will be used interchangeably.

a unitary concept."¹⁷³ Of course, unidimensionality is not equal to independence. It is vitally interrelated, however.

Unidimensionality, in the sense that a number of different types of behavior go together throughout a sample in a given "step" pattern does not indicate whether the behavioral universe i.e., a structural dimension, is correlated with a second set defined as structure. But, it seems reasonable to suspect that if each of the independent variables is shown to be unidimensional, and if the behavioral areas so defined are different substantively, a minimum of spurious correlations will result and a maximum of prediction under the given conditions will be achieved.¹⁷⁴ Each of the structural dimensions should yield

173. J. W. Riley, Jr. "The Sociological Variable," in Riley, Riley and Toby, Sociological Studies in Scale Analysis, New Brunswick: Rutgers University Press, 1954, p. 18.

174. The problem of "independence" needs to be carefully considered. Statistical independence refers to the simple fact that "the occurrence of one [event] does not affect the chance of the occurrence of the other." (Anderson and Bancroft, op. cit., p. 12). Under the conditions of present limited knowledge, efforts are usually made to obtain independent variables that are independent in the statistical sense but which are correlated highly with the "dependent" behavior. However, the notion of system demands statistical dependence for the so called "independent" variables of usual variable analysis models. The level of one factor must, in a systemic model, set the level of all others. This is true for any and all delineatable aspects of the system. The current assumption, which this study does not vitally contradict, is that maximum knowledge is attained if variables are selected which are relatively uncorrelated so that while they may indeed be part of a systemic model, the rate of change in one of the variables means that the other "independent" variables change so little as to be, for all practical purposes, considered as statistically independent. The loss of knowledge for true systemic behavior inherent in this process needs to be constantly recalled.

correlative material not contributed to by the others because each is a different phenomenon. Without knowing that an "independent" variable is unidimensional one is less sure that the correlations of any independent variables x and y with any dependent variable z are not due to the fact that x and y are essentially measuring the same thing. This condition is minimized when the independent variables are unidimensional rather than multidimensional.

Scale analysis is not the only procedure for assessing the unitary nature of a concept and its derivable indices. However, as Guttman says, "one of the contributions of scaling [i.e., scalogram theory] is to do away with untested and unnecessary hypotheses about normal distributions,"¹⁷⁵ which adhere in such alternatives; procedures intended specifically for quantitative variables.¹⁷⁶ The variables of the research are conceived of as primarily qualitative.

It was apparent that all the independent and control variables could be included in the analysis only if each was in some way dichotomized. The use of Guttman scales to define the variables of interest provides a reasonable basis for dichotomizing. Each of the scale types produced by valid Guttman scaling is separable from types either higher or lower than it in the rank terms of the dimension

175. Measurement and Prediction, op. cit., p. 71.

176. See ibid., pp. 172-212 for a discussion of factor analysis, regression and other product-moment series statistics in relation to scale analysis. Note also J. W. Riley, Jr., "The Sociological Variable," op. cit.

from which the scale is built. "The scalogram hypothesis is that the items have an order such that, ideally, persons who answer a given question favorably all have higher ranks on the scale than persons who answer the same question unfavorably."¹⁷⁷ In other words, "people in higher scale positions have all of the characteristics of people in lower scale positions plus at least one additional positive response."¹⁷⁸ The points for dichotomization must follow the lines of the data, *i.e.*, must occur at a "natural" break in the variables. The separation for contingency analysis by Guttman technique is less capricious than that involved in most other forms.

The problem of cutting points is, of course, broader than the design of the current research. It is at the heart of attribute analysis generally as well as with tests of significance specifically. Selvin correctly notes that:

... an attribute or a scale with several values, such as a nine-point scale of ideological sensitivity, can be dichotomized or trichotomized by using several different cutting points, some of which may increase the correlation between the scale and another variable, while others may reduce it. In fact, one occasionally finds a table where the direction of the association can be changed by shifting the cutting points.¹⁷⁹

He argues then that,

177. The American Soldier, *op. cit.*, p. 9 (italics removed).

178. E. A. Suchman and Roy G. Francis, "Scaling Techniques in Social Research," in John T. Doby (ed.), An Introduction to Social Research, Harrisburg: The Stackpole Company, 1954, p. 129.

179. Selvin, *op. cit.*, p. 527.

In such cases, where the analyst can drastically alter the apparent relationship between the variables by manipulating the cutting points Why test for statistical significance when even the very direction of the results is in question? 180

There can be no question that the determination of cutting points is a serious problem. Selvin suggests that, "combining the rows or columns of a contingency table is legitimate only when the table is isotropic or can be made isotropic by re-arranging rows or columns." 181 This is only of value after the relationship between factors is obtained. How does one go about maximizing the chances that categories of variables will be collapsed legitimately? Or, should one never collapse categories and simply abandon data when relationships are not isotropic? It is this study's contention that the need for separation of variables for contingency analysis and their review by tests of significance is: (1) legitimate, on the basis of previous argument¹⁸² and (2) enhanced by the Guttman technique.

It is true, of course, that little can be done before the fact to assure obtaining isotropic tables. Isotropy is a matter of the joint distribution of two variables in a population.¹⁸³ Unidimensionality refers to the nature of the content of a single variable. Even

180. Ibid.

181. Ibid. (*italics added*). See G. Udny Yule and M. G. Kendall, An Introduction to the Theory of Statistics, London: Charles Griffin Company, 1948 (13th ed.), pp. 71-74 for a discussion of isotropic tables.

182. See pages 47-53.

183. Yule and Kendall, op. cit., pp. 71-72.

with two unidimensional attributes, their joint or correlative occurrence may take any form -- linear, curvilinear or random. However, under the conditions of a true Guttman scale, the variable defined unidimensionally must be cumulative in its distribution function. If a second variable in a contingency table is perfectly correlated with the first, defined by Guttman technique, then an isotropic table must result. If the correlation is not perfect, then, for certain purposes, cutting point selection can be drastically affected and the possibilities for collapsing data confounded. However, it is still true that the operational definition of an "independent" variable by scalogram procedures maximizes the possibility of isotropy because it defines half the table in cumulative terms. Isotropy is essentially a cumulative property in a joint distribution. While defining the second variable in a contingency analysis independently in cumulative terms (i.e., a Guttman scale) does not necessarily help obtain isotropy, it does not hinder it either. In any case, the previously cited advantages of Guttman scaling would justify the use of it for all the independent variables apart from this argument for isotropy. With respect to that phenomenon, the small advantage offered toward objectivity is not to be minimized in social science research.

There is still another advantage in the use of Guttman scaling.

Knowing that questions of similar content scale together shows them to be measuring a single attitude or opinion [or other] variable and warns one against attempting to interpret them as measuring different (albeit related) variables on the basis of their manifest content. The

warning is particularly appropriate when one is attempting some "causal" connection from a cross tabulation. 184

A simple "correlates" analysis can include items as "independent" variables which are merely aspects of the same phenomena, or in scalogram terms are items in the same behavioral universe. Working with these component items increases the possibilities of spurious correlation, as previously understood.

Social Relations and Rationality

Although attempts were made to scale all five variables, only three met the criteria of acceptable scale. These included rationality, relations with dealers, and relations with neighbors. The items included in each scale, the scale types, and their distribution are given in Tables 2, 3 and 4.

Both scales for intimacy are read downward. Scale type I represents a completely diffuse relationship while its linear opposite represents the maximum in specific and socially distant relations as measured in the study. In terms of "intimate" response frequencies, the relations with both neighbors and dealers for the sample as a whole tended toward the distant and specific rather than the diffuse. Almost one-third of the sample did not consider their dealer even an "acquaintance," the most frequent type of diffuse behavior. Similarly, just under one in five did not ever visit with their neighbors. The specific-distant tenor of relations was particularly true for the

184. American Soldier, op. cit., pp. 154-155.

Table 2 - Scale of Intimacy in Social Relations with Dealer or Dealer-Surrogate.*

Number	Items (Descending order of degree of intimacy)	Response	
		Intimate (+)	Distant (-)
1	Engages in recreational activities with dealer	Yes	No
2	Sees dealer socially outside place of business	Yes	No
3	Personally knew dealer before doing business	Yes	No
4	Knows location of dealer's home	Yes	No
5	Manner of addressing dealer	Nickname or first name	Other
6	Considers dealer	Friend or acquaintance	Comparative stranger

Ideal Scale Types	Item Number and Pattern of Response						Number of cases	Per cent of Total in the Type
	1	2	3	4	5	6		
I	+	+	+	+	+	+	23	6.5
II	-	+	+	+	+	+	46	12.9
III	-	-	+	+	+	+	35	9.8
IV	-	-	-	+	+	+	102	28.6
V	-	-	-	-	+	+	32	9.0
VI	-	-	-	-	-	+	12	3.3
VII	-	-	-	-	-	-	106	29.8
Total							356	100.0

* Dealer-surrogate was defined as any employee of a dealer with whom a respondent had regular contacts if no relationship at all was maintained with the owner or other managerially responsible person. An example of a surrogate frequently encountered with dairy farmers was the milk hauler or route driver. Such a person, however, representing the buying organization constitutes the personification of the contracting or buying organization to the respondent and in this sense is interchangeable with the dealer status.

Table 3 - Scale of Intimacy in Social Relations with Neighbors.

Number	Items (Descending order of degree of intimacy)	Response	
		Intimate (+)	Distant (-)
1	Lend farm equipment or supplies	Yes	No
2	Plan and execute joint trips to town	Yes	No
3	Do small errands for others in town	Yes	No
4	Visit with one another	Yes	No

Ideal Scale Type	Item Number and Pattern of Response				Number of cases	Per cent of Total in the Type
	1	2	3	4		
I	+	+	+	+	41	11.5
II	-	+	+	+	80	22.5
III	-	-	+	+	53	14.9
IV	-	-	-	+	118	33.1
V	-	-	-	-	64	18.0
Total					356	100.0

Table 4 - Scale of Rationality in the Use of Supplementary Resources in the Agricultural Operations.

Number	Items (Descending order of degree of rationality)	Response	
		Rational (+)	Non-rational (-)
1	Computes net return per acre or animal	Yes	No
2	Attends demonstrations and field days	Yes	No
3	Reads Extension or Experiment Station publications	Yes	No
4	Participates in county agent program, visits with county agent or seeks direct advice at M.S.U.*	Yes	No
5	Nature of bookkeeping	Book of some sort kept	No books or retains only receipts

Ideal Scale Type	Item Number and Pattern of Response					Number of cases	Per cent of Total in the Type
	1	2	3	4	5		
I	+	+	+	+	+	38	10.7
II	-	+	+	+	+	32	9.0
III	-	-	+	+	+	42	11.8
IV	-	-	-	+	+	38	10.6
V	-	-	-	-	+	90	25.3
VI	-	-	-	-	-	116	32.6

* A positive response to any one of these behaviors was scored as a rational response.

dealer. The distribution of cases in "intimate" categories was consistently below that for the neighbors. This is so in spite of the fact that the dealer scale was taken with regard to route drivers or milk haulers for any respondent who claimed to know absolutely nothing about his dealer. These characterizations for relationships with both neighbors and dealers accord with notions of the increasing segmentalization and urbanization of rural areas and with the subsequent tendency for social relations to move from diffuse to specific types.¹⁸⁵

The scale for rationality is also read downward. Those persons availing themselves of all supplementary resources in the pattern defined were considered the most rational while those using none of the resources were considered the least rational. On the basis of the distribution of cases, the sample members can be characterized as somewhat non-rational in their orientation to the vocational aspects of agriculture. For instance, fully a third of the sample members did not so much as keep a set of accounting books, irrespective of its accuracy. In contrast, only slightly more than one in ten computed net returns on a work unit of acres or animals. This non-rational characterization in general accords with other recent studies.¹⁸⁶

185. See Lowry Nelson, "Rural Life in a Mass-Industrial Society," Rural Sociology, vol. 22 (March, 1957), pp. 20-30; O. D. Duncan, "Rural Sociology Coming of Age," Rural Sociology, vol. 19 (March, 1954), especially pp. 8-12; John L. Haer, "Conservatism -- Radicalism and the Rural-Urban Continuum," Rural Sociology, vol. 17 (December, 1952), pp. 343-347.

186. See James H. Nielson and R. F. Bittner, Farm Practice Adoption in Michigan, East Lansing: Michigan State Agricultural Experiment Station, Technical Bulletin 263 (January, 1958); A. Dean, H. A. Aurbach and C. Paul Marsh, "Some Factors Related to Rationality in Decision Making Among Farm Operators," Rural Sociology, vol. 23 (June, 1958), pp. 121-135.

However, a more careful evaluation needs to be made of this and the other two scales.

The evaluation of Guttman type scales involves both substantive content and formal methodological criteria. "Scale analysis as such gives no judgment on content; it presumes that the universe of content is already defined, and merely tests whether or not the area is representable by a single variable."¹⁸⁷ Content has few guides for evaluating except for the nebulous, and hence controversial, "face validity." Indeed, Suchman, in evaluating the utility of scale analysis, remarks, "there is no way to decide whether or not an item belongs to the universe, except through a decision on the part of the investigator or a group of judges."¹⁸⁸ While the three scales are not composed of all the possible items in the universe of attributes,¹⁸⁹ it does seem reasonable to include each item in the field for which it is defined.

All the behaviors included in the rationality scale are, in intent, if not effect, meant as rational means of increasing or maintaining earnings from the farm. All the items in the social relationship scales are clues to the scope of the actor's interest in the relevant other. This is the pith of the diffuse-specificity dimension.¹⁹⁰

187. American Soldier, op. cit., p. 85.

188. Ibid., p. 187.

189. For a discussion of this point see ibid., pp. 80-82.

190. The Social System, op. cit., pp. 65-66.

It should be recognized further that the study was not intended as an investigation of the limits of the attribute universes defined as structure. No unequivocal conclusion as to the unidimensionality of the universe within the time-space population represented by the sample is intended. Scale analysis was adopted only because it offered an efficient, objective means for building structural typologies. It is possible that an item, especially one not investigated, may be scalable in more than one attribute universe.¹⁹¹ This should not detract from the present types, except in the possibly constructive sense of allowing more useful and predictive types to emerge if the structural dimensions are poorly conceived.

The methodological criteria are more objective but far from unequivocal. In Table 5 the results of a variety of tests of the existence of valid scalogram patterns in the three scales are summarized. Each scale has a coefficient of reproducibility well above the .900 minimum proposed by Guttman.¹⁹² While this measure of the amount

191. In the literature on scale analysis, particularly in Guttman's work, it is implied that an item must be unique in behavioral content so that it is assignable to one and only one universe of attributes. See pp. 83-85, The American Soldier. This makes more tenable the basic assumption (and claimed advantage) of scale analysis that the rank order of individuals in a sample, "exists not only for the given series of questions, but is the same as the rank order that would be obtained with any other series of questions in the same area." (p. 154, The American Soldier). Such an assumption of invariant order, while the ideal, is not crucial for a pragmatic methodology.

192. The American Soldier, op. cit., pp. 77-78 offers a discussion for the measure. It is determined by the following formula:

$$1 - \frac{\text{number of scale errors}}{\text{number of questions} \times \text{number of respondents}}$$

Table 5 - Criteria for Evaluating the Guttman Scales.

Criterion	Scale		
	Dealer	Neighbors	Rationality
Coefficient of reproducibility	.968	.945	.929
Coefficient of reproducibility in a chance pattern	.880	.890	.867
Range of marginals (% "favorable")	6.7 - 68.9	16.5 - 76.6	15.4 - 64.4
No. of items between 40% and 60%	1	1	1
No. of items less than 90% reproducibility	0	0	1
No. of items failing on "improvement"	0	0	0
No. of non-scale groupings with N 18	0	1	1
Per cent of total cases non-scale	16.8	20.7	31.9

of deviation from an ideal scale pattern is the "principal test," it supposes that other conditions have also been met.¹⁹³ Not all items can have extreme distributions of sample cases among their categories.

The reproducibility of any individual item can never be less than the percentage of respondents falling into a single answer category of that item, regardless of whether or not a scale exists attempts should be made to include in the sample as wide a range of marginal distributions as possible, and specifically to attempt to include items with marginals around 50-50. ¹⁹⁴

Rows 3 and 4 of the table show that these conditions have been met.

193. Ibid., p. 78. Generally, the characteristics of the scale with respect to the remaining criteria for scalability are not reported.

194. Ibid.

It has been suggested also that each separate item in the scale should have a reproducibility not much below .90.¹⁹⁵ Only one item in the three scales, row 5, failed this criterion and its reproducibility was .888.

Two further, related criteria are important. Guttman notes:

... for any item whatsoever, whether it belongs to a scalable universe or not, the reproducibility cannot be less than its highest category frequency Hence, it is important to guard against spuriously high sample reproducibility for items which have modal categories which contain a vast majority of the population Not only much reproducibility of each item be high from the trial scale score, but the scale error must be at most half of that which would be obtained without knowledge of the scale pattern, that is, from the modal frequencies alone.¹⁹⁶

Row 6 shows that all the items passed this test. Similarly, a chance reproducibility coefficient can be defined. It involves comparing, "the actual amount of total error with the amount of error to be expected by chance, given the marginals of the items in the scale under consideration."¹⁹⁷ Row 7 shows the values obtained. In every instance they are lower than the reproducibility coefficients actually obtained. Hence, there is less deviation from the pure types (i.e., "error") in the scales as constituted than one would expect on a chance basis. All of these test results support the methodological adequacy of the scales.

195. Ibid., p. 287. See also, S. A. Stouffer, E. F. Borgatta, D. G. Hays and A. F. Henry, "A Technique For Improving Cumulative Scales," in Scale Analysis, op. cit., p. 373.

196. American Soldier, op. cit., pp. 287-288.

197. Riley, Riley and Toby, Sociological Studies in Scale Analysis, op. cit., pp. 317-318. For a full explication of the procedures see pp. 317-320.



The pattern of error is another criterion for evaluating scales, though its application is less clearly delineated. It is contended only that, "the pattern of error should be inspected to see that there are no substantial non-scale types of persons."¹⁹⁸

Suchman does indicate, in discussing an example using a sample of 100, that five or more respondents with a non-perfect pattern constitute a non-scale type.¹⁹⁹ By linear extrapolation, 18 or more cases in the present sample would indicate a "significant" non-scale type. Row 7 indicates that one such grouping emerged in both the Neighbor and Rationality scales. Should these scales be accepted? The Rutgers' studies, perhaps the most comprehensive in scope and method, recognize this five per cent non-scale criterion explicitly but in practice repeatedly ignore it so long as not more than one or two such groupings appear.²⁰⁰ That procedure will be followed here.

The number of response categories and the number of items used is the last criterion to be used and the most ambiguous. It is unanimously agreed that the more items used and "the more categories that can remain uncombined, the more credible is the inference that the universe is scalable."²⁰¹ Any minimum level is unstated. However, Guttman has noted that:

198. American Soldier, op. cit., p. 119.

199. Ibid.

200. Gf. Scale Analysis, p. 316 and pp. 88, 89, 91, 125, 134, 135, 179, 180, 236 and 237.

201. American Soldier, op. cit., p. 117.

At present it seems quite clear that in general the probability of finding a sample of items to form a scale by chance for a sample of individuals is quite negligible, even if there are as few as six dichotomous items in the sample and as few as one hundred individuals. 202

In practice, most research studies use about the number of items used in the present scales and often use much smaller sample sizes. Furthermore, it should be remembered that the intent of the scales was not to determine unidimensionality for the universe definitely but to provide a convenient and reasonably objective method for constructing structural typologies. Thus, while more items in each scale would be desirable, the scales actually obtained do appear as more than chance phenomena.²⁰³

Involvement and Commitment

Both these variables were originally conceived to be unidimensional in character with the possibility that commitment might have two related axes. As the analysis progressed it became clear that this assumption was not valid. Neither the involvement nor the commitment items could meet the formal demands of scale analysis. This conclusion was based on extensive investigation. A thorough examination was made of the items chosen to represent each attribute universe. Through a special

202. Ibid., p. 82.

203. The scales in each instance incorporated information from at least 50 per cent of all the questions in the schedule which were intended to solicit material for the scales. The majority of those questions were asked as simple dichotomies. Thus, under the practical research limits a fairly efficient use of available data was achieved. The validity of both the dealer and rationality scales are given some further credence by the fact that they followed the lines set out in an earlier study of a Michigan farm population. See Smith, Organization of the Farm, op. cit. Full comparability is not obtainable and should be interpreted cautiously given the warnings on the relativity of Guttman type scales. See American Soldier, op. cit., pp. 82-83; 168-170.

"count" board wired for the IBM "101" statistical counter²⁰⁴ it was possible to assess very rapidly the scalability for the items combined in a wide variety of ways. Even under these circumstances it was not possible to construct the desired scales. Further attempts to subdivide each variable into subuniverses yielded no satisfactory results. It seems reasonable to conclude either that the items chosen to represent both involvement and commitment are not good indicators or that both variables are not susceptible to unidimensional representation. The latter is a more tenable interpretation. These factors can be considered only as "focal" rather than unidimensional in character. The sense of this can be seen perhaps best with commitment.

Commitment was defined as the degree to which a person is

204. The wiring arrangement was devised by Mr. Sim and to the best of our knowledge is unique to him. It has not appeared in print. The method begins by punching all items construed as being in the universe onto IBM cards in the full array of categories of answers as originally coded. In the nature of the case, all the items were enterable on single columns. The count board was then wired so that any combination of answer categories for any column could be quickly made to be either a positive or negative response. However, each column had to be counted as a dichotomy in obtaining a total score for a respondent. The maximum number of items (dichotomized) that could be handled for any one scoring was 20. The number of columns used could be quickly changed by simply removing from the count board the lead wire of all the columns to be removed. The codes construed as "positive" or "negative" were almost as quickly changeable through altering the codes wired in series to either count (positive) or not count (negative). The 101 counts and distributes the respondents by total scores. Any scoring that provided reasonably distributed totals was run off by a second, specially wired board on the IBM type 407 tabulating printer. This produced a normally appearing scalogram type array which could be inspected for leads in recombining codes in columns; dropping or adding items. With the operator having an understanding of the criteria for valid Guttman scales, the procedure allowed extremely rapid evaluation of a large number of combinations and permutations of items scored in many different ways.

inextricably bound to agriculture as a vocation by any or all of a variety of factors other than those of preference and a sense of its worth and importance. The specific sources for high or low commitment might be varied. For example, age could be a factor making for commitment. The older a person is, the less likely will he be able to find employment outside agriculture even if he has skills necessary to such an alternative, or the desire to obtain such employment. Similarly, the number of jobs open to a person with more formal education is higher than for persons with less education, for the former has available all the jobs open to the person with less education plus some specifically denied to persons of little education. Similarly, a man with liabilities against the farm, other things equal, would tend to be less occupationally mobile than the person free of debt.

These factors are to some extent related to each other. For example, older people, in general, have less education and fewer debts than do younger people. If these three factors constituted items from a unidimensional attribute universe, knowledge of a person's age would also allow one to know, within a certain probability of error, the amount of education and his liabilities position through the usual conditions of scalogram prediction. Empirically, it is required that the relations between all variables be reasonably constant, jointly considered. However, if the relations depart from constancy then set patterns in scale terms cannot be obtained.

Approximate "homogeneity" can be attained through following a line of reasoning somewhat similar to that used in categorizing the depend-

ent variables.²⁰⁵ A number of behavioral items that apply to all respondents are selected and weights are assigned to each level of these factors. The position of each respondent with respect to each factor is then ascertained. Finally a count can be made of the number of items weighting toward commitment or not weighting toward continuance in agriculture. The "levels" of commitment derived in this way do not represent a single unidimensional phenomena. They represent intersects for a large number of attributes which might or might not be unidimensional themselves. Commitment, in this process, has become a focus, or intersect, of constituent elements that may or may not be completely similar. The counting procedure provides an approximate differentiation into "high" or "low" commitment which is all that is required for the analysis design. It does not make the dimension quantitative.

The criterion for selecting items indicating commitment was that of social "costs," specifically those that are economic. Leaving agriculture extracts a price from the individual who has no other skills. Transition to outside employment normally requires the expenditure of time, possible expenses for education, often less than maximal return for the economic means at one's disposal, and diminished possibilities to earn income by obtaining employment at all. Economic risks are involved in changing jobs. Certain related status features of any job

205. The similarity is in the use of counting as a first step in a heuristic process. It was assumed that the number of functions itself is a meaningful, indicative construct. Here we count as a convenient way of differentiating the underlying qualitative variable, "commitment."

tend to either lessen or enlarge the risks involved in job changes. For instance, the return for one's managerial skill obtained through farming is probably at its maximum in farming. While this skill could be used in certain areas outside agriculture, its greatest return is in farm employment. Furthermore, it can be assumed that there is a reasonably positive relationship between amount of experience and level of managerial skill, other things equal. Then, increasing years of managing farms for oneself means a greater loss if agriculture is left as a vocation. Hence, greater years of managerial experience is more committing than fewer years of experience.

The choice of the specific items used in the commitment index stemmed from an interesting professional development. Speaking about research in organizational participation, but with broader import, Beal has observed, "there has developed almost a traditional set of factors that are analyzed ... age, formal education, stage of family cycle ... [etc.]"²⁰⁶ Within the limited analysis characteristic of market news studies, these "traditional" variables have been the main sort factors used. They form the basis for use here, also, because all are subsumable under the economic cost idea.²⁰⁷

The present study used that set of nine such variables which: (a) could be interpreted most directly in economic costs terms; (b) were relatively independent and universal in applicability; and

206. George Beal, "Additional Hypotheses in Participation Research," Rural Sociology, vol. 21 (September-December, 1956), p. 251.

207. This does not mean that they lack relevance for other possible analytical variables. See the discussion pp. 43-44.

(c) had differentiating potential. Therefore, certain factors which might at first appear relevant were excluded. For example, acres owned or controlled was not used because its relation to commitment depends primarily on the type of farm involved. The same features for commitment are covered more adequately through joint consideration of gross farm income and type of farm. In another case, tenure status and specific vocational training outside of agriculture were not used because they differentiated very little of the sample. Very few renters and very few persons with vocational agricultural training were included in the sample. Length of residence also was excluded. It was probably an important social cost factor in lateral, intra-agricultural moves because part of "successful" farming is in the building of a functioning network of personal relationships with neighbors, dealers, and other parts of the social organization of agriculture. Physical or intra-agricultural movements often sever such relationships. However, this network of "personal" relationships, built up through time and specific in its functions, is often of little utility or relevance for interoccupational transfers. Furthermore, a transfer out of agriculture does not necessarily imply as great a geographic movement as does intra-agricultural movement. The items used in the commitment index are given in Table 6.

Aside from item selection, weighting was also a crucial problem in constructing the commitment index. The procedure adopted was simple. Each variable was dichotomized. A weight of one was assigned to that side of the dichotomy that should be most heavily committing, and zero to the least heavily committing side. The commitment "level" was

Table 6 - Index of Commitment to Farming.

Item	Point of Dichotomization (Committing Category)
1. Age	Over 40 years
2. Formal education	Less than 12 grades completed
3. Number of dependents*	Four or more
4. Type of farm [†]	Dairy, part dairy, fruit, fat stock
5. Amount of gross farm income	Over \$7,500
6. Amount of total assets invested in farm	All
7. Farm has unpaid financial liabilities	Yes
8. Proportion of total income from off-farm work	Less than 1/2
9. Years managing farm for self	20 or more

Index Grouping	Number	Per cent
1	11	3.1
2	37	10.4
3	43	12.1
4	67	18.8
5	87	24.5
6	66	18.5
7	37	10.4
8	8	2.2
Total	356	100.0

* Includes children and aged parents.

[†] See Appendix A, Table 3-W, for the basis of this classification.

obtained by simply counting the number of "committing" factors each respondent possessed. The items were each dichotomized on the basis of the marginal distributions used in the preliminary Guttman scaling attempts. Cutting points were taken from the "best" plots which also made reasonable sense substantively. The points of dichotomization and the distribution by groupings are given in Table 6.

Subjective judgments played an important role in the construction of the commitment index since, as previously noted, none of the trial scale plots met minimal scale criteria. Choosing among "failures" in this sense is precarious and the more so for its recognition. That is, arbitrary weighting and selection of index items has a long and continuing record in sociological research. Of course, this is not to condone such "error," but only to indicate a further limit on the validity of the present analysis. However, the commitment index accepted does seem to have face validity. It can be used for the gross classification for which it is intended. The desirability of further work and refinement is obvious.

In this respect, a word may be said about alternative procedures of index construction. If each of the variables in the commitment index were basically quantitative, exact weights for each could have been ascertained by multiple regression techniques. However, this technique was not applied for a number of reasons: (1) The labor and time involved in handling the number of variables under consideration made the work unmanageable for the resources at hand. (2) Some of the variables were not recorded precisely even though they were quantitative, while others were not quantitative at all. (3) This procedure

would have interfered with the overall study design. Regression weights are set on the basis of predictive ability for a given dependent variable. A new weighting problem arises each time the dependent variable is changed unless all dependent variables have a perfect or near perfect joint distribution. Thus, while weighting through multiple regression is much more accurate than any other procedure, it can be totally inaccurate for a second dependent variable. Multiple regression weighting is highly specific. The overall research design required reasonably high generality for the operational definition of commitment. Hence, the decision was made to weight arbitrarily and count.

The last independent variable to be operationally specified is involvement. It refers to the actor's conscious awareness and evaluation of his own psychological relationship to farming as a work role. It is manifested in the degree to which an individual shows a preference for and identifies with his occupational role in agriculture. It seems reasonable to expect that those persons who are highly involved in their work role would show a preference for staying in agriculture and would generally be willing to name agriculture as their preferred choice if they could relive their careers. Similarly, persons highly involved in their work would tend to describe that activity in complimentary terms and avoid, ridicule or devaluation of the role. The need for favorable response to one's self by others is well known. Since such responses are in terms of shared norms and symbolic meanings, persons asked to describe farming should select those phrases

which reflect the most positive evaluation.²⁰⁸

Both of these ideas were centrally involved in operationalizing involvement. The respondents' job preferences were sought in direct and indirect questions. A check list of opposed adjectives was used to elicit respondents' descriptions of farming (Question 17, Appendix B). After the check list was completed, respondents were asked which single adjective most aptly described farming as a job and which was the most misleading. "Complimentary" adjectives included: creative, healthy, interesting, own boss, takes brains, takes special skills, clean and good paying. "Derogatory" adjectives were: routine, unhealthy, boring, tied down, don't have to be smart, anyone can farm, dirty and poor paying. It was assumed that positively involved respondents would select complimentary phrases as best describing the job and negative adjectives as most misleading.²⁰⁹

Positive involvement also was assumed to be a condition of long standing even though its intensity might change through time. Persons who are highly involved with their work role should not only prefer farming in a hypothetical situation but also should have demonstrated this by their own behavior. Given a choice of entering or not entering agriculture they should have shown a preference for the agricultural

208. Contu, op. cit., has built an entire social psychological system about the core of selective perception symbolically mediated in light of group norms. See his discussion for the full development of this position and its implications. See Robin Williams, Jr., American Society, New York: Knopf, 1951, for an account of the value premises in American society.

209. The concept of saliency underlies this assumption. See Theodore W. Newcomb, Social Psychology, New York: Dryden, 1950, pp. 151-153.

role and, when given a chance to reconstruct their entrance into farming, they should express positive feelings about the situation.

Information regarding respondents' entry into agriculture was elicited. The respondents were asked if they had preferred any jobs to farming when they began farming for themselves. They were asked also to reconstruct the train of events by which they came to farm. The responses were examined for indications of positive evaluations of agriculture. Positive responses included such remarks as: "the farm is a good place to raise a family;" "healthy work;" "secure, dependable job;" "I like it, enjoy it." Negative responses included such things as: "wife wanted it;" "hated the city;" "just grew up on a farm, stayed on." 210

The procedure for obtaining the involvement index followed closely that used for commitment and shares the weaknesses and strengths of that procedure. The items of the index, the points of dichotomization, and the distribution by classes are given in Table 7.

210. The fact that slightly over 50 per cent of the sample claimed the last as the manner by which they entered farming in part negates the assumed long standing qualities of involvement. In order to discount this, as well as to more heavily accentuate the emotive aspects, the selection of the most descriptive adjective was weighted double the other items.

Table 7 - Index of Involvement in Farming.

Item	Point of Dichotomization (Involvement Category)
1. How respondent got into farming	Passive acceptance or coerced*
2. When began farming would have preferred other type job	Yes
3. Would now prefer another type of job more than farming	Yes
4. If had chance to relive past would choose farming again	No
5. Most descriptive phrase for farming ⁺⁺	"Derogatory"
6. Least descriptive phrase for farming	"Complimentary"

Index Grouping	Number	Per cent
0	11	3.1
1	34	9.6
2	68	19.1
3	83	23.3
4	77	21.6
5	53	14.9
6	30	8.4
Total	356	100.0

* Multiple response possibility. A single positive response classified person as positive on the item.

⁺⁺ Weight is double all other items.

Indices: Dependent Variables

The functions of market news investigated were classified according to a manifest-latent distinction defined from the USDA viewpoint. "Scores" were independently computed for each and then combined for a joint "functionality" score.²¹¹ The rationale for counting and adding the functions has been discussed previously. The exact nature of the items entering each score and their limitations shall be considered now.

As operationalized, the structural "item" from which the functions were assumed to follow was the information characteristically disseminated by the USDA Market News Service and transmitted through the mass communication media.²¹² However, in the overall research design that "item" was not easily or always available for examination. One of the questions that the overall research design intended to answer was the degree of congruence between the USDA definition of market news and farmers' definitions of this data. Farmers' definitions might or might not coincide with market news as it is construed in the formal programs of the USDA. When definitions were not congruent, the interview situation was more meaningful when the questioning as to the

211. In line with the exploratory nature of the study, this was done in order to increase the scope of possible significant relationships between the structural variables and the "functions." The product-moment correlation for number of manifest and number of extent items for respondents was only +.243.

212. The contract nature of the research strongly dictated this. The evidence of the sources for market news as found in the study supported this interpretation.

functions of market news was based on the respondent's definition.

If the definitions were congruent, then the "item" for functional analysis had to be "directly" functional if it was scored for functionality. In cases where market news was defined as broader than the formal program of the USDA, the formal program of the Market News Service might contribute the specific information which was serving a function or it might come from those aspects outside the formal USDA program. In the latter case, where any function was served, the formal Market News Service program had the possibilities of being totally and solely responsible for it, of contributing to it, or finally, of being irrelevant. The available data did not permit the separation of these possibilities. However, this does not impair the research findings. It merely means that "market news" should not be equated with the Market News Service.

Manifest Score

An eight item manifest function score was used. The largest part of these items was taken from a series of questions which attempted an exhaustive reconstruction of the respondent's last sale of what he considered to be his main product.²¹³ The main product might or might not be the product which provided the largest amount of the gross farm income. Primary importance was given to what the respondent defined as his main product. This was done in order to: (1) increase his involvement in a rather lengthy interview; (2) increase the chances

213. See questions 23-31 of the schedule, Appendix B. For detailed information on scoring see Smith and Sim, op. cit., pp. 93-107.

that more details about the sale would be remembered; and (3) maximize the possibility of finding market news' utility.²¹⁴

When the main product did not lend itself to questions about economic decision-making functions, careful directions²¹⁵ indicated the product to be used. For instance, a farmer who indicated milk as his main product was not asked about his last "sale" of milk. Milk is marketed on a continuous, daily basis and, hence, "last sale" would be both ambiguous and meaningless. Furthermore, no formal USDA market news exists for fluid milk or other continuously marketed items. In this situation a cash "crop" such as grain or cull cows was selected. Questions about economic decision-making were never referred to continuously marketed products.

The last sale was probed to see whether the market news indicated as generally received was used in deciding: (1) the time of sale, (2) the place of the sale, and (3) the form in which the product was marketed. Any acknowledgement of market news as an aid, irrespective of its value, was scored separately as serving a function.

214. It was assumed that market news probably would serve more functions and be utilized more in relation to those products which were of greatest interest to the respondent. Standardization on the last sale assumed that the typicality of sales procedure and the role of market news therein would be high, though, of course, in certain particular cases atypical sales would be elicited. The decision to seek information about a specific sale in contrast to sales in general was predicated upon the facts that (1) the second procedure would compound any "articulate" bias in the schedule and (2) asking for the respondent to talk about specifics would probably elicit more valid information because people, in general, can recall specific information more accurately.

215. See pp. 1-2 of the schedule, Appendix B.

Time of sale was interpreted broadly. Originally it was assumed that timing of a sale could be distinguished from a decision about whether to break up a crop or lot or sell it all at once. However, the respondents indicated that, in general, timing and amount of product to sell at once were inextricably intertwined. Therefore, any affirmation that market news was considered in any way in deciding about either aspect of the sale was scored positively.

Other items (questions 29 through 31, Appendix B) allowed inferences as to whether respondents used market news information to check on the honesty and fairness of dealers in pricing. They also elicited respondents' dissatisfactions or satisfactions with the specific prices received. This last information is a possible index of respondents' feelings with regard to the price setting and marketing system in general. Both these functions are uses intended for market news by the USDA. A function was credited if the respondent indicated that he contrasted the price offered by his dealer with the price information contained in the market news he was receiving. Similarly, in ascertaining satisfaction with price, irrespective of its level, respondents were questioned as to why they felt as they did. Indication that market news helped create these feelings were scored as functions.

Information on both planned changes and changes actually made in the farm operation (size or type of enterprise, not production practices) in the past three years was obtained. The role of market news as a factor in such planning was probed and scored separately. It was assumed originally that the effect of market news on commitment could be separated from its other roles in the planning process, but this

was not possible. The detailed information needed for this separation was not recorded in many interviews, so the two related ideas were merged and scored as one function if the respondent indicated that market news information was considered in changes made in the past or considered for the future.

Finally, an attempt was made to ascertain whether it would make a difference to the person if he could no longer get any information about markets. A positive response followed by one or more reasons which indicated a manifest function was being served was scored as functional for the manifest total.

Latent Score

Latent scores were developed from information about nine such possible functions. Obtaining information about them was, perhaps, the most difficult aspect of the entire schedule, for in many instances the original definition of "latent" from the USDA perspective was also "latent" from respondents' standpoints. Respondent unawareness of certain functions for market news was brought out early in the testing of schedule sections. As a result, a variety of projective and indirect questions approaches was tested. None of these approaches showed marked superiority over direct questions skillfully probed in obtaining valid information.²¹⁶ In the final field schedule, then, most of the latent functions were ascertained through direct questions and probing, using examples of the types of behavior of interest. This possibly

216. See Smith and Sim, op. cit., pp. 90-93 for further discussion.

introduced cognitive bias as a cost. In any case holistic, depth study is needed to extend knowledge beyond the level that survey procedures permit.

The items used for "latent" scores were diverse and necessarily neither exhaustive of possible latent functions nor completely unique as to the form which might serve in a particular role. The latent functions were selected only for their range and probable relationships to the independent variables of the study. For instance, a behavioral item concerning the facilitation of interpersonal relations was developed. Respondents were asked whether they ever discussed market news information in the sense of a general topic much as the weather might be used. It was assumed that market news represents an impersonal topic around which sociable conversation can turn.²¹⁷ Not only is market news occupationally specific, but it bears directly on the financial aspects of work. Under these circumstances, its universality as a conversation piece should be virtually assured. Whatever the customary mode(s) of interpersonal relations, it seemed reasonable to expect that farm people would sometimes utilize market news in this way. When respondents indicated that they had used market news in this way they were asked to furnish details of a recent example in order to verify this claim. Since well over half of the respondents did furnish

217. See The Sociology of Georg Simmel, (trans. Kurt H. Wolff), Glencoe: The Free Press, 1950, chapter 3, particularly pp. 45-46; 51-53.

such examples, the claim was accepted even if no example was given.²¹⁸

The possible bearing of market news on occupational involvement was a second latent function examined. Respondents were asked whether how much they knew about markets and marketing affected how they felt about farming. Only persons who explicitly claimed in answering this question that information that they specifically defined as "market news" was involved in their current feelings were credited with having this involvement reinforcement function served. As is true for all the "score" items, the direction of the impact was not considered. The basis for including this function, aside from previous considerations, is the well substantiated relationship between knowledge, affect, and use for supplementary resources in agriculture.²¹⁹

Two somewhat similar "mental health" functions were hypothesized as possible consequences of market news exposure. Farmers operate in a business organization vested with rather high uncertainty. This is attributable to both the vagaries of the crucial weather factor and the generally small size of farms relative to processors plus the farm's

218. Questions also sought to ascertain whether market news, within this general sense of sociability, might be utilized specifically to stimulate a lagging discussion. The respondent was asked first whether he had ever been witness to such an occurrence or whether, secondly, he himself had used market news in this way. The correlations (tetrachloric) between this specific function and the item used was + .66 and that between witnessing and using market news as a conversation stimulant was + .84. For this reason only the one more general item was included in the latent score.

219. See George M. Beal, The Roots of Participation in Farmer Cooperatives, Ames, Iowa: The College Bookstore, 1954; R. C. Bealer, "Value Orientations and Behavioral Correlates of Producer-Patrons in Purchasing Cooperatives," unpublished Master's thesis, The Pennsylvania State University, 1953, especially pp. 14-17.

situation at the least subtle end of the processing chain.²²⁰ Under these circumstances it seems reasonable to expect a fairly high level of personal anxiety about the marketing situation would exist. Here the final measure of the quality of the year's performance will be reflected in the price received for the product. Market information is meant specifically to allay some of this uncertainty about price. A failure of market news information to coincide with the price offered to the individual could elicit two broad reactions, i.e., catharsis or succor.

If a discrepancy is viewed as major, it could trigger a release of hostility toward market news information because it is supposed to be authoritative and accurate. Thus, market news reports can be a convenient scapegoat for hostilities arising from other sources. Like weather forecasts, market news is a general description, hence highly prone to be in error as a description of the individual's experience.²²¹ Thus, its potentials for scapegoating are heightened. It is an easy thing to "pick on." In either case, the "failures" of market news can facilitate some cathartic effects. Instead of stimulating a release of hostility, the inaccuracy of market news information might serve

220. For a clear, concise exposition on this point substantiated as a global phenomenon, see L. W. Witt and Mordecai Ezekiel, The Farm and the City, Rome: Food and Agriculture Organization of the United Nations, 1953, especially pp. 9-16.

221. The reasons for this are many, ranging from message failure due primarily to the respondent's misinterpretations, to such inappropriate data as insufficient detail, covering all grades, and so on.

as a succor.²²² The individual can find relief and strength in the fact that the assumed "expertise" of the market reports can also be "wrong."

Admittedly, these possible functions for market news are difficult to assess in a survey interview. After considerable pretest, a direct series of channeled probes were devised (Question 22, Appendix B). A score for the "succor" function was given if the individual indicated that he was bothered by making mistakes, that he sometimes excused his mistakes by recalling that experts also made them, and that he had specific reference to market experts when he had such thoughts. Examples were sought to verify these claims. As might be suspected, only a small minority, 15 per cent, gave sufficient evidence of this function being served.

A score was given for the "catharsis" function only if the individual indicated that he "blew off steam" when things went wrong, that on some such occasions he picked on things that were not really bothering him, and that he had specifically used market information as such an unjust target. Examples were then sought to validate such claims. Less than eight per cent of the sample was scored as having this function served.

The fifth item in the latent score was market news' possible educational consequences. It was considered that over time the reception of market news information might serve as a means for

222. Though related conceptually, they were empirically independent. The tetrachloric correlation between the two items was + .12.

learning about such things as supply-demand-price relationships, price cycles and movements, and quality-price relationships. A direct question inquired as to whether the respondent believed he had learned anything of a general nature through the receipt of market news over time. An affirmative answer with an adequate example was scored as a latent functional, though this really only meant might have been responsible for the knowledge. Definite etiology was impossible to trace.

A somewhat clearer understanding was afforded for another aspect of the latent score. It is well known that, either at the level of the community or the small group, differentiation occurs and that social relations between the differentiated statuses is thereby either enhanced or discouraged.²²³ It is conceivable that knowledgeability with regard to market news might be a correlate of esteem. The criteria for assigning esteem tend to be those things most valued by or most functionally important to the group. Given the centrality of material well being in American culture and the relation of market news to efficient role performance for the farmer in his work, knowledge about markets might be a correlate of esteem in a farm population. One question bore directly on this possibility (Question 13.3, Appendix B). It was scored as a function only if the level of market news information

223. See John Useem, Pierre Tangent and Ruth Useem, "Stratification in a Prairie Town," American Sociological Review, vol. 7 (1943), pp. 331-342 for evidence of this at the community level. For research bearing on the point in small groups, see Henry W. Riecken and George C. Homans, "Psychological Aspects of Social Structure," in Gardner Lindzey (ed.), Handbook of Social Psychology, Cambridge: Addison Wesley, 1954, pp. 786-829.

was an active part of the respondent's evaluative processes. The question first inquired as to whether high esteem and knowledge of markets were correlated. Irrespective of this answer, the respondents were then pressed for the criteria by which they personally accorded esteem to other farmers. If knowledge about markets and marketing was included among the respondent's criteria, a score was given for this function.

The seventh item making up the latent score arose from the usual manner of obtaining market news. The widespread dissemination of market news through mass communication media enables the farm operator to be released from directly obtaining such information himself. A surrogate can perform the act. This "surrogate" function should be understood in a time perspective, where it is particularly striking.

Prior to the government sponsored program for market news and its mass distribution, knowledge about markets, if it existed from reasonable "first hand" sources, generally depended upon "knowing" persons who engaged in selling at central markets; "catching" the "string butcher" on his rounds and getting by his double-edged and often evasive answers on market conditions²²⁴ or, on similar exacting particularistic considerations. At present such particularistic relationships are less necessary in the information system. The point is not that the need for a surrogate might have changed through time, but only that

224. Part of the "string butcher's" profit depended on his ability to keep farmers in ignorance about going prices and, thereby, extract the rewards of a monopoly market. In this case it was a monopoly of information. This situation was also true of other such middlemen in the older agricultural market.

the reliability of the surrogate is increased by the fact that most of the market news information originates with the mass media and, hence, governmental sources. Score was given for this function on the basis of whether or not other persons in the house did regularly obtain market news as a matter of course or were specifically asked to obtain such information for the respondent.

A second function was also related to the formal structure of the market news dissemination program. Respondents were asked whether the USDA provided some or all of the information to the sources from which they received their market news. If they indicated some knowledge of the USDA's role in the system, an evaluation of the USDA's performance in that role was elicited. Respondents who indicated a belief that the USDA did operate in this capacity, irrespective of the nature of their evaluations, were credited with having this partial evaluation function of the USDA served by market news.

Finally, the omnibus question previously discussed was tallied for a latent function score if one or more responses to it indicated latent functions were being served by market news.

Before discussing the control variables, the limitations of the dependent variables may be summarized. The "functions" scores refer only to the types of behavior included and the representativeness of these is unknown.

Furthermore, respondents were not excluded if their behavior with respect to a function was unascertainable. The score for any individual is his maximum score ascertainable from the data available. The number of not ascertainable answers for the functions as a whole ran

slightly over three per cent and such answers did not appear to cluster in specific schedules. It seems reasonable to suspect, therefore, that information on the not ascertained functions would not greatly alter any conclusions drawn.

Indices: Control Variables

The content of market news information and the medium through which it was received were the factors controlled. The interview was designed to provide a richness of detail about both the sources of market news and the respondents' definitions of market news.²²⁵ The control indices cut across this detail rather simply. Since all of the variables in the analysis design could only be expressed as dichotomies, it was necessary to maximize the substantive significance of any dichotomization.

The variability in what farmers specifically considered as market news was great. This disparity was apparent irrespective of the level of specificity of the categorical system applied. Therefore, it was decided to dichotomize on the amount of detail rather than the type of content as such. The number of types of information included in the respondent's definition of market news was contrasted with the types of information contained in market news releases of the USDA. This USDA standard was interpreted as including price, supply, demand, and short-run changes, trends, and conditions (including market volumes)

225. See questions 4, 5 and 10, Appendix B; less directly note also questions 21 and 23-31.

for daily or weekly periods.²²⁶ Information falling outside this definition included: (1) price outlook, i.e., predictions and projections beyond a week in advance; (2) demand outlook; (3) supply outlook; (4) outlook of a mixed or unspecified nature; (5) futures markets; (6) long term reviews and trends; (7) marketing techniques and procedures; (8) production techniques and procedures; (9) costs of inputs; (10) government policy in relation to agriculture; (11) outlook for economic activity for the national economy; (12) current weather; (13) long-range weather forecasts; (14) farm group activities and meetings; and (15) other miscellaneous information. The two categories for control on content are those definitions which include only USDA items, and those which contain items not included in the USDA definition.²²⁷

The division into two groupings according to the media used as market news sources recognized the crucial role of interpersonal relations as a link between the mass media and individual recipients.²²⁸

226. No consensus on the meaning for market news could be obtained in discussion with the USDA representatives. The definition was taken from empirical evidence of the characteristic information disseminated by the USDA Market News Service and carried specifically by mass media as "market reports" or "market news."

227. Respondents were put into the category of "only USDA items" if they indicated no content categories outside of the USDA definition or one such item. The inclusion of the latter groups was necessary in order to obtain a somewhat even split between this grouping and its opposite and thus assure sufficient cases for all cells in the factorial.

228. See Katz and Lazarsfeld, op. cit.; Matilda White Riley and John W. Riley, Jr., "A Sociological Approach to Communications Research," in Schramm, op. cit., pp. 389-401.

Those persons who obtained their market news information solely through mass media sources were separated from those who received it from either mass media sources and more informal, personal sources or such personal sources only. The media defined as "mass" included radio, daily newspapers, television, magazines and weekly newspapers. Informal or personal sources included friends and neighbors, dealers, truckers, route drivers, and extension or other government personnel. The basis of the distinction was not the type of information likely to be received, its form or accuracy but, rather, the existence of the possibility for an immediate reaction to any information in human interaction and group process.

Chapter IV

Evaluation of the Structural Dimensions

Prior to examining any functional propositions about structural constraint, the operational definitions for structure need validation. That is the concern of the present chapter. The procedure for testing utilizes the factorial design applied by Keyfitz.²²⁹ However, before turning to the factorial analysis it is necessary to first inquire briefly into the problem of isotropy.

Isotropy in the Independent Variables

The most important limitation of the Keyfitz factorial design is the requirement of dichotomous independent variables. The general problem of dichotomizing continuous variables was considered in chapter two. Here the adequacy of the cutting points used in the factorials will be assessed.

A complete analysis as to whether the structural variables are isotropic with respect to functions scores would require setting out each structural dimension against the complete array of scores and assessing the association of each "elementary tetrad."²³⁰ This would

229. Keyfitz, op. cit.

230. See Yule and Kendall, op. cit., pp. 71-74. Isotropic tables are those in which the ratio of all $(A_m B_n)/(A_{m+1} B_n)$ terms in comparison to the $(A_m B_{n+1})/(A_{m+1} B_{n+1})$ terms have the same association -- positive, negative, or zero.

The terms A_m and B_n have the following meaning, as an example:

Latent Score = n	Level of Commitment = m		
	High	Medium	Low
0	$A_m B_n$	$A_{m+1} B_n$	
1	$A_m B_{n+1}$	$A_{m+1} B_{n+1}$	
2			



be extremely tedious and would only bare the visible fact that the structural variables are not isotropic.²³¹ That is, even one inverted tetrad, for example, in the 84 possible elementary tetrads of the commitment-total score table destroys the possibility of isotropism. Furthermore, the tables could not be made isotropic by rearranging the levels of the independent variables for this would violate the sense of the Guttman scale types. What conclusion can be drawn then?

To dismiss the data as useless seems unrealistic. In fact, non-isotropic relationships are quite frequently used in sociology. They seem to form the general norm.²³² Certainly isotropic relations between the structural variables and the dependent variables would make conclusions drawn from this study less risky, particularly from the factorial analysis where dichotomization is necessary. But, perhaps high risk is inherent in social science research and the more so when refinement of variables is attempted.²³³ The least that can be done, in the absence of isotropic relationships is to indicate in more detail the form of the relationships between the structural dimensions and function scores. To this end, mean scores for total, latent, and manifest functions for each

The $A_m B_n$ symbol associated with "high commitment", latent score zero moves to "medium commitment", latent score zero and the $A_{m-1} B_n$ to "low commitment", latent score zero and in similar fashion for the $A_m B_{n-1}$, $A_{m-1} B_{n-1}$ symbolism to pick up the second "elementary tetrad." It can be seen then that the number of elementary tetrads equals the degrees of freedom for any contingency table.

231. See Tables 4-W through 8-W, Appendix A.

232. Selvin, op. cit., p. 527.

233. Paradoxically, the cutting point problem can be completely allayed by defining all variables as dichotomies in initial operationalization. Since a two by two table has only one degree of freedom it also has only one elementary tetrad and, ipso facto, must be isotropic.

of the five independent variables were computed for all levels of each. These are given in Table 8.

As can be seen, in only few instances is the ordering of the dependent variable perfect with respect to the structural dimensions. Conversely, except for commitment, there is in no instance of a sharp departure from either a decreasing or increasing function indicating an approximately linear relationship. Thus, with respect to total scores, involvement and relations with neighbors show no inversions, rationality one, dealer two, and commitment three inversions from a linear function. In none did the inversion take place in mean scores across the dichotomy line that had been set in advance of this analysis purely on the basis of equating halves in order to maximize the scope of the factorial analysis.

Somewhat similar rates of inversion hold for latent and manifest scores. The complete reversal on latent scores for both anchors of the commitment index is striking. The very small number of cases in each of these two classes is also apparent. The remaining variables, except for involvement, are regular as far as any inversions across the dichotomy. Within the variables small inversions do occur.

The inversion of involvement on latent scores across the dichotomy points up a peculiar feature of this variable. Throughout all the functions scores, the differences among the middle four classes of involvement are extremely small. This is particularly true for the two classes between which the dichotomies are drawn. In view of this pattern, any dichotomy will distort the data somewhat. A trichotomy of high, medium, and low perhaps would be best for simplest representation. Such a procedure, however, could not be followed for it would make the

Table 8 - Mean Total, Latent and Manifest Score for Each Level of the Five Structural Dimensions.

Variable and Levels for Each	Number of Cases	Mean Total Score	Mean Latent Score	Mean Manifest Score
Commitment				
1 (high)	8	6.00	4.00	2.00
2	37	5.81	3.49	2.32
3	66	5.61	3.51	2.10
4	87	<u>5.84</u>	<u>3.67</u>	<u>2.17</u>
5	67	6.24	3.85	2.39
6	43	6.67	4.18	2.49
7	37	6.03	3.70	2.33
8 (low)	11	6.91	3.55	3.36
Involvement				
1 (high)	30	7.07	4.27	2.80
2	53	6.28	4.00	2.28
3	77	<u>6.12</u>	<u>3.74</u>	<u>2.38</u>
4	83	6.10	3.78	2.31
5	68	5.85	3.66	2.19
6	34	5.05	2.91	2.15
7 (low)	11	4.82	3.18	1.64
Dealer Relations				
1 (diffuse)	23	7.00	4.39	2.61
2	46	6.98	4.54	2.44
3	35	7.06	4.34	2.72
4	102	<u>5.87</u>	<u>3.65</u>	<u>2.22</u>
5	32	5.75	3.53	2.22
6	12	5.82	3.58	2.23
7 (specific)	106	5.31	3.16	2.15
Neighbor Relations				
1 (diffuse)	41	6.71	4.20	2.51
2	80	6.70	4.16	2.54
3	53	<u>6.13</u>	<u>3.92</u>	<u>2.21</u>
4	118	5.91	3.57	2.34
5 (specific)	64	4.88	2.98	1.89
Rationality				
1 (high)	38	7.05	4.39	2.66
2	32	6.81	4.53	2.28
3	42	6.45	3.95	2.50
4	38	<u>6.63</u>	<u>4.18</u>	<u>2.45</u>
5	90	5.72	3.49	2.23
6 (low)	116	5.36	3.22	2.14

_____ Denotes point of dichotomization.

factorial unworkable under the present design. This limitation on the analysis will be considered more specifically later.

Manifest scores show two inversions across the dichotomy, one involving a level of dealer relations maintained by only twelve respondents. The second occurs in the neighbor relations scale. Since it involves classes with larger numbers of cases, it must be considered more serious than any previous inversion. Similarly, the greater number of inversions for all the variables on this respect are more serious, since manifest score means have a more restricted range than the means of the other two types of scores. Despite these irregularities, it appears reasonable to assume linearity in the relationship of the structural variables and functions scores for heuristic purposes.

To literally portray the reasonableness of this assumption somewhat better, Figures 2, 3, and 4 were constructed. The joint distribution of mean function score and level of the independent variables were plotted and the line of relationship approximated by sight. The supporting evidence is clear.

Of course, it should also be clear that this brief inquiry into the isotropy of the independent variables does not allow full assessment of the significance of changing the cutting points for the independent variables. Such a procedure under the research design used requires the calculation of factorials for each and every level of each structural dimension, a procedure that was simply impossible. The probability of finding enough cases for all the cells of the factorial if the cutting points were to be moved to the extremes approaches zero. It is clear, however, that the assumption of linear relationships between the structural dimensions and the function scores is reasonable, and will be

Figure 2 - Distribution of Mean Total Score by Levels of the Five Structural Variables.

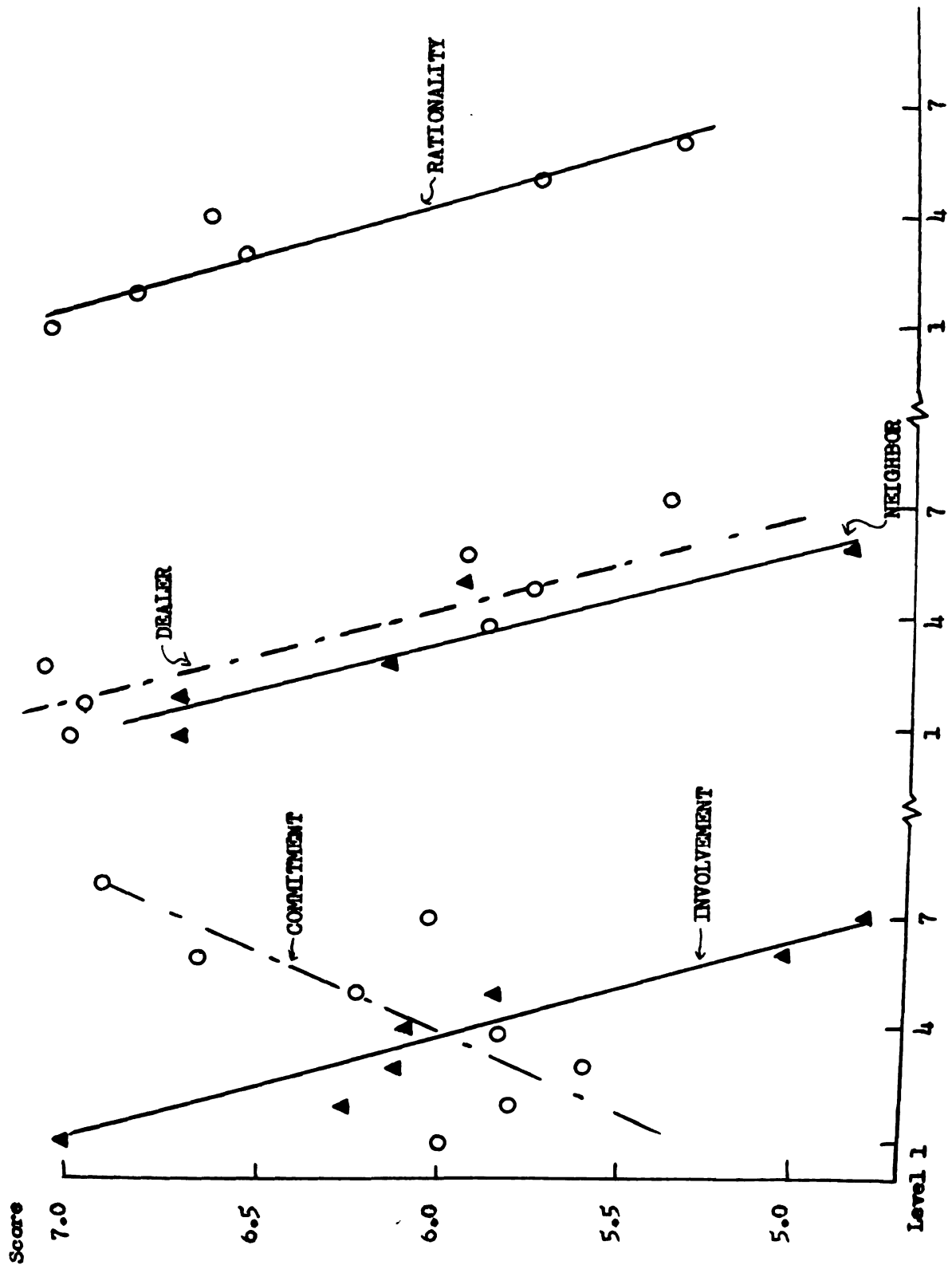


Figure 3 - Distribution of Mean Latent Scores by Levels of the Five Structural Variables.

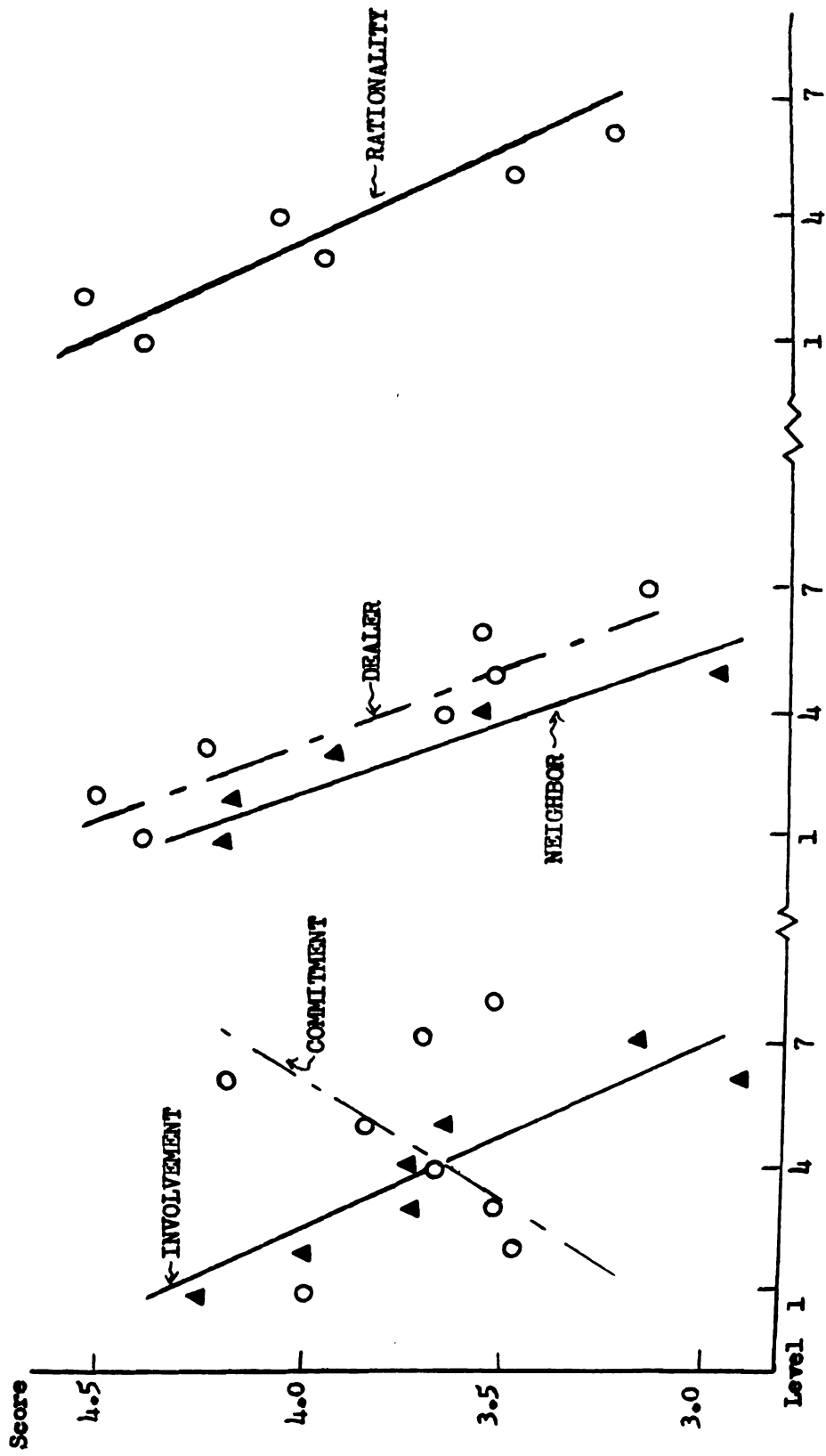
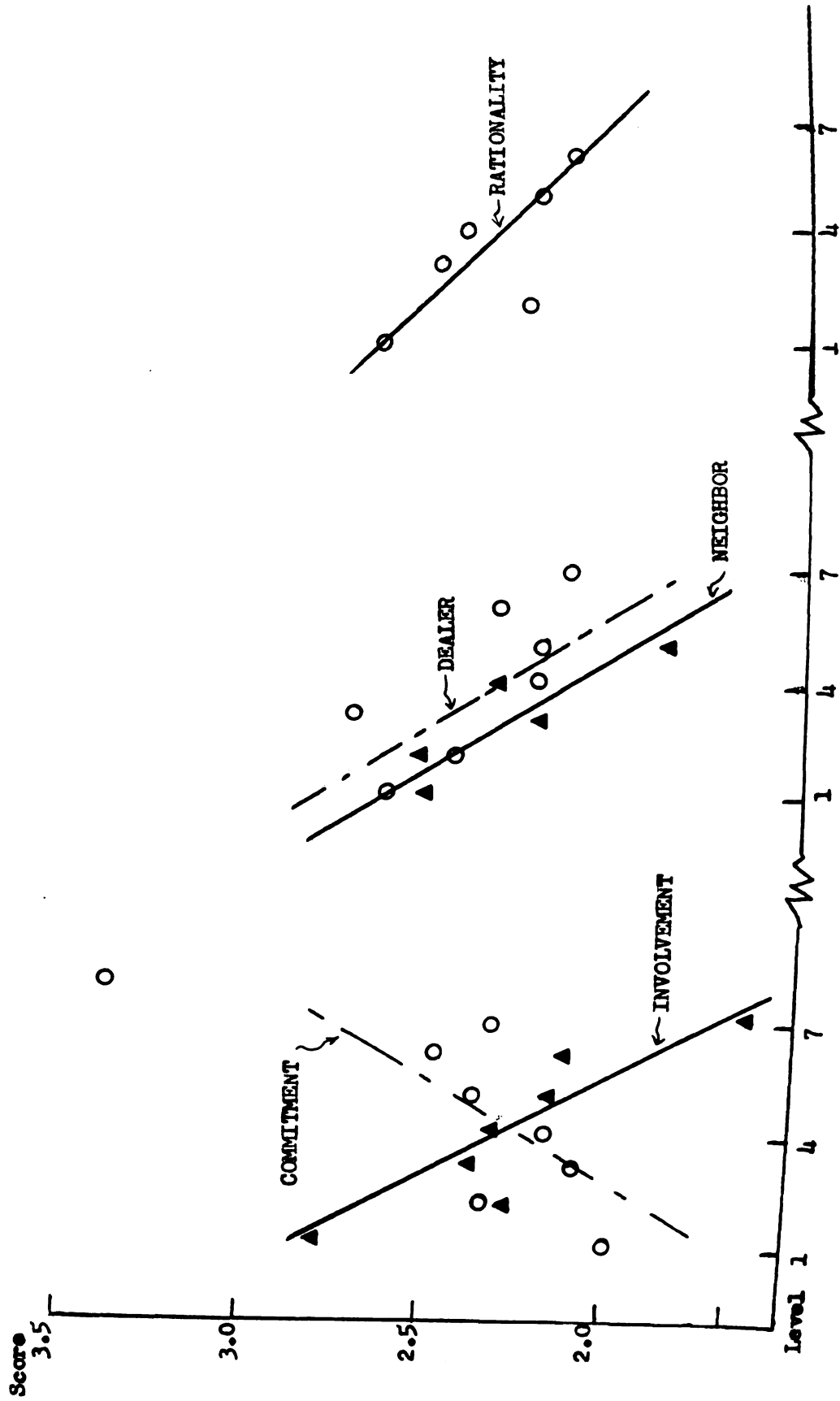


Figure 4 - Distribution of Mean Manifest Score by Levels of the Five Structural Variables.



accepted without further direct evidence. In a similar situation Yates has observed cogently that the gains in refined analysis on this point, "would not justify the additional computation labour, which is better devoted to extending the scope of the investigation in other directions." ²³⁴ It should also be clear that if the relationships are linear, the results of the factorial analysis would not change greatly with different dichotomization points.

Relation of the Structural Dimensions to Function Scores

Five Variables, No Controls

As previously indicated, the research design could not analyze simultaneously the variables composing the structural system and those of the system which were to be controlled. The former were chosen as the point of departure. A first part of the data necessary to evaluate structure then is given in Table 9. The criteria for classification into the factorial cells are the five dimensions of structure. Later tables will set out somewhat different bases for classification as explicated in chapter two. In order to orient the reader to the manner of extracting and assessing the information contained in the tables of this chapter, a step by step analysis of the first table will be made. Later tables of this chapter will present only results.

The first and most important information necessary is the mean number of functions served which are associated with a factor when the remaining four are held constant. To do this the data were rearranged as shown in Table 10. For purposes of illustration, only one variable

234. Yates, op. cit., p. 313.

Table 9 - Mean Function Scores by Factorial Cell Classified by the Five Structural Dimensions.

Factorial Cell					Number of Cases	Mean Total Score	Mean Latent Score	Mean Manifest Score
Commit H, Invol H, Deal Diff, Neigh Diff, Rat H					14	8.00	4.93	3.07
" " " " Rat L					10	6.00	4.30	2.30
" " " Neigh Spec, Rat H					20	7.15	4.50	2.65
" " " " Rat L					16	5.25	3.25	2.00
" " Deal Spec, Neigh Diff, Rat H					10	6.10	3.90	2.20
" " " " Rat L					9	5.00	3.22	1.78
" " " Neigh Spec, Rat H					5	5.60	3.20	2.40
" " " " Rat L					10	5.20	3.20	2.00
" Invol L, Deal Diff, Neigh Diff, Rat H					17	6.77	4.06	2.71
" " " " Rat L					14	5.00	2.93	2.07
" " " Neigh Spec, Rat H					13	5.92	3.77	2.15
" " " " Rat L					19	4.53	2.84	1.69
" " Deal Spec, Neigh Diff, Rat H					6	6.17	4.17	2.00
" " " " Rat L					13	4.15	2.86	1.29
" " " Neigh Spec, Rat H					6	6.50	4.17	2.33
" " " " Rat L					16	4.25	2.38	1.87
Commit L, Invol H, Deal Diff, Neigh Diff, Rat H					11	6.72	4.54	2.18
" " " " Rat L					10	7.90	4.60	3.30
" " " Neigh Spec, Rat H					4	6.75	4.25	2.50
" " " " Rat L					7	5.29	3.86	1.43
" " Deal Spec, Neigh Diff, Rat H					5	6.20	4.40	1.80
" " " " Rat L					15	6.27	3.47	2.80
" " " Neigh Spec, Rat H					6	5.83	3.67	2.17
" " " " Rat L					8	4.75	2.00	2.75
" Invol L, Deal Diff, Neigh Diff, Rat H					12	7.59	4.92	2.67
" " " " Rat L					17	7.47	4.76	2.71
" " " Neigh Spec, Rat H					10	6.90	4.30	2.60
" " " " Rat L					12	5.92	3.75	2.17
" " Deal Spec, Neigh Diff, Rat H					4	5.75	4.00	1.75
" " " " Rat L					7	7.71	4.57	3.14
" " " Neigh Spec, Rat H					7	6.71	3.71	3.00
" " " " Rat L					23	4.65	2.61	2.04

The abbreviations used here carry the same meaning throughout the remainder of the dissertation. They are as follows:

Commit - Commitment	H - High
Invol - Involvement	L - Low
Deal - Dealer Relations	Diff - Diffuse
Neigh - Neighbor Relations	Spec - Specific
Rat - Rationality	

Table 10 - Computational Material for Assessing the Significance of Differences in Mean Total Function Scores for Rationality; Basis of Classification, Five Structural Dimensions.

Factorial Cell					No. of Cases	Mean Score	Difference in Mean Score	Weighted No. of Cases	Square of Difference in Mean Score
Commit H, Invol	H, Deal	Diff, Neigh	Diff, Rat	H 14	8.000	+1.400	5.833	1.960	
"	"	"	"	Rat L 10	6.600				
"	"	"	Neigh Spec, Rat	H 20	7.150	+1.900	8.889	3.610	
"	"	"	"	Rat L 16	5.250				
"	"	Deal Spec, Neigh	Diff, Rat	H 10	6.100	+1.100	4.737	1.120	
"	"	"	"	Rat L 9	5.000				
"	"	"	Neigh Spec, Rat	H 5	5.600	+ .400	3.333	.160	
"	"	"	"	Rat L 10	5.200				
"	Invol L, Deal	Diff, Neigh	Diff, Rat	H 17	6.764	+1.764	7.677	3.112	
"	"	"	"	Rat L 14	5.000				
"	"	"	Neigh Spec, Rat	H 13	5.923	+1.397	7.719	1.952	
"	"	"	"	Rat L 19	4.526				
"	"	Deal Spec, Neigh	Diff, Rat	H 6	6.167	+2.024	4.200	4.097	
"	"	"	"	Rat L 14	4.143				
"	"	"	Neigh Spec, Rat	H 6	6.500	+2.250	4.364	5.062	
"	"	"	"	Rat L 16	4.250				
Commit L, Invol	H, Deal	Diff, Neigh	Diff, Rat	H 11	6.727	-1.173	5.238	1.376	
"	"	"	"	Rat L 10	7.900				
"	"	"	Neigh Spec, Rat	H 4	6.750	+1.464	2.545	2.143	
"	"	"	"	Rat L 7	5.286				
"	"	Deal Spec, Neigh	Diff, Rat	H 5	6.200	- .067	3.750	.004	
"	"	"	"	Rat L 15	6.267				
"	"	"	Neigh Spec, Rat	H 6	5.833	+1.083	3.429	1.173	
"	"	"	"	Rat L 8	4.750				
"	Invol L, Deal	Diff, Neigh	Diff, Rat	H 12	7.583	+ .121	7.034	.015	
"	"	"	"	Rat L 17	7.471				
"	"	"	Neigh Spec, Rat	H 10	6.900	+ .983	5.454	.966	
"	"	"	"	Rat L 12	5.917				
"	"	Deal Spec, Neigh	Diff, Rat	H 4	5.750	-1.964	2.545	3.857	
"	"	"	"	Rat L 7	7.714				
"	"	"	Neigh Spec, Rat	H 7	6.714	+2.062	5.367	4.252	
"	"	"	"	Rat L 23	4.652				

Table 10 - Computational Material for Assessing the Significance of Differences in Mean Total Function Scores for Rationality; Basis of Classification, Five Structural Dimensions.

Factorial Cell					No. of Cases	Mean Score	Difference in Mean Score	Weighted No. of Cases	Square of Difference in Mean Score
Commit H, Invol	H, Deal	Diff, Neigh	Diff, Rat	H 14	8.000	+1.400	5.833	1.960	
"	"	"	"	Rat L 10	6.600				
"	"	"	Neigh Spec, Rat	H 20	7.150	+1.900	8.889	3.610	
"	"	"	"	Rat L 16	5.250				
"	"	Deal Spec, Neigh	Diff, Rat	H 10	6.100	+1.100	4.737	1.120	
"	"	"	"	Rat L 9	5.000				
"	"	"	Neigh Spec, Rat	H 5	5.600	+ .400	3.333	.160	
"	"	"	"	Rat L 10	5.200				
"	Invol	L, Deal	Diff, Neigh	Diff, Rat	H 17	6.764	+1.764	7.677	3.112
"	"	"	"	Rat L 14	5.000				
"	"	"	Neigh Spec, Rat	H 13	5.923	+1.397	7.719	1.952	
"	"	"	"	Rat L 19	4.526				
"	"	Deal Spec, Neigh	Diff, Rat	H 6	6.167	+2.024	4.200	4.097	
"	"	"	"	Rat L 14	4.143				
"	"	"	Neigh Spec, Rat	H 6	6.500	+2.250	4.364	5.062	
"	"	"	"	Rat L 16	4.250				
Commit L, Invol	H, Deal	Diff, Neigh	Diff, Rat	H 11	6.727	-1.173	5.238	1.376	
"	"	"	"	Rat L 10	7.900				
"	"	"	Neigh Spec, Rat	H 4	6.750	+1.464	2.545	2.143	
"	"	"	"	Rat L 7	5.286				
"	"	Deal Spec, Neigh	Diff, Rat	H 5	6.200	- .067	3.750	.004	
"	"	"	"	Rat L 15	6.267				
"	"	"	Neigh Spec, Rat	H 6	5.833	+1.083	3.429	1.173	
"	"	"	"	Rat L 8	4.750				
"	Invol	L, Deal	Diff, Neigh	Diff, Rat	H 12	7.583	+ .121	7.034	.015
"	"	"	"	Rat L 17	7.471				
"	"	"	Neigh Spec, Rat	H 10	6.900	+ .983	5.454	.966	
"	"	"	"	Rat L 12	5.917				
"	"	Deal Spec, Neigh	Diff, Rat	H 4	5.750	-1.964	2.545	3.857	
"	"	"	"	Rat L 7	7.714				
"	"	"	Neigh Spec, Rat	H 7	6.714	+2.062	5.367	4.252	
"	"	"	"	Rat L 23	4.652				

on one score is used, "rationality" and "total," respectively. For any one set of variables three such tables were required. Hence, with five variables to a factorial, fifteen such tables in all were required.

For the example, a simple way of making comparisons between the means for all functions for rationality is to use the average number of functions in the 16 paired cells combined without weights. This procedure is recommended by Keyfitz as "the best answer that can be secured if interactions are large."²³⁵ However, "it is subject to unnecessarily large sampling error, for the cells containing only two or three families, [i.e., observations] have as big a weight as those in which forty are averaged."²³⁶

Immediately two problems are given then: first, assessing the magnitude of interactions, and second, weighting sub-groups of unequal size. Keyfitz argues that the amount of information contributed by each and every one of the sixteen differences contained in the factorial "is exactly that which would be given for an average, in material which varies as our individual families do within cells, of $n_1 n_2 / (n_1 + n_2)$ cases."²³⁷ Then, using the substance of his study, he continues that:

In general, if we have averages for numbers of children born in families far from cities, \bar{X}_{1i} (where i ranges over the 32 ways of holding the 5 other variables constant [in our case 16 ways and 4 variables]), and corresponding averages for families near cities, \bar{X}_{2i} , the unit comparison is $\bar{X}_{1i} - \bar{X}_{2i}$. Being based on n_{1i} and n_{2i} observations,

235. Keyfitz, op. cit., p. 473.

236. Ibid.

237. Ibid., pp. 474-475.

it contains a quantity of information proportional to $\frac{n_{1i}n_{2i}}{n_{1i} + n_{2i}} = N_i$, and the efficient combination of all such differences is

$$\frac{\sum N_i (\bar{X}_{1i} - \bar{X}_{2i})}{\sum N_i} \quad (1) \quad 238$$

The error of this term, to which the actual differences need be compared in significance tests, is stated as follows:

If the within-cell variance is σ^2 , then the variance of $\bar{X}_{1i} - \bar{X}_{2i}$ is $\sigma^2 \left(\frac{1}{n_{1i}} + \frac{1}{n_{2i}} \right) = \frac{\sigma^2}{N_i}$ and the variance of (1) is $\frac{\sum N_i^2 \sigma^2 / N_i}{(\sum N_i)^2}$, which reduces to $\sigma^2 / \sum N_i$

$$(2) \quad 239$$

However, cluster sampling effects of the type occurring in this study may invalidate the use of this within-class error estimate. An alternative expression for error in this situation is offered by Keyfitz.

Consider the 32 blocks, each of which gives a difference between the average size of family in near and distant parts and is matched on the other 5 variables. The calculation of the weighted mean difference due to distance has removed 1 degree of freedom; the consistency with which the several blocks resemble their average in respect of excess of children for distant places furnishes 31 degrees of freedom for the error of the weighted mean.

Consider that in each of the 32 pairs of cells there are N_i cases ... and a difference of means equal to \bar{X}_i . This is as though we had N_1, N_2, \dots, N_{32} observations, giving means $\bar{X}_1, \bar{X}_2, \dots, \bar{X}_{32}$, respectively, of a new variable X which has the same variance as family size, σ^2 .²⁴⁰

238. Ibid., p. 475.

239. Ibid.

240. Ibid., p. 476.

Thus the formula for calculating the significance of mean differences becomes:

$$\frac{\sum N_i \bar{X}_i}{\sqrt{\frac{\sum N_i (\bar{X}_i)^2 - [(\sum N_i \bar{X}_i)^2 / \sum N_i]}{(K-1) \sum N_i}}} \quad (3) \quad 241$$

where all symbols are as defined before and k stands for the total number of paired cells.

Referring again to Table 10, it can be seen that the numerator of this last expression is the difference in mean scores taken over all 16 "observations", i.e., cells in which only rationality is left to vary while the other four variables are held constant. It is the weighted mean difference in total scores attributable to variability in rationality. It is obtained by multiplying the difference in mean scores between each two adjacent cells by the weighted number of cases, i.e., column 3 multiplied by column 4 and summing these algebraically over the 16 differences.

The weighted number of cases for each pair of cells was obtained, as shown by Keyfitz above, as $n_1 n_2 / n_1 + n_2$. Thus, for the first two cells $14 \times 10 = 140$ divided by $10 + 14$ yielded the quotient 5.833. For Table 10 the sum of the differences multiplied by the weighted number of cases is 87.570. That figure divided by the total number of weighted cases (82.114) yields a mean difference of 1.006 in favor of high rationality versus low rationality levels.

To test whether that difference; to decide if the variability might be due simply to chance fluctuations in sampling, the standard

error term stated above is required. In Table 10, the first term of the numerator within the radical is simply the sum of squared differences in the sixteen compared cells weighted by the number of observations in each (i.e., the sum of column 4 multiplied by column 5 or, in our example, 182.753). All the remaining terms are readily seen. The sum of differences weighted by number of observations, the quantity squared, $(\sum N_i X_i)^2$, was seen above as $(87.57)^2$ or 7668.5049. This, divided by the total weighted number of cases, $(\sum N_i)$, yields the quotient 93.389.

The denominator of the term under the radical is simply the product of the total number of paired cells minus one $(k-1)$, 15, times the weighted number of cases, 82.114, or 1231.71. Performing the arithmetic calculations yields an error term of .269. Dividing the mean difference of 1.066 by this error yields a t value of 3.96, which, with 15 degrees of freedom, is significant beyond the .01 probability level.

However, before this conclusion can be accepted, the role of interactions in producing this result had to be assessed; for the error term used in the example applies only if interactions are negligible. The interaction of rationality with the four remaining variables is assessed in a manner similar to that used above. For example, the interaction of rationality and neighbor relations is obtained by noting the eight differences of differences between cases of high and low rationality when type of neighbor relations is also allowed to vary. The first such difference, from Table 10, column 3, is -1.400 minus -1.900 or +.500. This is the difference in scores for high and low rationality cases when, in the first instance, neighbor relations are diffuse, and in the second case they are specific.

A weighted average must then be computed for these eight "observations" in the manner of the test for main effects. The weights for number of cases suggested by Keyfitz in this case is, "the reciprocal of the sum of the reciprocals of the number of observations in the four cells."²⁴² In the present example the weight for the first interaction would be $1/1/14 + 1/10 + 1/20 + 1/16$, or 3.522.

The error to which this mean difference of differences is subject is the square root of the estimated within-cell variance of the 32 factorial cells divided by the sum of the weights for the eight differences of differences.²⁴³ In the example this value is .529 and the weighted mean difference is -.790. The resultant t value of 1.49 is clearly not significant²⁴⁴ with seven degrees of freedom. The remaining interaction values for rationality as well as those for the other variables of the five factor factorial, for all three mean function scores are given in Table 11.

It can be seen that only the interaction of commitment with involvement for total and latent scores shows a statistically significant difference under a two tailed test. Significance of that relation is vitiated when a strict definition of interaction is invoked. Yates notes, "it is customary to define the interaction as one-half the difference of effect"²⁴⁵ in which case the difference elicited is no

242. Ibid., p. 478.

243. Ibid.

244. A "significant" difference here, and throughout the remainder of the dissertation means a probability level of .05 or less associated with the results of the appropriate test of statistical significance used.

245. Yates, op. cit., p. 312.

Table 11 - "Interactions" Matrix for the Five Structural Dimensions.⁺

Interaction of	Total Score				
	Commitment	Involvement	Dealer	Neighbor	Rationality
Commitment	--	+2.38	- .19	-1.70	+2.26
Involvement		--	+1.08	+ .32	- .66
Dealer			--	+ .96	+ .04
Neighbor				--	-1.49
Rationality					--
	Latent Score				
	Commitment	Involvement	Dealer	Neighbor	Rationality
Commitment	--	+2.51	-1.24	-1.78	+1.44
Involvement		--	+1.61	+ .24	- .35
Dealer			--	- .50	- .63
Neighbor				--	-1.08
Rationality					--
	Manifest Score				
	Commitment	Involvement	Dealer	Neighbor	Rationality
Commitment	--	+1.19	+ .97	- .86	+2.09
Involvement		--	- .06	+ .22	- .65
Dealer			--	+2.03	+ .71
Neighbor				--	-1.26
Rationality					--

⁺ Cell values are values of t to be read with seven degrees of freedom.

longer significant.²⁴⁶ The obvious conclusion is that the weighting procedure used was justified.

246. Higher order interactions were not computed since the first order interactions were not statistically significant. With the error term used, the first order interactions would have to show reasonably consistent levels of significance before the higher order interactions could show other than chance significant relationships. I wish to thank K. R. Bennett, statistician for the Agricultural Experiment Station, Pennsylvania State University, for calling this point to my attention.

With the help of this example the results of the factorial analysis can be presented without further digression. It will be remembered that the main datum sought from the analysis by factorials is the mean difference in score for each structural dimension when the levels of all others are held constant. Each is evaluated against its standard error, i.e., t values.²⁴⁷ The relevant information from the first factorial is contained in Table 12.

It can be seen that all of the structural dimensions except involvement show statistically significant differences in mean scores for both total and latent functions. The differences associated with variations in commitment exceed the .05 level in both instances while the other three sets exceed the .01 level.²⁴⁸ None of the five variables significantly differentiates manifest function scores. Whether this reflects uniform use on all structural levels or whether it reflects a deficiency in assessing and measuring manifest functions is not clear. Some inferences can be made, however.

It is apparent from the data in Table 9 that there is a general low level of reported use of market news with respect to all of its manifest purposes. This low level of use is particularly noticeable

247. The values obtained by analysis of variance calculations with two means compared, as in the present model, yield results identical with t values since t is the square root of F. The comparing of more than two means is, of course, more efficient with the F test, see the discussion in F. A. Pearson and K. R. Bennett, Statistical Methods Applied to Agricultural Economics, New York: John Wiley & Sons, 1942, p. 354 ff. The use of t values is predicated primarily upon the greater explication by statisticians of the particular factorial model in this form, see Keyfitz, op. cit.; Yates, op. cit.

248. The t values are interpreted with 15 degrees of freedom here and in all the factorials analysis unless otherwise noted. See Keyfitz, op. cit., p. 476, for the basis of this selection.

Table 12 - Differences in Mean Scores, Standard Errors, and t Values for the Five Structural Dimensions Factorial Design, Two-tailed Tests.

Variable	Total Scores			Latent Scores			Manifest Scores		
	$\sqrt{\bar{X}_1 - \bar{X}_2}$	$\sqrt{\bar{X}_1 - \bar{X}_2}$	t^\pm	$\sqrt{\bar{X}_1 - \bar{X}_2}$	$\sqrt{\bar{X}_1 - \bar{X}_2}$	t	$\sqrt{\bar{X}_1 - \bar{X}_2}$	$\sqrt{\bar{X}_1 - \bar{X}_2}$	t
Commitment	-.774	.300	2.58**	-.463	.195	2.37*	-.311	.171	1.82
Involvement	.347	.228	1.52	.197	.170	1.16	.150	.110	1.36
Dealer	.804	.188	4.28**	.619	.147	4.21**	.185	.139	1.33
Neighbor	.866	.245	3.53**	.647	.134	4.83**	.219	.161	1.36
Rationality	1.066	.269	3.96**	.799	.145	5.51**	.267	.171	1.56

+ A difference in mean score between the two parts of the dichotomized variable. Unless otherwise noted, \bar{X}_1 refers respectively to high commitment, high involvement, diffuse dealer relations, diffuse neighbor relations, and high rationality. Unless otherwise indicated, mean score differences are read as positive. This terminology applies to all tables reporting results of the factorial analysis.

++ Standard error of the difference indicated.

± Ratio of the actual difference to its error term. The five and one per cent probability levels for the test of significance are designated, respectively, by * and **. They refer to two-tailed tests unless otherwise noted.

when the extent of occurrences of manifest and latent functions is compared. Slightly over one-third of the sample indicated none or only one manifest function served. In contrast, only one in twelve indicated no more than one latent function served. A somewhat similar picture holds at the other extreme of use where the figures are reversed. Nearly one in three of the respondents claimed more than half the latent functions served whereas only slightly over eight per cent claimed more than four manifest functions served by market news.

In part, these differences are probably due to the difference in time span characteristically involved in the two types of functions as they were obtained in the schedule. Manifest functions had a tightly limited time span. Information was obtained for the last sale, not the typical or the usual sale. Similarly, changes in the last three years or for the upcoming year were probed. Only one question relating to manifest functions was open-ended on time. That was the question, "would it make a difference to you if you could no longer get market news; why?" In contrast, the questions with respect to latent functions either specifically defined or implied no limit to the time in which they applied.

While this difference in time reference may contribute to the failure of the structural variables to relate to differences in the occurrence of manifest functions, contrary evidence is also available. It seems reasonable to expect that the use of market information for its manifest purposes is part of a more general factor of business acumen or managerial ability.²⁴⁹ Any such factor might also be expected to manifest itself in such allied behavior as the adoption of new farm practices, technologies and business procedures. If this argument is valid, this behavior should be strongly correlated with the use of market news for manifest purposes. In general, however, an overall rate of adoption for new practices is low. A 1954 study of 471 Michigan farmers is revealing in this respect since the sample was drawn from much the same geographic area as that utilized in the present

249. McCormick, op. cit., pp. 45-46 develops this argument on the basis of his Ohio data.

study.²⁵⁰ Fifty-four recommended farm practices were investigated. "The median percentage of adoption was 34."²⁵¹ For specific management practices the percentage of adoption ran from 81 per cent keeping some sort of books to 38 per cent buying fertilizer ahead of the time needed, 22 per cent using written leases on rented land, 12 per cent buying supplement in quantities to get discounts, and 6 per cent buying whatever protein feed supplement is cheapest on a per pound of protein basis.²⁵²

Evidence is also available in other market news studies supporting a generally low level of use for manifest market news functions. It is true that the evidence appears contradictory without careful examination. Thus, McCormick in Ohio found that between 82 and 92 per cent of the farmers in his sample of 656 who sold hogs, sheep, wheat, corn or soybeans "used various sources of farm market information before selling," and 71 per cent of the cattle sellers did likewise.²⁵³ On similar commodities, an Iowa study²⁵⁴ found somewhat comparable percentages of people who either listened to radio or read daily market news reports in newspapers prior to their last sale. However, when asked,

250. Nielson and Bittner, op. cit., compare particularly Figure 1 with their page seven.

251. Ibid., p. 4.

252. Ibid., pp. 21-26. The low rate of adoption for the last two practices probably is not due to capital inabilities or "rationing" since 61 per cent of the farmers report using short term credit to buy fertilizer and feed. See page 22.

253. McCormick, op. cit., pp. 22 and 37.

254. Dodds and Marvin, How Do Iowa Farmers Obtain and Use Market News, op. cit.

"Where did you get the information that helped you decide on the buyer of the hogs, [or corn, or cattle, etc.,] the weight at which to sell and the time to sell?" ... large numbers of farmers named none of the usual market news media sources.²⁵⁵

Specifically, 68 per cent of the hog sellers said market news was not used in helping to decide selling weight; 67 per cent said it was of no aid in fixing the selling time; and 63 per cent considered it of no value in deciding on sales outlet.²⁵⁶ Similar figures applied both to cattle sales and grain sales.²⁵⁷

The Ohio study allows no insight into the discrepancy between possible communication or, at least, exposure, on the one hand, and effect, on the other. It is only stated that "those farmers who sold hogs were asked from what they obtained market news before they decided to sell."²⁵⁸ Presumably, the same approach was used with other commodities. The loaded aspect of the question is obvious since it assumes, first, that the farmer did have information and, second, that it was used, if available. The Iowa study does not force the second part of this assumption.

The current study found that slightly over 81 per cent of the members of the total sample were getting market information at the time they were getting ready to sell the product to which the manifest functions referred. However, only 52 per cent indicated that such

255. Ibid., p. 4.

256. Ibid.

257. Ibid., cf., pp. 137 and 142.

258. McCormick, op. cit., p. 18.

market news was actually utilized in deciding when or how much to sell. The discrepancy between possible communication and its intended effects is again apparent. At the same time it is somewhat paradoxical for the data show a relatively high rate of market news use in comparison with the Iowa study. At least with respect to other market news studies, this evidence means either that the Michigan farm population has a different rate of use of market news or some improvement in measuring use has been achieved. An unequivocal answer is not available. It is also somewhat aside from the point. The problem is less one of evaluating the current study against the results of relevant studies done elsewhere than it is to assess the validity with which the various indices are measured and, hence, are able to differentiate in the present sample. Here, also, the case is not clear.

We can begin by considering involvement and commitment. It will be recalled that in evaluating the indices for the structural dimensions both involvement and commitment were deemed the least satisfactory. Yet, a priori, these two variables appear as the most relevant for differentiating manifest functions. This is particularly true for involvement. There is a more developed basis in theory for expecting relations with this variable than with any of the five structural variables, for both reference group and role theory suggest its pertinence.²⁵⁹

259. See particularly Merton, Social Structure, op. cit., pp. 225-386; Parsons, The Social System, op. cit., particularly his discussions of "Identification"; Coutu, op. cit.; Ralph Turner, "Role-Taking, Role Standpoint and Reference Group Behavior," American Journal of Sociology, vol. XLI, (January, 1956), pp. 316-328; Theodore Sarbin, "Role Theory" in Gardner Lindzey (ed), Handbook, op. cit., pp. 223-258.

There is some evidence in the research findings that the indices for involvement and commitment may not be completely adequate. For one thing, the sample showed a low level of involvement in agriculture. Approximately two-thirds of the respondents in reconstructing the situation by which they became farmers indicated that either coercive or passive elements were fundamentally involved. In this light, the fact that 80 per cent of the sample indicated no preference for a job other than farming when they started farming, and the fact that more than nine-tenths of these currently felt that they would not "enjoy" any other job more than farming can take on a new meaning. Rather than indicating involvement in agriculture, these facts may simply reflect a realistic appraisal of highly limited alternatives that leads to a resignation to rather than an involvement in agriculture.

Other data support this reinterpretation. Given the hypothetical chance to relive their lives, 55 per cent of the sample members chose to remain in agriculture. But, of those choosing agriculture, one in four gave no positive reasons for their choice. Rather they expressed such deep-seated resignation that they were unable to entertain seriously the hypothetical alternative posed. They could only see that they had no possibilities for employment outside of agriculture. Under these circumstances, the involvement questions could have tapped simultaneously involvement (as defined) and forced resignation, its near opposite, with regard to the dependent variable. If so, each level of involvement would contain two very different classes of people. This would account for the failure of involvement either to conform to the Guttman scale pattern or to relate to the rate at which functions were served by market news.

Going along to confound this possible substantive ambiguity of involvement were certain requirements of the factorial analysis schema. In the discussion of isotropy, the need to dichotomize involvement, even though a trichotomy seemed more appropriate, has been reviewed.²⁶⁰ The point of dichotomization of the involvement variable was between the two single largest groupings. In mean scores these two groupings never varied beyond .07 points on any of the three dependent variables.

The possibility of the inappropriateness of the dichotomization is underscored by noting Table 13 where the results of an analysis of variance using all levels of involvement are contained. This test showed statistically significant differences at the .01 probability level for both latent and total scores. If the involvement index were not substantively ambiguous, this result would cast serious doubt on the dichotomous procedure. With the substantive ambiguity, its meaning is less definite.

What is clear is that, within the limits of this analysis, involvement showed no differentiating power. Similarly, a better index for involvement is needed. This study will not attempt to "back track" and create it. The data are not present. The failure of the involvement index is still another limit of the research and concurrently a challenge to further, future research.

The situation with respect to commitment is also somewhat hazy. An analysis of variance using all levels of commitment showed no significant differences on all three dependent variables, Table 13. This

260. See page 119.

Table 13 - Analysis of Variance for Total, Latent, and Manifest Score
Classified by Levels of Commitment and of Involvement.

Basis of Classification, Score, and Analysis of Variance Item	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Involvement - Total Score				
Total	2,242.77	355		
Among	112.21	6	18.70	
Within	2,130.56	349	6.10	3.07**
Involvement - Latent Score				
Total	971.47	355		
Among	49.21	6	8.20	
Within	922.26	349	2.64	3.11**
Involvement - Manifest Score				
Total	803.34	355		
Among	16.49	6	2.75	
Within	786.85	349	2.25	1.22
Commitment - Total Score				
Total	2,242.77	355		
Among	46.94	7	6.71	
Within	2,195.83	348	6.31	1.06
Commitment - Latent Score				
Total	971.47	355		
Among	16.93	7	2.42	
Within	954.54	348	2.74	.88
Commitment - Manifest Score				
Total	803.34	355		
Among	19.54	7	2.79	
Within	783.80	348	2.25	1.24

stands in contrast to the factorial result. In attempting to reconcile these two, it could be argued that the significant outcome of the factorial analysis was simply the result of dichotomizing a non-linear variable and not reflection of a "real" relationship. However, this interpretation is tenable only if it is also assumed that the levels of commitment used in the analysis of variance are meaningful

and distinct strata of the phenomena. In many respects accepting this assumption seems riskier than accepting the dichotomy. Commitment was constructed from an unweighted count of the occurrence of a number of disparate phenomena. In this case, the more cutting points used, the more errors in the placement of individuals would occur. Errors in placement would be at a minimum, everything else equal, with only dichotomization used. Errors in placement would have no effect except as they involve error of placement across the dichotomy line. These would have to be the same for both forms of analysis. In addition, the analysis of variance would have additional chance for error in placement. Furthermore, it is much easier to see why commitment should be related to functions score. Hence, the results from the dichotomy analysis were accepted. Quite naturally, the kind of reasoning engaged in here reflects on the validity of the conclusions.

A further problem arises in interpreting the test results based on the dichotomized index of commitment. Should direction be used in interpreting the results of the factorial? If the analysis specifies direction, a one-tailed statement of probability applies and it becomes apparent that commitment is inversely related to manifest scores at the .05 probability level. High commitment levels have lower average manifest scores than do low commitment levels.

This is a problem because common sense leads one to expect the reverse. The higher the commitment, the more important would it seem to be to use market news to make the most of one's situation. The inverse relationship also seems to contradict past research findings. Smith found a direct relationship between his index of

commitment and exposure to market news.²⁶¹ While it has been argued that exposure to market news and use of market news are not identical, they are not unrelated. In the current sample, better than 60 per cent of those who were exposed to market news information at the time of sale cited market news as functional in deciding where and when to sell. Semantic differences are largely behind this apparent incongruity. Smith built his commitment index from the combined position on two Guttman scales, one measuring diffuseness of relations with dealer and the other measuring level of use for supplementary information sources. Essentially, those scales were reproduced in the current study. They are used as the structural variables "dealer" and "rationality," respectively. Both of these variables, although not significantly related to manifest score, are positive in direction and, hence, do not contradict Smith's findings.

Further consideration of the current commitment index and the manner of weighting makes the inverse relation more understandable. In general, as commitment is measured in this study, the actor is not necessarily nor generally aware of his relative level of commitment. Advancing age and low educational attainment, in combination with financial position and job experience, in particular, underlie "high" commitment. Then if normal correlative behaviors could be expected to hold, older persons would tend both to receive less information and use it less than would younger persons; farmers with larger operations and more income would tend to receive and use more information than would

261. Smith, Organization of the Farm, op. cit., p. 64 ff.

smaller farmers, and so on.²⁶² At the same time certain of these associations signal conflicting tendencies. For instance, the larger farm operations and higher incomes in farming, other things equal, tend to go to older operators. With other things not equal, the empirical case, there would then be a cross-checking tendency among, say, age, education, size of farm, and job experience. In part, this cross-checking may be responsible for the comparatively low differentiating ability of commitment relative to the three remaining structural variables.

With respect to the remaining three structural variables, there is no evidence of inadequate measurement. It must be concluded that these do not significantly differentiate manifest functions.²⁶³

The results to this point also demonstrate certain advantages of the factorial model in simultaneously forcing controlled comparisons and suggesting objective standards for hypothesis acceptance or rejection. What this can mean is demonstrated when the relationships of the five dichotomized structural dimensions to total, latent, and manifest scores without regard to the factorial controls are examined (See Table 14). While no directions of difference change, the level of

262. See, for instance, Alfred Dean, H. A. Aurbach, and C. Paul Marsh, "Some Factors Related to Rationality," op. cit.; C. Paul Marsh and A. Lee Coleman, "The Relation of Farmer Characteristics to the Adoption of Recommended Farm Practices," Rural Sociology, Vol. 20, (September-December, 1955) pp. 289-296, and "Differential Communication Among Farmers in a Kentucky County," Rural Sociology, Vol. 20, (June 1955) pp. 93-101; McCormick, op. cit., pp. 45-46.

263. An analysis of variance run using all levels of these three variables yielded results identical with those by the factorial analysis, hence, support this conclusion. See Table 9-W, Appendix A.

Table 14 - Differences in Mean Scores, Standard Errors, and Z Values of the Five Structural Dimensions with No Factorial Control.

Variable	Total Scores			Latent Scores			Manifest Scores		
	$\sqrt{\bar{X}_1 - \bar{X}_2}$	$\sqrt{\bar{X}_1 - \bar{X}_2}$	Z	$\sqrt{\bar{X}_1 - \bar{X}_2}$	$\sqrt{\bar{X}_1 - \bar{X}_2}$	Z	$\sqrt{\bar{X}_1 - \bar{X}_2}$	$\sqrt{\bar{X}_1 - \bar{X}_2}$	Z
Commitment	-.592	.535	1.11	-.295	.226	1.31	-.297	.221	1.34
Involvement	.476	.543	.88	.301	.227	1.33	.186	.213	.87
Dealer	1.000	.537	1.86	.773	.228	3.39**	.213	.217	.98
Neighbor	.986	.540	1.83	.735	.226	3.25**	.261	.217	1.20
Rationality	1.327	.538	2.47*	1.022	.225	4.54**	.305	.225	1.36

assessed significance does. Only four of the differences are statistically significant in contrast to the eight in the factorial design.

The beta, or type II, error is avoided by drastically reducing the sources of sampling error to which the means are subject by attaining homogeneity within the cells of the factorial.

Four Variables, Single Controls

The second factorials necessary to the analysis schema involved adding controls to the set of structural variables shown to be significantly related to functions scores. Since only involvement failed to differentiate at the chosen significance level, it was temporarily dropped from the analysis and the two "controls", source of market news and definition of market news, were added to the remaining four structural variables. The results are shown in Table 15.²⁶⁴

264. Tables 10-W and 11-W, Appendix A, contain the data from which these results are obtainable. Tables 14-W and 15-W demonstrate the legitimacy of utilizing the Keyfitz model of analysis since the interactions are shown to be not significant.

Table 15 - Differences in Mean Scores, Standard Errors, and t Values of the Four Significant Structural Variables Factorial Design with Controls Separately Added for Source of Market News and Definition of Market News.

Variable	Total Scores			Latent Scores			Manifest Scores		
	$\bar{X}_1 - \bar{X}_2$	$\bar{X}_1 - \bar{X}_2$	t	$\bar{X}_1 - \bar{X}_2$	$\bar{X}_1 - \bar{X}_2$	t	$\bar{X}_1 - \bar{X}_2$	$\bar{X}_1 - \bar{X}_2$	t
Commitment	-.564	.300	1.88	-.349	.183	1.91	-.215	.160	1.34
Dealer	.691	.217	3.88**	.574	.158	3.63**	.117	.139	.84
Neighbor	.810	.321	2.52*	.633	.172	3.68**	.177	.176	1.01
Rationality	.855	.293	2.92*	.684	.194	3.55**	.171	.149	1.15
Definition+	1.027	.321	3.20**	.515	.208	2.48*	.512	.150	3.41**
Commitment	.590	.299	1.97	-.352	.158	2.23*	-.238	.179	1.33
Dealer	.762	.184	4.14**	.614	.150	4.09**	.148	.141	1.05
Neighbor	.887	.275	3.23**	.614	.148	4.33**	.246	.163	1.51
Rationality	1.046	.312	3.35**	.780	.161	4.84**	.266	.170	1.56
Source++	.549	.223	2.45*	.286	.165	1.73	.263	.123	2.14

+ \bar{X}_1 refers to a definition of market news broader than the USDA's.
++ \bar{X}_1 refers to the use of mass media plus informal sources or informal sources only.

Two findings are particularly noteworthy. First, the insertion of "controls" does not alter the relationships of dealer relations, neighbor relations, or rationality to the three scores. Total score and latent score remain significant but, in all instances for all scores, the t value is reduced when the market news definition is used as a control. Thus, the probability level for neighbor relations and rationality are reduced to the .05 level. To retain significance for commitment, a one-tailed interpretation is necessary. There is no change in the inability of these variables to differentiate manifest scores.

The picture does not change greatly when sources of market news is used as a control. The relationship of the structural variables remain as they were in the factorial without controls except for changes in the level of significance. All four structural variables are significantly related to total and latent scores at the .01 level with a two-tailed test except for commitment which is significant for latent score at the .05 level with a two-tailed interpretation and significant at the .05 level for total score with a one-tailed interpretation. The reduction in t values is far less even when sources is the control. In fact, the t value increases for commitment. Since the original relationships are maintained there is no need to think of either source of market news or definition of market news as being by themselves necessary parts of the analysis of possible spurious correlation between the structural dimensions and the dependent behavior.

The second fact standing out is that the "control" variables, while superfluous as controls, significantly differentiate the dependent behavior (except for sources on latent score). Those persons who define market news more broadly than does the USDA have higher functions scores than those whose definitions conform more closely to that of the USDA. Similarly, those persons who use market news sources not limited to mass media tend to have higher scores than those who use only mass media sources.

Of particular interest is the differentiating ability of the "control" variables with regard to manifest score. They are much more effective than the structural variables in this respect. In the previous tests, only commitment had a significant relationship with manifest

score. However, even with a one-tailed interpretation, the importance of commitment in this respect was not supported with the insertion of controls. What can we conclude? It will be remembered that the t value in the factorial with no controls was only barely significant at the .05 level with a one-tailed interpretation. But, a one-tailed interpretation for the commitment variable is hard to justify as previously shown. Furthermore, mean differences and standard errors are both subject to sampling fluctuation and hence any obtained t values would fluctuate about the "real" value. Therefore, it seems reasonable and necessary under the rules of analysis to conclude that commitment does not significantly differentiate manifest scores.

Before going on to the final step in the factorial analysis, a brief comment on certain further advantages of the factorial analysis can be demonstrated. This pertains to the problem of correlated bias in analysis which was discussed above.²⁶⁵ The factorial offers a distinct aid to that problem. One of the conclusions drawn above was that the structural dimensions exerted independent influence apart from the control variables. This conclusion of independent effect would be less evident from a simple contingency analysis. In fact, it could not be obtained except by some form of cross-tabulated analysis -- a feature essentially forced by the sheer fact of the factorial. Short of a cross-classification of all five variables simple contingency analysis could estimate the possible independent effects by noting the joint distribution of the independent variables themselves. For example, it can be seen from Table 16 that those persons with high

265. See pages 47-53.

Table 16 - Contingency of the Control Variables and the Structural Dimensions⁺.

Structural Dimension and Level	Market News Definition		Market News Sources	
	Same or less than USDA's	More than USDA's	Mass only	Mass and in- formal or in- formal only
Commit H	97 (+) ⁺⁺	101	101 (+)	97
Commit L	61	97	57	101
	$\chi^2 = .10$	$.8 > p > .7$	$\chi^2 = 7.91$	$.02 > p > .01$
Deal Diff	73 (-)	133	85 (-)	121
Deal Spec	68	82	73	77
	$\chi^2 = 3.37$	$.1 > p > .05$	$\chi^2 = 1.92$	$.2 > p > .1$
Neigh Diff	67 (-)	107	76 (-)	98
Neigh Spec	74	108	82	100
	$\chi^2 = .16$	$.7 > p > .5$	$\chi^2 = .06$	$.9 > p > .8$
Rat H	41 (-)	109	58 (-)	92
Rat L	100	106	100	106
	$\chi^2 = 16.48$	$p < .001$	$\chi^2 = 3.46$	$.1 > p > .05$

⁺ Involvement is not included for reasons given on pp. 140-141.

⁺⁺ The sign indicates the direction of departure from the theoretically expected number. Only one sign is shown. All the other signs are fixed by the fact that the contingency has only one degree of freedom. Thus, the 101 must be negative, the 61 negative and 97 positive.

rationality levels tend also to have broader definitions of market news than those persons with low rationality levels. The probability is significant at beyond the .001 level measured by chi-square. The distribution of market news definition with regard to neighbor relations, dealer relations, and commitment is no different from that which might be expected from chance. What would be the conclusion with respect to independent effect of each of the variables from a simple contingency

analysis? Since definitions of market news are evenly distributed with respect to the two levels of each of neighbor relations and commitment, one would normally expect that any effect of definition differences would cancel out across the two levels.²⁶⁶ This conclusion would be less certain for the dealer variable and denied for the rationality dimension. In the latter case, one could not be certain whether higher functions scores correlated with more inclusive market news definitions and with high rationality were independent or due to the fact that these two variables were themselves correlated, as shown by the simple contingency analysis.

An even more cloudy picture would hold with regard to the sources variables. While only one of the four relationships is statistically significant under a null hypothesis, it is also true that there is a tendency for disproportionate numbers of persons with low commitment to use other than strict mass media sources; for persons who maintain diffuse relations to use such sources; and, for persons with high rationality levels to use formal and informal sources in contrast to solely mass media sources. Since it was shown that the use of other than strict mass media sources is associated with higher functions scores, the problem of correlated bias would again intrude.

Three Variables, Two Controls

It was indicated earlier that it would not be possible to consider simultaneously the "system" and "control" variables in full. However,

266. Such an assumption neglects the possibility that interactions occur, in which case, this sort of analysis is completely invalidated. The factorial analysis gives direct evidence on interactions.

the results of the factorials analyzed to this point indicate that the need for this sort of assessment is less than might have been supposed. Nonetheless, it seemed safer to consider both control variables in relation to the structural dimensions. Involvement, for example, has not yet been examined with respect to the controls.

Two further factorials were produced. The first included the three structural variables with the greatest mean differences in average effect; neighbor relations, dealer relations, and rationality. The second included involvement, commitment, and rationality. Commitment was added because it had to be excluded from the other factorial. Further, the results of the interaction analysis in the factorial that included the five structural dimensions indicated the unique joint distributions of these two, and logically, of course, commitment was defined residually to involvement. Rationality was added because, in one sense, nothing could be lost by its inclusion while, on the other hand, some insight might be gained into the relations of involvement, commitment, and rationality. As will be shown these three tend to be fairly highly correlated in occurrence.

The results of the two factorials are given in Table 17.²⁶⁷ Two features are worth noting. The first is the general stability of all the relationships. Involvement remains unrelated to the functions scores whereas all the remaining structural variables are significantly related to total and latent scores. A one-tailed interpretation is required to show significance for the relationships of commitment and

267. Tables 12-W and 13-W, Appendix A, contain the data on which these results are based. Tables 16-W and 17-W show that the interactions are not significant.

Table 17 - Differences in Mean Scores, Standard Errors, and t Values for Three Structural Dimensions and Two Control Variables.

Variable	Total Scores			Latent Scores			Manifest Scores		
	$\sqrt{\bar{X}_1 - \bar{X}_2}$	$\sqrt{\bar{X}_1 - \bar{X}_2}$	t	$\sqrt{\bar{X}_1 - \bar{X}_2}$	$\sqrt{\bar{X}_1 - \bar{X}_2}$	t	$\sqrt{\bar{X}_1 - \bar{X}_2}$	$\sqrt{\bar{X}_1 - \bar{X}_2}$	t
Dealer	.661	.223	2.96**	.530	.129	4.11**	.131	.173	.76
Neighbor	.935	.294	3.18**	.676	.142	4.76**	.259	.181	1.43
Rationality	.740	.208	3.56**	.579	.120	4.82**	.161	.130	1.24
Definition	1.008	.224	4.50**	.448	.146	3.07**	.560	.180	3.11**
Source	.544	.167	3.26**	.335	.118	2.84*	.209	.130	1.61
Commitment	-.598	.323	1.85	-.348	.184	1.89	-.250	.176	1.42
Involvement	.364	.297	1.23	.230	.194	1.19	.134	.145	.92
Rationality	1.007	.243	4.14**	.806	.177	4.55**	.201	.122	1.65
Definition	.911	.342	2.66*	.447	.216	2.07	.464	.161	2.88*
Source	.447	.260	1.72	.240	.169	1.42	.207	.120	1.72

of market news definition to latent scores in the commitment-involvement-rationality factorial. The differentiating ability of market news definition for manifest score is maintained while the structural variables continue no differential.

The second point worth noting is that market news source fails to show a significant relationship with manifest score in the first factorial even with a one-tailed interpretation. In the second factorial it fails to differentiate any of the three sets of scores. This instability of sources as a control is more apparent than real. The mean differences and their standard errors are both subject to sampling variability.

Even if the actual value of mean difference for the dichotomized variable is such that it would be measured as statistically significant, sampling variability would still lead to some fluctuations in the results of particular "t" tests. This may be the case here. In effect, the five factorials correspond closely to the statisticians' classic "balls in an urn." Each respondent represents one ball with ten values printed on it; three for the functions scores, five for the structural dimensions, and two for the control variables. Instead of reaching into the urn and drawing out balls, the spheroids are preassigned on the basis of whether they are high or low rationality, high or low commitment, and so on. But, for each factorial something occurs that corresponds to the drawing of a new sample — by returning the balls to the urn and redrawing. While in no instance will any of the inscribed values change, the group of persons who constitute a cell change from factorial to factorial. For instance, take the cell containing high commitment, high involvement, diffuse dealer and neighbor relations, and high rationality cases. In the next factorial where market news definition is substituted for involvement some respondents will drop out because they have a USDA type definition and others will be added in who, in the first factorial, were summed for functions score in a different cell. Each factorial, then, represents a new "sample" from the universe of samples possible under the fixed assignments of the independent and dependent variables. The sources variable then might sometimes show "non-significant" test results even when its true value is one which, under the rules of analysis set out earlier, would make the variable a "significant" differentiator.

It is true, of course, that this line of reasoning is two-edged. One could also argue away significant test results with the same rationale. However, one is hard put in this second cutting position when the test results: (1) show differences whose probability of occurrence through sampling variability is low and (2) the tests show stability at these levels through replication. In order to make this situation clearer the mean differences in means over the dichotomies, the standard errors, and t values for all independent and control variables in the five factorials are collected in Table 18. The high stability particularly for the first two columns is readily apparent and needs no comment. Quite naturally, the t value shows somewhat greater variability but they too are markedly limited in fluctuation.

Evaluation of the Structural Dimensions' Relations to Functions Scores

In the preceding section the relations of the structural variables to functions scores were presented. It was found that diffuse dealer relations, diffuse neighbor relations, high rationality, and low commitment were significantly related to higher total and latent functions scores than were their dichotomized opposites. Involvement showed no such significant relationships. None of the structural variables were significantly related to manifest score. Moreover, the control variables did not alter the effects of these structural variables but did themselves constitute sources of significant differentiation in their own right. Respondents with market news definitions which included more types of information than are contained in the USDA program had higher functions scores for all categories; total, latent, and manifest.

Table 18 - Mean Differences in Means, Standard Errors, and t Values for the Structural and Control Variables Collected Over the Five Factorials.⁺

Variable and Function Score	Mean Difference	Standard Error	t Value
Commitment ⁺⁺			
Total	77, 56, 59, 60	30, 30, 30, 32	258, 188, 197, 185
Latent	46, 35, 35, 35	20, 18, 16, 18	237, 191, 223, 189
Manifest	31, 21, 24, 25	17, 16, 18, 18	182, 134, 133, 142
Involvement			
Total	35, 36	23, 30	152, 123
Latent	20, 23	17, 19	116, 119
Manifest	15, 13	11, 14	136, 92
Dealer			
Total	80, 69, 76, 66	19, 22, 18, 22	428, 318, 414, 296
Latent	62, 57, 61, 53	15, 16, 15, 13	421, 363, 409, 411
Manifest	18, 12, 15, 13	14, 14, 14, 17	133, 84, 105, 76
Neighbor			
Total	87, 81, 89, 94	25, 32, 28, 29	353, 252, 323, 318
Latent	65, 63, 64, 68	13, 17, 15, 14	483, 368, 433, 476
Manifest	22, 18, 25, 26	16, 18, 16, 18	136, 101, 151, 143
Rationality			
Total	107, 85, 105	27, 29, 31	396, 292, 335
	74, 101	21, 24	356, 414
Latent	80, 68, 78	14, 19, 16	551, 353, 484
	58, 81	12, 18	482, 455
Manifest	27, 17, 27	17, 15, 17	156, 115, 156
	16, 20	13, 12	124, 165
Definition			
Total	103, 101, 91	32, 22, 34	320, 450, 266
Latent	52, 45, 45	21, 15, 22	248, 307, 207
Manifest	51, 56, 46	15, 18, 16	341, 311, 288
Source			
Total	55, 54, 45	22, 17, 26	246, 317, 172
Latent	29, 33, 24	16, 12, 17	173, 284, 142
Manifest	26, 21, 21	12, 13, 12	214, 161, 172

⁺ All values in the table have been multiplied by 100 and the thousands digit rounded.

⁺⁺ Negative signs on mean differences have been omitted.

The factorial design utilized in this analysis allows an assessment of both the independence of effect for the various structural variables and the possible interactive effect between and among these variables. This section will examine the results with respect to the more general question of whether the defined "structure" constitutes a system and whether such a definition of structure has pragmatic value.

The Structural Dimensions as a System

System can be investigated in two different senses. The first is the degree to which the structural variables jointly affect the dependent variable. Here the question is one of systemic determination of effects. System in this sense will result in the variables assuming a "complex" form where the change in value of any one of the variables alters the effect of all on the dependent variable. The second sense of system is what we call a "simple" form. It is the degree to which the structural variables have joint occurrence irrespective of whether they have "complex" systemic determination. Positive evidence for "simple" system is the non-uniform distribution of the independent variables with respect to one another.

The factorial is intrinsically geared to answer questions about "complex" systems. By controlling out the effects of the remaining structural variables, the independent effect of a single variable could be isolated. The results reported showed that the significantly related variables did have independent effects, irrespective of their impact considered simultaneously. At the same time, and without exception, the relations of the interactions to the various dependent function score means were not significant. In the less rigorous form, simply

as the difference of differences, only 2 of the possible 84 first order "interactions" for the three function scores in the five factorials were statistically significant. A significant difference of difference between commitment and involvement for total and latent scores was found. Interpreted strictly as an interaction, a significant probability level was not attained. Furthermore, the independent effects of involvement were not significant and, in repeated trials, the difference in differences did not continue to be significant. It seems reasonable to conclude, therefore, that the two interactions occurred by chance. This failure to show significant interactions offers evidence of the non-existence of what has been called previously a "complex" system. Without significant interactions there is no evidence that the effect of any of the variables on the function scores changes when the levels of the other variables are changed. This is what interaction means in a factorial analysis. The evidence indicates that the variables in the study which define structure are not systemic in determining consequences.

The answer to whether the variables form a "simple" system is almost unequivocal. Since all the cells of the first factorial contained four or more cases, there cannot be complete correlation among any of the structural variables. The existence of associations among the structural dimensions was also more carefully considered. The independent variables significant in differentiating function scores were investigated by chi-square tests of association, Table 19. Only

Table 19 - Contingencies Among the Structural Dimensions Significant in Differentiating Function Scores.

Structural Dimension and Level	Structural Dimension and Level					
	Rationality		Dealer		Neighbor	
	High	Low	Diff	Spec	Diff	Spec
Commit H	91 (+)*	107	123 (+)	75	93 (-)	105
Commit L	59	99	83	75	81	77
$\chi^2 = 2.77 \quad .1 > p > .05 \quad \chi^2 = 3.30 \quad .1 > p > .05 \quad \chi^2 = .63 \quad .5 > p > .3$						
Ration H			101 (+)	49	79 (+)	71
Ration L			105	101	95	111
$\chi^2 = 14.27 \quad p < .001 \quad \chi^2 = 1.49 \quad .3 > p > .2$						
Dealer Diff					105 (+)	101
					69	81
$\chi^2 = .85 \quad .5 > p > .3$						

* The sign indicates the direction of departure from the theoretically expected number. Only one sign is shown. All the other signs are fixed by the fact that the contingency has only one degree of freedom.

one of the six relations was statistically significant.²⁶⁸ Persons with high rationality levels also tended to have diffuse dealer relations; the magnitude of the chi-square was significant beyond the .001 level of probability. Furthermore, the results of an analysis of all five structural dimensions, utilizing as many levels of each as possible

268. Two of the remaining five test results showed probabilities between .1 and .05. However, in both instances, the meanings of the possible relationships are somewhat anomalous. Persons with high commitment tended also to have both high rationality levels and diffuse dealer relations. But, these levels of structure have contradictory effects on function scores. High commitment is associated with lower functions scores than is low commitment, whereas high rationality and diffuse dealer relations have higher function scores.

without violating the suggested minimum expected frequencies, showed only small differences from those shown by the analysis of the 2 x 2 tables. Involvement showed no significant relations under the null hypothesis with the distributions of any of the remaining four structural variables. In this more extended analysis the degrees of freedom varied between 16 and 25 and, hence, allowed finer variations in the joint distributions to be expressed. The relations of the structural variables to the control variables discussed earlier (see Table 16) are also relevant here. Without reviewing the details, it can be stated that even expanding the definition of system to include the control dimensions does not greatly alter the general unrelatedness among the study variables in terms of joint occurrence.

The conclusion seems justified that the definition of "system" used in the study does not correspond in any simple fashion to units of the existential world. The variables of structure do not cluster markedly to reveal clearly recognizable types. However, this does not critically damage the significance of the analysis. It is part of the sociologist's job to seek out significant typologies where none was generally believed to exist. Current methodology seeks aspects of true, existential systems which are relatively independent both in effect and distribution so as to maximize pragmatic predictive goals under limited knowledge and ways of knowing. The paramount criterion of prediction is our next point of attention.

The Pragmatic Criterion and Structural Dimensions

One of the more important features of factorial analysis stems

from its basis in the analysis of variance. It is possible to partition the total variance observed in the dependent variable among the variables used in classification. It is then possible to assess the amount of total variance accounted for by all of the independent variables together. The greater the amount of variability which can be explained, the higher is the probability of predicting correctly the dependent behavior when given knowledge of the independent variables. Predictability is inextricably part of any pragmatic criterion measuring research.

Following Keyfitz²⁶⁹, we can look upon each observation of the 356 as consisting of a sum of effects independently arising from the particular relationships of the structural dimensions and control dimensions to the given dependent variables, i.e., total, latent, or manifest score. Thus, for example, on latent score, in the case of the factorial including only the five structural dimensions, any single score algebraically is $X_{vwxyz} = m + a_v + b_w + c_x + d_y + e_{vwxyz}$, where m is the grand mean for all 356 observations, a_v is the level of commitment, b_w the type of dealer relations, c_x the type of neighbor relations, d_y the level of rationality, and e_{vwxyz} is the unexplained variability. Any score to be predicted then is predicated on first assuming that the grand mean is the best estimate, plus or minus one-half the observed mean differences in score for the remaining four classification variables. These mean differences represent the effect of the given independent variables on the dependent behavior. In the present example,

269. Keyfitz, op. cit., p. 478.

the independent variables have the following values:

a_1 = high commitment = -.232
 a_2 = low commitment = +.232
 b_1 = diffuse dealer relation = +.310
 b_2 = specific dealer relation = -.310
 c_1 = diffuse neighbor relation = +.324
 c_2 = specific neighbor relation = -.324
 d_1 = high rationality = +.400
 d_2 = low rationality = -.400
 m = grand mean = 3.722

To predict for the cell, high commitment, diffuse dealer relations, diffuse neighbor relations, and high rationality, we take 3.722 (the grand mean); subtract .232 for commitment since high commitment has lower scores than low commitment; add .310 for dealer because diffuse dealer relations have higher scores than specific dealer relations; and, for similar reasons, add .324 for neighbor relations and .400 for rationality. No estimate for involvement is used since the analysis did not show this variable as significantly differentiating. Then the expected value for this cell is 4.524.

In similar fashion, the expected value of each cell can be estimated from the prediction equation. The difference between the sum of squared deviations about this hyperplane and the sum of squared deviations about the grand mean gives an estimate of the amount of total variability explained by the differentiating variables. The total sum of squares about the grand mean is 971.4691 while that about the hyperplane is 813.0307. Hence, the total sum of squares accounted for is 158.4384. The squared standard deviations, or variances, for the mean and the hyperplane respectively are 2.7288 and 2.2838. The variances

about the arithmetic mean and the "regression" hyperplane²⁷⁰ measure the degree to which the mean and the hyperplane fail to characterize the data completely. The difference between the two variances measures the amount of original variability about the arithmetic mean eliminated by knowledge of the structural variables. The proportion of this variability eliminated is given by the ratio of this difference to the original variability (i.e., $2.7288 - 2.2838 / 2.7288 = .1631$) and is the coefficient of determination, r^2 .²⁷¹

Just over 16 per cent of the variance is explained by the four variables used here. Similar results were obtained when latent scores were predicted from the remaining factorials, Table 20. The lowest percentage was derived from the dealer-neighbor-rationality factorial with two controls, 16.2 per cent, and the highest was with the four structural dimensions -- market news definition factorial utilizing the information available on the definition's relation to latent score. No predicting equation was written for the second, two-control factorial because of the absence of differentiating variables.

The percentage of explained variance was less in every case for total scores than for latent scores. This is probably a reflection of wider range of variability, the low correlation between manifest and latent scores, and the non-differentiating quality of the structural dimensions for manifest function scores. For this latter reason, also,

270. Regression is not literally involved here as previously indicated, "the procedure of grouping and working with factors at two levels do not yield direct estimates of regression coefficients." Yates, op. cit., p. 313.

271. See the discussion in Pearson and Bennett, op. cit., p. 146 ff., especially p. 149.

Table 20 - Equation for Predicting Total and Latent Functions Scores and the Per cent of Variance Accounted for by Each.

Factorial and Score	Predicting Equation*	Per cent Variance Explained
5 structural dimensions total score	6.025 \pm .387a \pm .402b \pm .433c \pm .533d	12.54
5 structural dimensions latent score	3.722 \pm .232a \pm .310b \pm .324c \pm .400d	16.31
4 structural dimensions and definition control total score	6.025 \pm .282a \pm .346b \pm .405c \pm .442d \pm .514e	18.73
4 structural dimensions and definition control latent score	3.722 \pm .172a \pm .287b \pm .316c \pm .342d \pm .258e	19.12
4 structural dimensions and sources control total score	6.025 \pm .295a \pm .381b \pm .444c \pm .523d \pm .274f	14.29
4 structural dimensions and sources control latent score	3.722 \pm .176a \pm .307b \pm .320c \pm .390d	17.73
3 structural dimensions and both controls total score	6.025 \pm .330b \pm .468c \pm .370d \pm .504e \pm .272f	16.02
3 structural dimensions and both controls latent score	3.722 \pm .265b \pm .338c \pm .290d \pm .224e \pm .168f	16.22

* Where a = commitment level; b = type of neighbor relations; c = type of dealer relations; d = rationality level; e = market news definition; f = sources of market news.

no predictions were made for scores on manifest functions.²⁷²

All of these prediction equations constitute "explanations" of variance far above chance under the null hypothesis. For the lowest coefficient of determination, five structural variables on total score, the corresponding r^{273} is .354. With 356 observations such a value is highly significant. The tabular value for the .01 level on a four variable multiple coefficient with 200 degrees of freedom is .235 and for 400 degrees of freedom is .167.²⁷⁴ While this had to be taken with caution because multiple correlations tend to rise rapidly due to associations among the error variances as more variables are added, there is still a basis for concluding that the predicting equation is operating above chance.

Of course, the crucial question is whether the predicting equations derived from the variables of the study are substantively meaningful. Certainly the largest part of the variance is left unexplained. However, in view of both the explanatory nature of the study and profes-

272. In a more extended investigation of patterns of manifest functions, particularly the role of market news in the sales situation, no satisfactory account could be made for differentials in usage. See Smith and Sim, op. cit., p. 83 ff.

273. Pearson and Bennett, op. cit., p. 150.

274. Ibid., p. 412.

sional precedents,²⁷⁵ the level of prediction would seem of sufficient magnitude for at least suggesting the need to probe some of the leads turned up thus far in the analysis. This will be the task of the next chapter where data bearing on the functional hypothesis of constraint will be examined.

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275. Keyfitz, upon whose work the analysis to date is largely built, could explain but seven per cent of the total variance in family size. Cf., also, E. M. Rogers, "A Conceptual Variable Analysis of Technological Change," Rural Sociology, vol. 23, (June, 1958) pp. 136-145. F. C. Fliegel, "A Multiple Correlation Analysis of Factors Associated with Adoption of Farm Practices," Rural Sociology, vol. 21, (September-December, 1956) pp. 284-292. J. R. Christiansen, "The Behavioral Correlation of Membership in Rural Neighborhoods," Rural Sociology, vol. 22, (March, 1957) pp. 12-19. C. F. Westoff, P. C. Sagi and E. L. Kelly, "Fertility Through Twenty Years of Marriage: A Study of Predictive Possibilities," American Sociological Review, vol. 23, (October, 1958) pp. 549-556.

The per cent of variance explained and the number of independent variables used in the prediction for these studies respectively are: 16.7 per cent with six; 32 per cent with six; 12 per cent and 33 per cent with six; and, 27 per cent with nine.

Chapter V

The Structural Diminsions and Functional Constraint

Introduction

The present chapter examines the data more closely with respect to the functional hypothesis of constraint. Of the five structural dimensions originally included in the study, dealer relations, neighbor relations, and rationality have been accepted as relevant and valid on all considerations. All three conform to the expected scale pattern and have been shown to be appropriate by the criteria adopted. All three significantly differentiate both total and latent functions scores, though none of them significantly differentiate manifest score. Lastly, all three continue to differentiate when controls for differences in market news sources and market news definitions are instituted.

Propositions concerning the relevance of commitment and involvement were not supported. In the case of involvement, there was some doubt as to whether the index used measured a unidimensional area or a compound of involvement and resignation. Moreover, the dichotomy required for the factorial probably did not represent the data most satisfactorily. Whether the rejection of the involvement variable as significant for differentiating function scores is attributable to these features or to a lack of true relationship could not be made. Under these circumstances it seems fruitless to continue to probe into the role of this factor and, therefore, it will be omitted from further consideration in this chapter.

The appropriate disposition of commitment is considerably more uncertain than that of involvement. Of all the structural variables

originally proposed, it appeared least likely to be unidimensional. Experience in operationalizing the factor supported this expectation. The first working assumption about commitment, however, was that it was linearly related to the dependent variables. As the analysis proceeded, evidence contradicting this assumption appeared. In the factorial, commitment generally was shown to be related inversely to both total and latent scores at statistically significant levels. However, a one-tailed interpretation had to be used for this conclusion. The nature of the commitment index made such an interpretation tenuous. Furthermore, an analysis of variance of function scores using all the levels of commitment showed no significance. The implication of this was that the result obtained in the factorial might have been an artifact of the dichotomization procedure.²⁷⁶ The ambiguity connected with this variable has led to the conclusion that further analysis ought also to be deferred on commitment. Therefore, it will not be considered in this chapter.

The evidence about the "control" variable, market news source, closely paralleled that concerning commitment. It did not maintain a constant relationship with the dependent variables. Of the six assessments of its relationship to latent and total scores, half were not statistically significant and two of the remaining three yielded test results barely significant at the .05 probability level. While these results merit further investigation for the variable, it seemed best

276. It is also true that assumptions of risk were involved in the analysis of variance of commitment using all levels. See pp. 142-143.

here to eliminate it from the analysis.²⁷⁷

Variations in market news definitions were clear cut in their effects. This factor showed an independent effect on all functions scores in all factorials. A broader than the USDA type of definition was significantly related to wider use of information for various functions. Because market news information is the item to which functions were to be imputed under the original design "hypothesis," its incorporation in the analysis was also imperative apart from this research result.

The relation of the function scores to the structural dimensions was also clear cut. Total and latent scores always showed a statistically significant relationship to the structural variables cited above. Manifest scores were only occasionally related. Hence, it did not seem worth while to probe the specific substantive behaviors composing this dependent variable. Since the total score was simply an arithmetic sum of latent and manifest scores, the total score contained no specific behaviors not subsumed in its two components. Therefore, this chapter will be concerned with probing how certain of the structural dimensions are related only to the various specific behaviors constituting the latent functions score.

277. The reasoning behind this exclusion applies to those considered prior. Under conditions of low substantive knowledge about market news attempting to work both with relationships between variables not completely consistent (i.e., commitment and market news source) or with variables ambiguously indexed (i.e., involvement) confounds interpretation. With these conditions, any incongruity in the substance of the data leaves uncertain the source of the "error." Is it in the methodology or is it in the substance? By diminishing the level of possible methodological ambiguity more definite insight into the substance of market news might occur.

A two-dimensional structure will form the backbone for the analysis. On one axis will be the nature of social relationships, and, on the other, the level of rationality. The type of definition of market news will be controlled on both axes in this respect. The distributions of the specific latent functions will be considered with respect to the structure in which they appear and possible or plausible "explanation" given for the distribution as it occurs. In this way it will be possible to gain some insight into the hypothesis of structural constraint. This investigation will also serve as grounds for specific functional hypotheses concerning market news to be verified in future research. This procedure is in accord with the sentiment that,

most hypotheses in survey research are formulated after examining the data. There is nothing intrinsically wrong with this procedure, as long as the hypotheses are subsequently tested on other data. But when the hypotheses are tested on the same data that suggested them ²⁷⁸ then a spurious impression of validity may result. ²⁷⁸

Structural Types and Functional Constraint

Defining the Structural Types

It was shown in Chapter IV that both dealer and neighbor relations had independent effects in the same direction on latent scores when levels of all other variables were held constant. Therefore, a new and rather simple social relations typology can be constructed to simplify the structural types. There are three broad possible types of persons when both of the social relations scales are considered jointly with respect to their effects on latent functions scores. There are persons

278. Selvin, op. cit., p. 526.

who are diffuse in both relationships as well as those who are specific in both. For either of these types the net effect of the component variables on latent scores is unambiguous. Both diffuse dealer and diffuse neighbor relations are correlated with higher function scores, while specific relationships are associated with lower scores.

A third, mixed grouping is also possible. A person could maintain specific relations with his dealer and diffuse relations with his neighbors or vice versa. In either case, the effects of each variable on latent scores should cancel each other. Both variables produced mean differences in latent scores of similar magnitude when they were dichotomized.²⁷⁹ In terms of mean functional scores this mixed grouping falls between the completely diffuse and the completely specific types.

There will be no alteration in the way that rationality is treated. Cross-classification of the new social relations typology with rationality yields six types of structure: diffuse relations, high rationality; diffuse relations, low rationality; mixed relations, high rationality; mixed relations, low rationality; specific relations, high rationality; specific relations, low rationality. The relation of these structural types to each of the various latent functions will be the basis for evaluating the "hypothesis" of structural constraint. These functions will be considered in the descending order of frequency of occurrence in the sample.

279. See Table 18.

Use of Market News as a Convenient Conversation Item

The most common latent function of market news is its use as an easy topic of conversation with others in a variety of informal situations. Data with respect to this function are contained in Table 21.

Table 21 - Use of Market News as a Convenient Conversation Piece Among the Structural Types.

Structural Type	Definition of Market News				Total	
	More than USDA		Same or less		Num-ber	% Yes
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	28	64.3	29	51.7	57	57.9
Specific-Hi Rationality	15	86.7	9	100.0	24	91.7
Mixed-Lo Rationality	50	92.0	48	83.3	98	87.7
Mixed-Hi Rationality	54	88.9	18	72.2	72	84.7
Diffuse-Lo Rationality*	27	96.3	23	100.0	50	98.0
Diffuse-Hi Rationality	40	90.0	14	86.7	54	88.9

Chi-square test	d.f.	χ^2	
Social relations alone	2	23.21	p < .001
Rationality alone	1	1.92	.2 > p > .1
Market news definition alone	1	5.39	.05 > p > .02
Relations and rationality, no control	5	39.69	p < .001
Relations and rationality, USDA definition	4	22.77	p < .001
Relations and rationality, non-USDA definition	4	16.44	.01 > p > .001

* One case, no information. The distribution of cases by structural types for the sample is as shown. In the remaining tables of this chapter showing the distribution of latent functions, unless otherwise noted, deviations from this distribution are attributable to cases of no information.

The most striking aspect of the data is the sharp departure of the specific-low rationality grouping from the remaining five classes. In the comparison without the control for market news definition the latter groupings report frequencies of such use from 84.7 per cent upward. In contrast, only 57.9 per cent of the members of the specific low rationality grouping report a conversational use for market news. This picture does not change greatly with the definition of market news controlled. There is a slight tendency for greater use for all structural classes with definitions of market news broader than the USDA. The distribution of this function by the structural classes is statistically significant both with and without the market news definition control. Most of the variability in the distributions is due to the overappearance of the function in the diffuse groupings and the underappearance in the specific-low rationality class.

Since market news is occupationally specific and has limited interest outside of agricultural contexts, this distribution is perhaps understandable. While farmers of the specific-low rationality type operate in a structure which does not facilitate conversation with others with like occupational interests, all five of the remaining types of structure have at least one facilitative condition for easy and appropriate use of market news in conversation. People who have diffuse relations with either dealer and/or neighbors have many occasions for sociability with others interested in agriculture. Similarly, persons with high rationality scores visit more with occupational specialists than do those with low rationality scores. Thus, the social relations variable is significantly related to the function and in the correct direction at beyond the .001 probability level.

The rationality variable, although in the correct direction, has a probability of occurrence between .2 and .1, Table 21. These five structural classes all have more opportunity to use market news for a convenient conversational item.

The increased opportunity for use hypothesis is sharply focused by asking how the members of the specific-low rationality type can behave in this manner at all, since it is implied that there is so little opportunity for the function to occur. The question can be answered in part by recalling the operational definition of "specific" neighbor relations. Dropping by to see a neighbor without engaging in such more personal social intercourse as picnicking, hunting, sharing trips, and so on was accepted as the second level of intimate neighbor relations. In dichotomizing, this second level was placed in the "specific" relations category. Thirty-one of the 57 specific-low rationality cases were on this second level and only 33 cases of the conversational function for the specific-low rationality grouping were reported. Further probing showed that 17 of the 31 cases from the second Guttman type reported using market news in this conversational manner. If we can assume that most of those persons used market news in the conversational function with neighbors, and evidence to this effect will be given below, then less than half of the occurrences of this function need to be explained possibly by reference to other types of occasions.

Other data also lead support to the interpretation of limited opportunity. When the six typologies are ranked on the basis of the percentage of constituents attending one or more meetings of the Farm Bureau and local cooperatives, or participating in the Soil Conservation

Service (SCS) program, the specific-low rationality grouping was always last, Table 22. The actual percentages for this grouping were low in

Table 22 - Persons Attending Farm Bureau and Coop Meetings and Participating in the SCS Program Among the Structural Types.

Structural Type	Total	Per cent Attending		Per cent Participating in SCS
		Farm Bureau	Coops	
Specific-Lo Rationality	57	10.5	1.7	15.8
Specific-Hi Rationality	24	29.2	20.8	58.3
Mixed-Lo Rationality	98	11.2	13.3	16.3
Mixed-Hi Rationality	72	44.4	40.3	56.9
Diffuse-Lo Rationality	51	15.6	9.8	29.4
Diffuse-Hi Rationality	54	44.4	31.5	48.1

all three areas, being under two per cent for attendance at coop meetings, just over ten per cent attending Farm Bureau meetings and just under sixteen per cent participating in the SCS program. The remaining five structural types ranged from a low of just under ten per cent for coop attendance to a high of just over 40 per cent; from just over sixteen per cent SCS participation to almost 60 per cent; and, finally, from just over eleven per cent to almost 45 per cent on Farm Bureau attendance. In all three cases, high rationality is distinctly related to higher participation. With type of social relations controlled, high rationality types always exceed the low rationality types.²⁸⁰ The magnitude of difference between the specific-high

280. This is true partly by definition but it does not alter the bearing on the hypothesis of opportunity.

rationality and specific-low rationality types is particularly important since here opportunity for both groupings is minimal with respect to neighbors and dealers. If "opportunity" is to be made up, its source has to be the features associated with the rationality dimension. The specific-high rationality class has participation rates in the Farm Bureau and SCS three times greater than those of its opposite and ten times as great attendance at coop meetings.

In addition to being asked whether market news was used for sociable conversation, respondents were asked with whom this was normally done. If the information was not included in the free response, answers were probed to ascertain whether such behavior was carried on with persons not well known. In general, persons with high rationality levels were more given to using market news in this sense with strangers. In the high rationality classes 60 of 129, or 45.8 per cent, were interacting with strangers when using market news as a means of engaging in sociable conversation. In contrast, only 58 of 168, or 34.5 per cent, with low rationality levels included strangers when using market news in this way, Table 23. This difference was significant statistically at a .05 probability level. This general tendency was also reflected in the specific-low rationality class. Of the 33 who did use market news in this way, two in every three indicated they did not talk with persons not well known.

In this respect persons with high rationality levels, irrespective of the type social relations maintained have maximum opportunities for using market news in this way. These opportunities are particularly important for people when their relations are specific. When farmers of this type use market news in this way, they tend to do so with

Table 23 - Persons Who Discuss the Market News They Get With Persons Not Well Known Among the Structural Types.

Structural Type	Total	Per cent Who Discuss Market News	
		With strangers	Friends only
Specific-Lo Rationality	33	33.3	66.7
Specific-Hi Rationality	22	40.9	59.1
Mixed-Lo Rationality	86	31.4	68.6
Mixed-Hi Rationality	61	41.0	59.0
Diffuse-Lo Rationality	49	40.8	59.2
Diffuse-Hi Rationality	48	54.2	45.8

people they know well even though the maintenance of specific relations with neighbors and dealer impairs the development of relationships with other persons with whom market news can be conversed appropriately. This feature would bear hardest on the specific-low rationality class.

In addition to having more opportunities, persons with high rationality levels might see two functions in the use of market news in conversation and consequently be given greater motivation to use. On the one hand, market news may be used to promote and facilitate sociability, while, on the other hand, it may be preliminary to collecting and organizing information to help in the rational planning of marketing. Those with high rationality levels would be expected to see these implications more than those with low rationality levels. Some of the data collected were revealing in this respect.

Respondents were asked in the interview whether they ever used market news information they received to perk up or prime a lagging

Table 24 - Use of Market News as a Conversation Primer Among the Structural Types.

Structural Type	Definition of Market News				Total	
	More than USDA		Same or less		Num-ber	% Yes
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	27	48.0	29	27.6	56	37.5
Specific-Hi Rationality	12	41.7	9	55.5	21	47.6
Mixed-Lo Rationality	48	50.0	46	43.5	94	46.8
Mixed-Hi Rationality	51	60.8	18	44.4	69	56.5
Diffuse-Lo Rationality	28	64.3	23	60.9	51	62.7
Diffuse-Hi Rationality	38	73.7	13	53.8	51	68.6

conversation and with whom this might be done. A pattern similar to the less conscious manipulative use of market news in sociable conversation emerged, Table 24. Fifty-eight and three-tenths per cent of persons with high rationality levels used market news in this "priming" sense while only 48.3 per cent for those with low rationality levels reported such use. This difference had a probability of occurrence under the null hypothesis of between .1 and .05. But, not only did the high rationality cases tend to use market news more often in this way, they also showed greater propensity to do so with people whom they did not know well, Table 25. The difference of 13.7 per cent is statistically significant when evaluated by chi-square.

The explanation of limited opportunity supports the hypothesis of structural congruence. In advancing "limited opportunity" as an explanation, it can be asked whether or not opportunity for using market news in a conversational sense is a result of forced circumstances rather

Table 25 - Distribution of Persons Who Use Market News as a Conversation Primer With Persons Not Well Known Among the Structural Types.

Structural Type	Total	Per cent Who Discuss Market News	
		With strangers	Friends only
Specific-Lo Rationality	21	38.1	61.9
Specific-Hi Rationality	10	50.0	50.0
Mixed-Lo Rationality	44	40.9	59.1
Mixed-Hi Rationality	39	53.8	46.2
Diffuse-Lo Rationality	32	46.9	53.1
Diffuse-Hi Rationality	35	60.0	40.0

than choice, as is implied. It is conceivable that persons in the low rationality-specific class might be new to the community and, hence, more likely to be denied diffuse type relations. Time is often a factor in developing this mode of social intercourse. Again, persons in the low rationality-specific relations class might work off the farm more and have less time to socialize with neighbors and dealer.

Neither of these possibilities are supported by the data. Less than six per cent of the entire sample reported "living around here" less than five years. When the percentages of each type residing in the area eight years or less were compared, three of the five groupings had larger proportions of such newcomers than did the specific-low rationality class, Table 26. Paralleling length of residence was the distribution of "close" friends living in the community of residence. Three of the five groupings had higher proportions of persons who claimed to have "none" or only "a few friends" in the community, Table 27. Members

Table 26 - Years of Residence in the Community Among the Structural Types.

Structural Type	Total	Years of Residence				
		Less than 8	8 to 15	15 to 30	30 or more	Entire life
		- - - - - per cent - - - - -				
Specific-Lo Rationality	57	14.0	12.3	19.2	31.6	22.8
Specific-Hi Rationality	23	13.0	13.0	21.7	34.8	17.4
Mixed-Lo Rationality	97	14.4	15.5	13.4	21.6	35.1
Mixed-Hi Rationality	72	5.6	19.4	34.7	29.2	11.1
Diffuse-Lo Rationality	51	15.7	7.8	21.6	37.3	17.6
Diffuse-Hi Rationality	54	5.6	11.1	27.8	35.2	20.3

Table 27 - Proportion of Close Friends in the Community of Residence Among the Structural Types.

Structural Type	Total	Proportion of Close Friends		
		All or most	About half	None or just a few
- - - - - per cent - - - - -				
Specific-Lo Rationality	57	35.1	31.6	33.3
Specific-Hi Rationality	24	29.2	33.3	37.5
Mixed-Lo Rationality	97	40.2	22.7	37.1
Mixed-Hi Rationality	72	47.2	26.4	26.4
Diffuse-Lo Rationality	51	39.2	23.5	37.3
Diffuse-Hi Rationality	54	61.1	24.1	14.8

Table 28 - Off-farm Employment and Proportion of Total Income This Work Provides Among the Structural Types.

Structural Type	Total	% Working Off- farm	Proportion of Total Income From Off-farm Work*		
			1/2 or less	1/2 to 3/4	More than 3/4
- - - - per cent - - - - -					
Specific-Lo Rationality	57	45.6	16.0	28.0	56.0
Specific-Hi Rationality	24	54.2	76.9	7.7	15.4
Mixed-Lo Rationality	98	48.0	31.9	31.9	36.2
Mixed-Hi Rationality	71	36.6	68.0	12.0	20.0
Diffuse-Lo Rationality	51	37.3	11.1	44.4	44.4
Diffuse-Hi Rationality	54	48.1	58.3	29.2	12.5

* Percentages are computed only on cases where income information is available. Specific-lo rationality had two cases of data missing. All the other types had one case of data missing except the specific-hi rationality and mixed-lo rationality, where complete data was available.

of three of the structural types also reported higher rates of working off the farm, Table 28. All of this evidence points to choice rather than force of circumstances behind limited opportunity.

Opportunity to this point has been considered primarily as physical potentiality to interact in the appropriate fashion. However, opportunity also can be thought of as mental or attitudinal since it is patently true that people in physical proximity need not interact. The social relations variable offers a good inference to attitude in this respect. Persons in diffuse type relations, by the very nature of them, show a more favorable attitude toward sociable interaction than do people in specific type relations. This inclination bears favorably on using

market news in a sociability sense. The distribution of this function by type of social relationship is statistically significant at beyond the .001 probability level and in the correct direction, Table 21.

If the line of reasoning to this point is valid, the data exhibit certain incongruities. In both the diffuse relations and mixed relations classes the degree of use of market news for sociability is higher among those exhibiting low rationality levels than among those with high rationality levels, Table 21. While it might strengthen the explanation if the reverse were true, the existence of sufficient common opportunities for all of the five structural types that are absent for the specific-low rationality type is the most crucial point. This is the major point at which opportunity matters, whereas differences among the other five types of structure with respect to the opportunities they offer for this use of market news are likely to be random. Thus, differences facilitating higher use on the low rationality levels of the same relations types are not statistically significant.

On the evidence presented, the role of differences in opportunity resulting in differences in use continues to loom as a fruitful hypothesis to be tested with new data. The explanation will also be examined where relevant in terms of certain data of this study.

There is another respect in which the ability of market news to function as a conversation topic seems to vary systematically. In the specific-low rationality class, 64.3 per cent of those who define market news more broadly than does the USDA report use of this function whereas only 51.7 per cent whose definition conforms to that of the USDA do so. Similarly, within this structural type, those with USDA type definitions are slightly more prone to confine those conversations to persons they

know well, i.e., 69.2 per cent in contrast to 61.1 per cent. Perhaps respondents with broader definitions of market news can report legitimately for a wider variety of things that they are using as "market news" and thus promote or facilitate sociability since many more of the things that farm people find easy and interesting to discuss will fall within those definitions.

This possibility is given some support by examining differences in the degree of sociability use in the remaining five structural types when the market news definition varies. Three of the five show less of this use with restricted market news definition, while only one shows a slight increase, and the other shows a thirteen per cent increase. The last, however, is based on one cell containing fewer than ten cases. It is also reinforced by comparable data concerning conversation priming, Table 24. Of those whose definitions are broader than that of the USDA, 56.4 per cent report this function. In contrast, only 42.9 per cent of those with definitions more congruent with that of the USDA do so. Five of the six structural types reflect this general pattern. The one exception again involves the smallest class containing but nine cases.

Getting General Educational Material from Market News

The second most frequently occurring latent function in the sample was the role of market news in furnishing ideas of a general educational nature. Often this consisted of calling to awareness or reenforcing an understanding of the simple broad mechanics of the effects of supply-demand relationships on price. At other times, more subtle awarenesses developed. One man said that by getting market news regularly "you appreciate how much all prices are tied together. Long term trends in

agriculture determine ultimate price and profit." Another figured he could make more money by going against majority marketing patterns. A paraphrase of his comment runs, "I watched wheat prices, found out the highest price comes just before the new harvest. Discounting on the farm storage as use of otherwise waste space, it makes sense to hold on to the wheat as long as not too many farmers do it." Irrespective of the level of sophistication of what was learned, this function was distributed among the structural types as shown in Table 29.

Table 29 - Obtaining General Knowledge from Continued Receipt of Market News Among the Structural Types.

Structural Type	Definition of Market News				Total	
	More than USDA		Same or less		Num- ber	% Yes
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	24	95.8	25	40.0	49	67.3
Specific-Hi Rationality	15	86.7	9	77.8	24	83.3
Mixed-Lo Rationality	45	73.3	42	61.9	87	67.8
Mixed-Hi Rationality	51	86.3	16	87.5	67	86.6
Diffuse-Lo Rationality	26	80.8	21	76.2	47	78.7
Diffuse-Hi Rationality	39	94.9	13	84.6	52	92.3
<hr/>						
Chi-square test	d.f.		χ^2			
Social relations alone	2		5.01		.1 > p > .05	
Rationality alone	1		14.71		p < .001	
Market news definition alone	1		16.20		p < .001	
Relations and rationality, no control	5		20.63		p < .001	
Relations and rationality, USDA definition	5		10.44		.1 > p > .05	
Relations and rationality, non-USDA definition	5		18.01		.01 > p > .001	

The most obvious feature of this table is the difference among the high and low rationality classes. Whether the type of relations is held constant or allowed to vary the difference is statistically significant. Given the meaning of rationality, this pattern is certainly to be expected. The ideas reported as having emerged from following market news were overwhelmingly things that constitute rational behavior with respect to farm marketing.

This congruence of the function with the structure in which it occurs can be extended. If it can be assumed that learning has at least a dual experience referent -- variety and number -- then some of the data regarding the conversational function are also relevant here. It may be remembered that persons maintaining diffuse relations were more likely to report such behavior than were persons in mixed relations, and these, in turn, were more likely to do so than were those maintaining specific relationships. This pattern was interpreted as reflecting differences in the number of opportunities to talk with other persons interested in agriculture for whom market news would be a relevant topic. It was also shown that high rationality cases tended not only to have more opportunities for such social intercourse, but also to experience more diversified contacts within their social contexts in the sense that they more often used market news in conversations with strangers. All data concerning this conversational function were intended to be limited to those instances where market news was used in a strict sociability sense. However, the examples the respondents supplied often verified the common sense idea that the use of market news for sociability could blend with more purposive action. That is, the individual would find himself trying to pick up information for its own value either to help

in an immediate sale situation or, we would hypothesize, as possibly relevant for its educational value.

In view of these findings, it is plausible to hypothesize that the most learning from market news would take place among respondents of the diffuse-high rationality types and that the least would occur in the specific-low rationality types, for, in those types of structure both opportunity and motivation are, respectively, at their highest and their lowest. Among the remaining types one might expect motivation to exert more influence than opportunity would. If, in addition, it is assumed that rationality primarily exemplifies motivation toward learning and that type of social relations exemplifies the relative opportunities for learning contexts, then the rank order for proportions using market news in the general educational sense among the remaining four types would run: high rationality-mixed relations, high rationality-specific relations, low rationality-diffuse relations, and low rationality-mixed relations. This is the order shown in the data where definition of market news is not controlled.

It was also argued with respect to the conversational function that persons who define market news more broadly than does the USDA can refer to a wider range of bits of information which they may utilize as conversational gambits of market news. Similarly, such persons should also have wider possibilities for learning.²⁸¹ This is borne out by the data. Of persons with definitions broader than the USDA's, 85.5 per cent gave evidence of this function in contrast to 66.7 per cent for

281. The definitions of market news tended to resemble closely the types of information actually obtained by the respondent.

those persons with definitions of the USDA type. Considered individually, five of the six structural types showed this relation. The sixth showed virtually no difference in this use. Moreover, the rank order predicted above on the basis of "motivation-opportunities" generally held up for both types of market news definitions, though one very noticeable and inexplicable inversion appeared. Among those with definitions more inclusive than the USDA's, the specific-low rationality type had the highest level of use!

As was the case with the conversation function, certain questions can be raised to elaborate the structural typologies in relation to the educational function and, at the same time, underline the rationale of the analysis in this chapter. Thus, questions about differential ability to extract educational material from diversified and numerous contacts could be made. One possible index of this ability is years of schooling completed. The distribution of years of schooling among the six structural types is not uniform, Table 30. Measured by chi-square,

Table 30 - Levels of Formal Schooling Among the Structural Types.

Structural Type	Total	Level of Schooling		
		Grammar or less	Some high school	High school grad or more
		- - - - - per cent - - - - -		
Specific-Lo Rationality	57	73.7	12.3	14.0
Specific-Hi Rationality	24	37.5	20.8	41.6
Mixed-Lo Rationality	98	65.3	15.3	19.4
Mixed-Hi Rationality	72	47.2	18.1	34.7
Diffuse-Lo Rationality	51	68.6	11.8	19.6
Diffuse-Hi Rationality	54	42.6	24.1	33.3

Table 31 - Respondents' Age Among the Structural Types.

Structural Type	Total	Age in Years				
		35 or less	36 to 44	45 to 54	55 to 64	65 and over
		- - - - - per cent - - - - -				
Specific-Lo Rationality	57	12.3	19.3	21.1	21.1	26.3
Specific-Hi Rationality	24	8.3	25.0	16.7	37.5	12.5
Mixed-Lo Rationality	98	10.2	19.4	26.5	26.5	17.3
Mixed-Hi Rationality	71	12.7	23.9	35.2	16.9	11.3
Diffuse-Lo Rationality	51	9.8	29.4	27.4	17.6	15.7
Diffuse-Hi Rationality	54	16.7	27.8	27.8	22.2	5.6

the distribution varies significantly at the .01 probability level. The high rationality types tend to have comparative overabundance of persons with higher levels of formal education. This "ability" criterion does not appear as a result of age differences in the individuals included in the types. The distributions of respondents' ages in each structural type do not differ significantly, Table 31. 282

The typologies in this respect seem to reflect some active choice aspects on the part of the component individuals rather than simply an imposed categorization. Certainly, also, a complete accounting for occurrence of an educational function for market news should include

282. A large part of the variability that is shown is due to the sharp differences in the diffuse-high rationality and specific-low rationality types for persons over 65. The former has almost five times as many persons in the age grouping. This difference does not detract, however, from the main conclusion.

differential ability to learn. However, the center of attention in the present analysis is testing constraint with the dimensions of structure utilized by the study²⁸³ rather than a full explanation of differential distributions for the particular functions. A first requirement for that hypothesis is that the data can be understood plausibly by using the definition of structure adopted. All correlated biases and, hence, other possible explanations, can be neither controlled nor considered. Correlated variables, such as age and education, are considered only when data with respect to them are salient and available.

Use of Surrogates to Obtain Market News

Another possible function of the USDA's program of making market news available to the public through the mass media is the freeing of farmers from the restrictive condition of having to get market news for themselves by permitting them to rely on surrogates for this purpose without increasing the risks of inaccuracy. The distribution of what will be here referred to as the "surrogate" function is given in Table 32. The only apparent pattern is in the significance of the type of social relations maintained. Seventy-one and four-tenths per cent of the diffuse relations, 63.5 per cent of the mixed relations, and 54.3 per cent of the specific relations cases use surrogates to obtain information about markets and marketing. This distribution when evaluated by chi-square has a probability of occurrence between .1 and .05.

This is, of course, the order to be expected from the point of view of the opportunity hypothesis developed with regard to the previous two

283. See the discussion of this point, pp. 30-31.

Table 32 - Use of Surrogates to Obtain Market News Among the Structural Types.

Structural Type	Definition of Market News				Total	
	More than USDA		Same or less		Number	% Yes
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	28	67.8	29	44.8	32	56.1
Specific-Hi Rationality	15	33.3	9	77.8	12	50.0
Mixed-Lo Rationality	50	64.0	48	58.3	60	61.2
Mixed-Hi Rationality	54	50.0	18	61.1	48	66.7
Diffuse-Lo Rationality	28	64.3	23	69.6	34	66.7
Diffuse-Hi Rationality	40	75.0	14	78.6	41	75.9

Chi-square test	d.f.	χ^2	
Social relations alone	2	5.74	.1 > p > .05
Rationality alone	1	1.45	.3 > p > .2
Market news definition alone	1	.77	.5 > p > .3
Relations and rationality, no control	5	7.59	.2 > p > .1
Relations and rationality, USDA definition	5	8.73	.2 > p > .1
Relations and rationality, non-USDA definition	5	8.80	.2 > p > .1

functions. In diffuse relations the scope of ego's interest in alter is both broad and personal enough to make specific designation for obtaining market news a legitimate expectation. The same is not true for specific relations except under unusual circumstances. Even if there is no specific designation of a surrogate,²⁸⁴ a type of surrogating "by accident" could obtain more readily with diffuse relations. It was shown that persons in diffuse relations tend to discuss market news more than do those in specific relations. In any such instance, where market news information was used not solely in its sociability sense, surrogating "by accident" would result if and when the individual did not himself receive the relevant information but got it in the conversational exchange.

While the hypothesis of opportunity is consistent with the data on the use of surrogates, a question as to the need for such persons can be raised. Some data for assessing possible need for surrogates are available. Examination of the proportions of respondents of each structural type working off the farm indicates that the specific relations types and the mixed-low rationality type have three of the four highest rates of off-farm employment (See Table 28). All other factors being equal, farmers employed off the farm should have probably a greater need for surrogates since they would be generally gone from the farm during the times of the day when market news information is normally available. Yet, the three structural types which should have the greatest need for surrogates show the lowest use rates.

284. See the discussion of scoring for this function, p. 113.

This evidence, however, overlooks a fundamental distinction between objective need and subjectively felt need. It has been accepted as axiomatic that action is mediated in terms of the self perceived situation. Need has to be defined from the actor's reference. Some data are available on this point. Respondents were asked if it would make any difference to them if they could no longer get market news information. The distribution of answers among the structural types is shown in Table 33. It can be seen that the specific relations types and the mixed low rationality groupings which have significantly less use of surrogates also have lower felt need for them.

Table 33 - Feeling of Deprivation with Loss of Market News and Why Surrogates Are Not Used Among the Structural Types.

Structural Type	Total	Per cent Who Would Not Miss Market News	Total	Per cent Who Can Get Enough News By Themselves
Specific-Lo Rationality	57	28.1	25	52.0
Specific-Hi Rationality	24	16.7	12	83.3
Mixed-Lo Rationality	98	26.5	38	68.4
Mixed-Hi Rationality	72	9.7	24	79.2
Diffuse-Lo Rationality	51	15.7	17	64.7
Diffuse-Hi Rationality	54	13.0	13	76.9

The factor of preference in defining need is supported inferentially through other data. It was shown above that there are no significant differences on the distribution of number of friends in the community of residence among the structural types and no significant differences on age distributions, Tables 27 and 31. Similarly, there

Table 34 - Available Family Surrogates Among the Structural Types.

Structural Type	Total	Relative Availability of Surrogates from Family		
		Best*	Intermediate**	Worst***
Specific-Lo Rationality	56	8.9	57.4	27.8
Specific-Hi Rationality	24	12.5	58.8	27.4
Mixed-Lo Rationality	97	16.5	65.3	22.2
Mixed-Hi Rationality	72	12.5	58.8	24.7
Diffuse-Lo Rationality	51	13.7	66.7	20.8
Diffuse-Hi Rationality	54	14.8	66.7	30.4

* Consists of unmarried persons living at home or with others present and married persons with grown (i.e., over 18 years old) children at home.

** Consists of married persons with wife present only or with growing children (i.e., all between 5 and 18) present along with wife.

*** Consists of persons who are widowed and living alone, unmarried living alone or married with all children under 5 years of age.

are virtually no differences among the structural types when these are compared on the basis of household composition ranked by the degree of probably opportunity for obtaining surrogates from the family, Table 34.

The explanation of need is also relevant to the non-significant distribution of this function between the two levels of the rationality variable. One might expect that higher rationality levels would be associated with higher rates of use of surrogates, given the motivation connotations ascribed to the variable. Although the distribution was in the correct direction for this proposition, the probability of

occurrence was only between .3 and .2, Table 32. However, it could be argued that those persons with higher rationality levels would also be more willing and likely to get their own information and/or use surrogates. This interpretation is supported by the data. There is virtually no difference between high and low rationality levels on the proportion of members working off the farm (43.6 per cent versus 44.7 per cent). But, 63.1 per cent of the high rationality cases receive less than half their total income from that work in contrast to 22.8 per cent of the low rationality cases. Objective need here expressed is matched by subjectively felt need. Of the low rationality cases, 24.3 per cent would not miss market news if it were unavailable but only 12.0 per cent of the high rationality cases answer this way. At the same time, the high rationality cases were more likely to get the market news they needed themselves if they could not assign a surrogate. Among the high rationality cases, 81.6 per cent of those who did not use surrogates indicated they got all the market news they needed themselves whereas only 62.5 per cent of the low rationality cases indicated this.

With respect to the role of market news definition in the occurrence of this function, it could be argued that definitions more inclusive than the USDA's create greater needs for surrogates since more types of information are required and, other things equal, the more information the individual feels he needs the less likely is he to be able to get it all by himself. However, as was shown in the "priming" function, those who define market news more broadly are also more willing to go out of their way to have contacts and presumably obtain necessary information. The data, Table 32, are inconclusive on

this matter but tend in the direction of the first point. Without controls on relations and rationality the difference is slightly in the direction of greater surrogate use by persons with non-USDA type definitions. With controls on relations and rationality three of the six comparisons involving differences in definition show higher use of surrogates in the groupings with more inclusive definitions, two show slightly less use, and one shows markedly less use in this class.

The tendency of those persons with high rationality levels to be more self reliant for market news would seem to apply also to the joint effects of relations and rationality. Table 32 shows that the same probability of occurrence for the distribution of the function among the structural types exists with or without the market news definition control. In all three, the underrepresentation of the function in the specific relations classes and the overrepresentation in the diffuse-high rationality class accounts for the largest part of the variability. On the opportunity hypothesis as it has been extended above, this is to be expected. However, none of the distributions are statistically significant.

Market News as a Criterion for Esteem Evaluations

Differential esteem exists in every group. Homans in summarizing a number of empirical studies has noted, "the more nearly a member in his activity realizes the norms and values of the group, the higher [is] his rank [i.e., esteem]." ²⁸⁵ The centrality of material well being in American culture and the relation of market news to efficient role

285. Homans and Riecken, op. cit., p. 789.

performance for the farmer in the economic sphere would imply that persons with high rationality levels should have greater use for this function. This assumes that high rationality denotes greater concern with the efficient management aspects of farming.

The possible relationship of market news definition or social relations to this function are not so sharply specifiable. Since differential esteem applies in all types of social relationships and since the function was one simply of use and not relative importance of the criterion, which would tend to dispose higher use in specific relations, no expectation was held for the effect of social relations on the function. Similarly, no expectation was held for the market news definition variable. Differences here might effect esteem judgments in situations where a person with a broader than the USDA type definition might interact with a person defining market news less inclusively. Because of that definition, the latter person could appear as deficient in knowledge to the other and receive, thereby, less esteem. This would be particularly evidenced in structural types with high rationality levels. The necessary information to evaluate this possibility was not part of the schedule.

From Table 35 it is clear that use of knowledge about markets and marketing as a criterion in esteem judgments of others is evenly distributed through all of the structural types. The chi-square test applied to the six structural types, without regard to market news definition, yields a value with a probability between .8 and .7. Repetition of the tests for each definitional class taken separately makes no great difference. Nor are there any significant differences when the structural types are grouped so as to reveal differences with

Table 35 - Use of Market News as a Criterion for Esteem Evaluations Among the Structural Types.

Structural Type	Definition of Market News				Total	
	More than USDA		Same or less		Num-ber	%
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	24	54.2	26	30.8	50	42.0
Specific-Hi Rationality	14	57.1	9	44.4	23	52.2
Mixed-Lo Rationality	49	44.9	45	48.9	94	46.8
Mixed-Hi Rationality	53	50.9	20	55.0	71	53.5
Diffuse-Lo Rationality	27	55.6	22	54.0	49	55.1
Diffuse-Hi Rationality	40	52.5	14	57.1	54	53.7

Chi-square test	d.f.	χ^2	
Social relations alone	2	1.44	.5 > p > .3
Rationality alone	1	1.10	.3 > p > .2
Market news definition alone	1	.24	.7 > p > .5
Relations and rationality, no control	5	2.86	.8 > p > .7
Relations and rationality, USDA definition	5	1.29	.95 > p > .9
Relations and rationality, non-USDA definition	5	5.23	.5 > p > .3

respect to either type of social relations or rationality. The probability of occurrence of the chi-square value for the latter is between .3 and .2. However, five of the six comparisons in which only rationality varies are in accord with expectation. If we assume that there is an equally likely chance for differences to go in either direction, the probability of five in six going in the same direction is .09. This would contribute some evidence for the expectation about rationality.

Market News as a Factor in Evaluating USDA Performance

The perceived quality of market news can evoke evaluative responses from farmers and, in the event that the USDA is known to be the origin of the service, these evaluations are directly transferable in some degree to the USDA as a whole. Thus, the existence of the market news system may function to provide some farmers with a basis for evaluating the USDA. Formulation of evaluations of the USDA through market news involves learning, inasmuch as respondents had to be aware that the USDA was involved in the chain of information dissemination in order to be eligible to have this function attributed to them. This awareness almost necessarily requires learning because the USDA does not greatly publicize its role in market news dissemination. By analogy with the reasoning presented previously with respect to the general educational function, high rationality, the maintenance of diffuse relationships, and the holding of broad definitions of market news would all be most facilitative for this function.

The distribution of this function among the structural types is given in Table 36. Respondents with high rationality levels show 55.9 per cent use in this way in contrast to 27.4 per cent use by those with low rationality levels. Similarly, the proportion of respondents indicating occurrence of this function when they are classified according to the type of social relationships maintained ranges from 51.9 per cent for diffuse relations through 38.2 per cent for mixed relations to 24.7 per cent for specific type relations. The extent of use among those persons with broader than the USDA definitions is 47.7 per cent in contrast to 27.5 per cent for those with USDA type definitions. All of these differences are highly significant statistically

Table 36 - Use of Market News as a Factor in Evaluating USDA Performance Among the Structural Types.

Structural Type	Definition of Market News				Total	
	More than USDA		Same or less		Num-ber	% Yes
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	27	22.2	25	12.0	52	17.3
Specific-Hi Rationality	14	50.0	7	28.6	21	42.9
Mixed-Lo Rationality	49	32.7	46	17.4	95	25.3
Mixed-Hi Rationality	56	62.5	17	41.2	70	55.7
Diffuse-Lo Rationality	28	50.0	22	31.8	50	42.0
Diffuse-Hi Rationality	40	60.0	14	64.3	54	61.1

Chi-square test	d.f.	χ^2	
Social relations alone	2	13.50	.01 > p > .001
Rationality alone	1	28.39	p < .001
Market news definition alone	1	13.79	p < .001
Relations and rationality, no control	5	36.07	p < .001
Relations and rationality, USDA definition	5	18.98	.01 > p > .001
Relations and rationality, non-USDA definition	5	16.89	.01 > p > .001

interpreted by chi-square.

The ordering of the six structural types can also be predicted for this function if the rationale developed for the relative importance of the relations and rationality variables in respect to the general education function is accepted.²⁸⁶ The rank order of the structural types should be: diffuse-high rationality, mixed-high rationality, specific-

286. See pages 185 - 186 this material.

high rationality, diffuse-low rationality, mixed-low rationality, and specific-low rationality. This order is shown generally both with the market news definition controlled and uncontrolled. One small break in the rank order occurs when market news is uncontrolled and when control is added in the cases with definitions at variance with the USDA. This, as well as the previous tests on the evaluative function support the proposition of structural constraint.

The results obtained also do not appear to be attributable to differences in the potentiality for this function but in certain respects appear in the face of adverse possibilities. The USDA indicates itself as the source of market news releases made to the mass media. To the extent that a respondent uses only the mass media for market news he would be expected to have no less and possibly more concentrated exposure to the fact of the USDA's role than those who use other than only mass media sources. Yet as shown in Table 37, the

Table 37 - Sources of Market News Among the Structural Types.

Structural Type	Total	Source	
		Mass media only	Mass media and informal or informal only
Specific-Lo Rationality	52	50.0	50.0
Specific-Hi Rationality	21	38.1	62.9
Mixed-Lo Rationality	95	48.4	51.6
Mixed-Hi Rationality	70	47.1	53.0
Diffuse-Lo Rationality	50	50.0	50.0
Diffuse-Hi Rationality	54	27.8	72.2

distribution of market news sources among the structural types shows that the high rationality cases tend not to concentrate their market news sources with the mass media only and therefore have possibly less exposure to the USDA's role.

Affect Toward Agriculture and Market News

Emotional affect toward farming was an aspect of structure on which it was assumed that the effects of market news would be directly felt. There are major uncertainties inherent in agriculture with regard to income flow, and these are crystallized in the prices that the farm operator receives for his product. Information about current prices is the heart of the USDA program and is included in nearly all respondents' definitions of market news. While it seems reasonable to expect that concern with price uncertainty is differentially distributed in the sample, it also seems reasonable to expect that market information functions implement affective feelings for the occupation more for those persons who are most concerned with uncertainty than for those persons who are less so. News about an area of interest influences the attitudes of more of those persons interested in the field than for those not interested in the area.

Previously it has been argued that rationality indicates the mode of a respondent's adjustment to his circumstances. Whether a high rationality level is associated with an outlook of satisfaction with agriculture or dissatisfaction and is simply a way of making the best of a bad situation is irrelevant to our purpose. Exhibiting behavior which normally promotes maximum monetary income is direct evidence of

a concern with price.²⁸⁷ Moreover, the direction of the affect promoted by market information is not important. What is important is that these individuals probably differ from those with low levels of rationality. The behavior of the latter suggests less interest in price and, relatedly, monetary income from farming. Whether such lower interest is a result of choice or ignorance is also unimportant. In either case, market news should play a less significant role in determining the individual's feelings toward agriculture.

The bearing of social relations on this function is less clear. It could be argued that, without regard for any other conditions, the wider latitude for expression of affect offered by diffuse type relations would induce an association between this type of social relationship and a higher rate of occurrence of this function than for specific type relations with their restricted emotive contexts. The assumption behind this proposition is that affect is contagious. Here a personality variable differentiating what Riesman has called the "inner-directed" and "other-directed" personality types might be significant.²⁸⁸ Affect contagion would be particularly true for the other-directed personality. Riesman has implied that the other-directed character is the current modal type. The inner-directed type, whatever preference for type of social relations, could draw as

287. Further evidence for this contention comes from chapter four. While rationality did not differentiate manifest functions at statistically significant levels, under conventional understandings, all mean differences in the five factorials were in the direction of greater use by persons with higher levels of rationality.

288. See David Riesman, Nathan Glazer and Reuel Denney, The Lonely Crowd, New Haven, Connecticut: Yale University Press, 1950.

much affect from specific relations as from diffuse. The inner-directed character is the typical characterization of the farmer. These cross-checking considerations render an expectation difficult. We do know from previous analysis that persons in diffuse relations both discuss market news more and have wider contacts in their discussions. Similarly, they use market news more both for sociability and "priming" purposes more often. On this basis we can resolve the expectation in favor of greater use for diffuse relation cases.

It would seem reasonable to expect, if the above be true, that the type of social relations maintained would be particularly significant for high-rationality cases, but less significant for low-rationality cases. Since prices are of less concern to the latter type of people, the possibility of more opportunities for discussion should have no great effect. Similarly, for market news definition, the broader the definition the more should market news influence occupational feelings. Again, this influence should be particularly clear in the high rationality cases, but not specially important when rationality is low.

Table 38 contains the relevant data for evaluating these propositions. The distributions of occurrence among the social relations classes, the rationality levels, and the types of market news definitions each taken singly with others left uncontrolled are all statistically significant when evaluated by chi-square. The rates of occurrence for this function are, respectively: diffuse relations, 39.4 per cent; mixed relations, 31.8 per cent; and specific relations, 22.2 per cent; high rationality levels, 41.6 per cent; low rationality

Table 38 - Use of Market News in Effecting Feelings Toward Agriculture Among the Structural Types.

Structural Type	Definition of Market News				Total	
	More than USDA		Same or less		Num-ber	% Yes
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	28	32.1	29	6.9	57	19.3
Specific-Hi Rationality	15	33.3	9	22.2	24	41.7
Mixed-Lo Rationality	50	32.0	48	14.6	98	23.5
Mixed-Hi Rationality	54	46.3	18	33.3	72	43.0
Diffuse-Lo Rationality	28	35.7	23	43.5	51	39.2
Diffuse-Hi Rationality	39	33.3	14	57.1	53	39.6

Chi-square test	d.f.	χ^2	
Social relations alone	2	6.22	.05 > p > .02
Rationality alone	1	7.17	.02 > p > .01
Market news definition alone	1	5.31	.05 > p > .02
Relations and rationality, no control	5	14.28	.02 > p > .01
Relations and rationality, USDA definition	5	3.12	.7 > p > .5
Relations and rationality, non-USDA definition	5	20.40	.01 > p > .001

levels, 26.6 per cent: and, definitions of market news more inclusive than that of the USDA, 36.4 per cent; definitions of the USDA type 24.8 per cent. The expected pattern of decreasing occurrence through the social relations types of the high rationality cases is clearly apparent in the group whose definitions of market news approximate that of the USDA, the percentages being 57.1 for diffuse relations, 33.3 for mixed, and 22.2 for specific relations. Surprisingly, the

same decreasing pattern holds for the low rationality cases.

No comparable effects can be discerned in the grouping whose definitions are broader than that of the USDA. The uniform occurrence of the function in the low rationality cases is the expected one. Just why the decreasing pattern fails to exist for the high rationality cases is an interesting but inexplicable problem. One possible lead might be the content of the definitions of market news most at variance with that of the USDA. Respondents in this grouping and who claimed that their feelings about agriculture were being influenced by the market news they received, could have been selectively referring to that information which is not directly or primarily price oriented. This would tend to be the case particularly among the low rationality cases given their lower price orientation. Concepts of market news which included more than price would tend to obscure the effects of rationality. In contrast, this is less likely to happen with respondents with more limited, USDA-like definitions, since these must involve price data and not much more. Those persons whose definitions were broader than that of the USDA had either none or only one "type" of information falling outside the USDA program.

Although this explanation would account for the failure of rationality to discriminate in the groupings with broader than the USDA type market news definitions and, parallelly, would account for the failure of the expected pattern of social relations in the high rationality cases, it does not resolve, the failure of social relations by itself to be differentially associated with the function for this type definition cases. It must stand as non-confirming evidence for the "opportunity" hypothesis and, in turn, the proposition of structural constraint.

Market News as a Mental Health Mechanism

The two mental health functions will be considered together, even though they are uncorrelated, since the arguments that apply to both are identical. Both functions involve complex psychological mechanisms of personal adjustment to social stimuli. To set out the relation of the social situation to these is extremely difficult, partly because of the welter of ambiguous, often conflicting data in the area²⁸⁹ and, on the other hand, because of the dearth of relevant material in the study. Quite contradictory arguments and propositions of cross-checking effect tendencies could be raised. For example, it has been argued that high rationality indicates a greater concern with farm prices than does low rationality. It was also suggested, in purposing the possibility of mental health functions for market news, that the inherent high uncertainty of agriculture is focused in the prices for farm products. If a fairly high personal anxiety level about the marketing situation exists, one might expect it to be concentrated among those who are more interested in price, i.e., the high rationality cases. At the same time, it is reasonable to argue that persons with higher rationality levels also have more non-emotive and logical resources to cope with their anxiety and, hence, that they have less need to rely on these non-rational mechanisms. In similar fashion a case for contradictory tendencies for low rationality cases could be made which, in brief, would argue less resources but also less need.

The dearth of relevant data in the study focuses primarily on the

289. Cf. Arnold M. Rose, (ed.), Mental Health Mental Disorder: A Sociological Approach, New York: Norton, 1955.

need for a measure of basic personality structure.²⁹⁰ It seems entirely clear that the incidence of any mental health mechanism would involve an interactive equation based on: (1) the nature of the social situation and (2) the basic personality of the participants. Of course, the latter has been at best tentatively inferred to the present without as serious difficulty as is involved for the mental health functions. In the present context, however, to suppose that high rationality cases have greater anxiety would not allow one to specify the simple fact of whether release from anxiety (should it come) would be in succoring or scapegoating. It seemed best, therefore, not to raise propositions about the possible distribution of these two functions but, rather, to simply note the distributions and obtain what insights are possible.

Tables 39 and 40 contain the distributions of the two mental health functions among the structural types. It can be seen that the type of social relations is significantly associated with the succor function, whether the market news definition is controlled or uncontrolled. At the same time, neither rationality nor market news definition classes are significantly related to the function, with or without the other two variables controlled. Rationality and social relations considered without market news definition controlled was highly statistically significant. This was also true for the cases with market news definition at variance with the USDA.²⁹¹ In these last two comparisons the

290. The discussion, pages 202-203, is also relevant here.

291. No statistical test was run for cases with USDA-like market news definitions because the collapsing of cells required to meet the test criteria destroyed substantive meaning. This was also true for both tests of relations and rationality for the scapegoat function with market news definition controlled.

Table 39 - Use of Market News as Succor for Mistakes Among the Structural Types.

Structural Types	Definition of Market News				Total	
	More than USDA		Same or less		Num-ber	%
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	28	0.0	25	4.0	53	1.9
Specific-Hi Rationality	14	0.0	9	22.0	23	8.7
Mixed-Lo Rationality	49	18.4	44	9.1	93	14.0
Mixed-Hi Rationality	48	14.6	16	6.2	64	12.5
Diffuse-Lo Rationality	26	23.1	22	22.7	48	22.9
Diffuse-Hi Rationality	39	33.3	14	21.4	53	30.2

Chi-square test	d.f.	χ^2	
Social relations alone	2	18.28	$p < .001$
Rationality alone	1	2.01	$.2 > p > .1$
Market news definition alone	1	1.41	$.3 > p > .2$
Relations and rationality, no control	5	20.70	$p < .001$
Relations and rationality, non-USDA definition	4	14.62	$.01 > p > .001$

Table 40 - Use of Market News as a Scapegoat for Mistakes Among the Structural Types.

Structural Type	Definition of Market News				Total	
	More than USDA		Same or less		Num-ber	%
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	27	0.0	27	3.7	54	1.9
Specific-Hi Rationality	15	0.0	9	22.2	24	8.3
Mixed-Lo Rationality	50	8.0	29	8.2	99	8.1
Mixed-Hi Rationality	53	9.4	17	5.9	70	8.6
Diffuse-Lo Rationality	27	11.1	23	4.3	50	8.0
Diffuse-Hi Rationality	40	7.5	14	7.1	54	7.4
<hr/>						
Chi-square test		d.f.	χ^2			
Social relations alone		2	1.71	.5 > p > .3		
Rationality alone		1	.51	.5 > p > .3		
Market news definition alone		1	.001	.98 > p > .95		
Relations and rationality, no control		3	2.66	.5 > p > .3		

largest part of the variability was attributable to overrepresentation of the function in the diffuse-high rationality type and underrepresentation in the specific-low rationality class. Whatever else may be involved in the dynamics of this mechanism, it would appear that diffuse relations facilitate this function.

The scapegoating mechanism is distinguished by its extremely low incidence in the total sample as well as its rather even distribution among the six structural types, particularly without the definition of market news controlled. None of the distributions among any of the structural variables is statistically significant.

Non-solicited Latent Functions and Market News

The final contribution to the latent function score was derived from an open ended question which sought to discover if missing market news information would make a difference to the respondent. Affirmative answers were probed to ascertain why it would be missed and these responses were categorized as indicating manifest and/or latent functions being served by market news in that case. The crucial point of this function is saliency of latent functions. However, respondents were not made aware of the manifest-latent distinction along which their answers were categorized. As a result of this non-awareness, the most reasonable expectation of pattern would be one of equal distribution among the structural types since chance alone should be involved in determining the occurrence of the function. Similarly, since none of the structural dimensions implies latency as such, chance alone should determine the distributions by the various levels of these variables. Table 41 shows the relevant distributions. Irrespective of the variable examined, an extremely uniform distribution exists with none deviating from a chance pattern.

These results, while bearing out the expectation, also testify favorable for the methodological procedures of the study in an interesting manner. A number of the questions for obtaining information on the functions on their face might appear to have an articulate or cognitive bias. However, the distribution of answers for the saliency function closely matches the distribution of education in the sample. Fifty-eight and one-tenth per cent of the sample members had no more than a grammar school education, 16.7 per cent had some high school training, and 25.2 per cent were at least high school graduates.

Table 41 - Non-solicited Latent Functions of Market News Among the Structural Variables.

Structural Type	Definition of Market News				Total	
	More than USDA		Same or less		Num-ber	% Yes
	Total	% Yes	Total	% Yes		
Specific-Lo Rationality	28	10.7	29	13.8	57	12.3
Specific-Hi Rationality	15	6.7	9	22.2	24	12.5
Mixed-Lo Rationality	50	18.0	48	8.3	98	13.3
Mixed-Hi Rationality	54	14.8	18	22.2	72	16.7
Diffuse-Lo Rationality	28	14.3	23	13.0	51	13.7
Diffuse-Hi Rationality	40	12.5	14	14.3	54	13.0
<hr/>						
Chi-square test		d.f.	χ^2			
Social relations alone		2	.29	.9 > p > .8		
Rationality alone		1	.16	.7 > p > .5		
Market news definition alone		1	.02	.9 > p > .8		
Relations and rationality, no control		5	.69	.99 > p > .98		

Of sample members who indicated latent functions for market news in responding to this question, 66.7 per cent had no more than grammar school, 12.5 per cent had some high school training, and 20.8 per cent were at least high school graduates. There is, thus, a slight tendency for persons indicating latent functions for market news in spontaneous exchange to have lower education levels than those who suggest only manifest functions. If there was a cognitive bias in the schedule, it might be expected that persons indicating latent functions for market news would have more formal education.

Overall Evaluation of the Evidence for Structural Constraint

This chapter has attempted to evaluate the evidence relevant to the hypothesis of structural constraint, though this evaluation could not constitute a formal test. As a theoretical guide in analysis, the hypothesis of structural constraint was expressed as an "opportunity-motivation" mechanism which, in turn, as it was developed and extended suggested some relations between the limited structural dimensions used and the specific behavior construed as possible latent functions for market news. Although this explanation could not be extended equally well to all the specific functions and although necessary data was not always available to adequately investigate relationships, it can be seen from Table 42, which summarizes the various relevant tests, that there is considerable evidence supporting the opportunity-motivation proposition. Of the 54 possible relationships set out by the table, 23 could not be interpreted meaningfully by the data available.²⁹² Twenty-five, or slightly over four-fifths, of the remaining tests supported the explanatory proposition. The remaining six relationships were inconclusive, i.e., certain evidence for and against the "expected" distribution patterns was found which denied clear evaluation. Thus, the opportunity-motivation interpretation with reasonable plausibility related the structural types to a rather wide and disparate range of behavior. Inasmuch as the data at least hang together on the skeleton of this proposition, there is, then, some evidence for the validity of structural constraint. Definitive tests

292. These are designated as N.A. or "not applicable" in Table 42.

Table 42 - Summary of the Support for Functional Constraint in the Relationship of the Structural Dimensions and the Latent Functions.

Latent Function	Structural Dimension					Number of Tests "Supporting"
	Social relations	Rationality	Market news definition	Relations and rationality, no control	Relations and rationality, USDA definition	
Conversation	Support	Support	Support	Inc	Inc	3
Education	Support	Support	Support	Support	Support	6
Surrogates	Support	Support	Inc	Support	Support	5
Esteem	N.A.	Inc*	N.A.	N.A.	N.A.	0
Evaluation of USDA	Support	Support	Support	Support	Support	6
Affect toward farming	Support	Support	Support	Support	Inc	5
Success	N.A.**	N.A.	N.A.	N.A.	N.A.	0
Scapegoat	N.A.	N.A.	N.A.	N.A.	N.A.	0
Saliency	N.A.	N.A.	N.A.	N.A.	N.A.	0
Number of tests "supporting"	5	5	4	4	3	25

* Inc = inconclusive
 ** N.A. = not applicable

must await the further research, which is the appropriate next step from post-factum interpretations. Furthermore, such research vitally needs a strong time dimension to assess whether any specific latent function is contributing to the maintenance or change of the structure constituted by the relevant variables. In the current study the implicit assumption has been that the functions are consonant with past structure and, hence, contribute solely to maintenance. This assumption needs checking and elaboration.

Chapter VI

Summary and Conclusions

This study has invoked a limited type of functional analysis to explore substantively and explain certain uses of market news information by a sample of 356 Michigan farmers who get such information. This analytical model was chosen because it seemed capable of compensating for a number of deficiencies in previous research.

There are few substantive studies of market news by rural sociologists. Those that have been done characteristically have been confined to eliciting empirical generalizations. Little or no attempt has been made to interpret the results obtained in any single study; to codify the data from different studies in any theoretic system or even to utilize analytical concepts which can be readily related to current theory. Furthermore, what investigations have been made into market news have confined attention to only the manifest consequences of the formal USDA programs of market news dissemination. All of these features offend the commonly assumed relations between theory and research.

Studies in "effects" of mass communication by which this study might also have been guided were also found to be inadequate for this purpose. Mass communication studies tend to injudiciously lump communication and effects of communication as a single phenomenon with attendant analytical (and practical) difficulties.²⁹³ In addition, most such research has been "practically" oriented with a "problem" alleviating motivation. On the one hand, such research problems tend

²⁹³. See the discussion pp. 11-16.

to be posed in essentially unanswerable forms -- "what type of appeal is more effective" studies -- and on the other hand, the definition of the major problem as that of studying the effectiveness of a given communication system, structure or situation results in a concern with only manifest consequences. When the effects of mass communication are studied empirically, interest has been limited to manifest function. When latent functions are focal, empirical inquiry has been ignored.

It was argued that studies of effects had to be separated from studies of communication. In this way the limits of a middle range communication theory and its congruence with models explicating effects of communication could be expedited as well as forcing interest in the particularly sociologically relevant phenomena of latent functions. Furthermore, while interpretation of data is vitally necessary, the framework for that analysis should be delimited rather than global so that research can be posed in answerable terms from research.

Functional analysis rectifies the above shortcomings. Its central tenet is simply that of "interpreting data by establishing their consequences for larger structures in which they are implicated." A supplementary requirement is that in assessing consequences a conceptual distinction be made between the cases in which subjective aim-in-view coincides with the objective consequence and those in which they diverge. In these circumstances, both latent and manifest consequences will be investigated. It was argued that functional analysis most fruitfully is understood as a general analytical model applicable throughout science rather than in its substantive and historical ties to certain dubious assumptions in sociology.

The item to which function was imputed was the fact of a given type of communication, namely, market news information received by farmers. The structure in which the item operated was defined at the individual status level and originally was five dimensional, including: involvement, the social psychological preference for and identification with agriculture as a means of employment; commitment, the degree to which non-preference factors of economic cost tie the individual to agriculture as an income source; characteristic relations with farm neighbors and with one's dealer for the major product sold, both separately measured on a diffuse-specificity axis; rationality, the degree to which supplementary agricultural information sources are used and managerial practices followed which would normally tend to maximize farm income.

The potential functions of market news within this structure were separated as latent or manifest on the basis of the intent of the USDA program. The fact that the research was financed by the USDA for edification of its program prompted this definition. The manifest functions investigated were:

1. To guide economic decisions about such aspects of marketing as when, where, how much, in what form and what price to expect and/or charge.
2. To serve as a criterion for making changes in production plans.
3. To provide a partial basis for evaluating dealer honesty and the efficiency of local marketing arrangements.

The latent functions included:

1. To act as a resource in interpersonal relations either as a convenient conversational topic in a general sense or as a means for priming lagging conversation.
2. To influence affect toward agriculture.

3. To be a source of new ideas or concepts -- to provide a general educational mechanism.
4. To serve a mental health function by offering a convenient and simple target for hostility derived from dissatisfaction in other areas -- scapegoating -- or to offer "succor" in the knowledge that expert information is not always correct.
5. To provide a criterion (among others) for according esteem judgments.
6. To permit surrogates to perform the task of obtaining data necessary to farm management.
7. To partially evaluate the USDA's performance of service to farmers.

Controls on the farmers' definition of market news and the sources of that information were deemed necessary. In this way communication and effects could be analytically distinguished and the empirical significance of the former on effects neutralized.²⁹⁴ This distinction was also necessary to maintain similarity on the item to which function is imputed.

The organizing "hypothesis" for the study was a general extension of the idea that the range of variation in the items which can serve designated functions in a social structure is not unlimited. There is a structural constraint. The particular function of a given item is the result of the structural context in which it is entered. It was recognized as a post factum interpretive schema and, hence, definitive evidence for it and evaluation of it could not be made with the data in hand. At the same time, however, this orientation focused attention on interpretations based on the interrelations of data. The dimensions of

294. Separating communication and effects of communication does not mean communication is an unimportant variable determining any given effect. The two phenomena are highly related.

structure defined were meant as systemic elements of low enough inter-relations to maximize independent effects (and hence boost prediction) and high enough to justify the assumption of systemic determination implied in the functional hypothesis of constraint.

Certain general problems of analysis were involved in bringing the data to bear on this guiding hypothesis. In particular certain decisions had to be made in light of the controversy regarding the place of tests of significance in survey research. It was precipitated in this fashion. The study eschewed the substantive historical referent (i.e., society) for assigning the larger structure to which the item for functional analysis is implicated. Because of the survey methodology, the time dimension to utilize Merton's conception of net balance of effects for more delimited functional analysis was not possible. At the same time, structure was not defined in terms of a boundary-maintaining social system. It seemed vital, therefore, to justify the "structure" defined. How then justify?

Given acquiescence to sociology as science, empirical methods were deemed necessary. Objective criteria for accepting or rejecting evidence then are required. Tests of significance afford such a principle. Hannah Selvin, speaking for those who would abandon all such tests in survey research, argues that all correlated biases are not removable under these research conditions. Therefore, tests of significance are ridiculous and useless because they identify only sampling variability as the source of differences in obtained results not produced by the experimental variable. Until all correlated biases can be removed, tests of significance have no place in survey research. In contrast,

it was argued, with McGuinnis, that such tests are legitimate to survey research so long as it is recognized that a result from them does not mean a definitive causal relation has been established. All correlated biases have not and cannot be removed but tests of significance do provide objective criteria for Type II hypotheses, the current best approximation to full causal understanding.²⁹⁵

At the same time, Selvin's emphasis on the obvious interrelations of social phenomena could not be overlooked even though it often is when simple correlation studies utilize tests of significance. There is some need to control for intercorrelations. However, the procedures for statistically controlling for correlated biases are often based upon assumptions not generally met by sociological data. Extensive cross-tabulating with appropriately met techniques is a procedure alien enough to be conveniently forgotten in most studies.²⁹⁶ In order to achieve some control over these intercorrelations without making grossly dubious assumptions about the nature of the data, a factorial analysis of variance model (after Keyfitz) was chosen as the judicious model for analysis. It allows for an assessment of the differentiating ability of the structural dimensions while it permits controlling a maximum number of variables under limited sample size.²⁹⁷ This assess-

295. See the discussion pp. 47-53 for a fuller review of this highly important question.

296. See the comprehensive summary of rural sociological research in Edmund de S. Brunner, The Growth of a Science: A Half-Century of Rural Sociological Research in the United States, New York: Harpers, 1957, esp. p. 148.

297. See the discussion pp. 53-58 and 125-135.

ment is a pre-requisite for defining the structure to which the functional hypothesis of constraint would be assessed.

The five structural dimensions were to be operationalized by Guttman scaling techniques in order to minimize the cutting point problem since the factorial design required dichotomies for all independent variables.²⁹⁸ The variables of social relations and rationality produced such scales and were shown as valid both substantively and with the more carefully worked out conventional methodological standards. Commitment and involvement did not meet the criteria of acceptable scales and, therefore, were operationalized by arbitrary indexes.²⁹⁹

Information for all of these scales, as well as for the occurrence of the functions, was elicited through lengthy personal interviews conducted with schedules by trained interviewers using directed probes. Interviewing was conducted during the summer of 1957. The sample, selected through a cluster procedure, was meant to be representative of lower peninsula Michigan agriculture. It was shown that this procedure on the basis of functions scores obtained greater homogeneity in the sampling units than expected. This fact did not bear on the present study in ways that could not be corrected but it does raise cautions for error estimates on the occurrence of structure and of functions.

The number of functions scored as being served for any respondent,³⁰⁰ separated by the manifest-latent distinction, and then summed

298. See the discussion pp. 77-79 on the problems of cutting points in sociology.

299. See pp. 74-101.

300. See pp. 102-114 for the detail of the scoring procedure.

over these for a "total" functions score, constituted the three dependent variables for the factorial analysis. The five structural dimensions, dichotomized at points which would yield to the extent possible an even number of cases in each class, were used as the independent variables. After assessing this procedure as a reasonable working assumption, five different factorial arrangements of the independent variables and the control variables were established to assess the differentiating power and the independence of effects of the independent variables and to cross-check possible interactive effects between differing levels of each.

It was found that rationality and both types of social relations significantly differentiated total and latent scores and that none of these significantly differentiated manifest scores. High rationality levels and diffuse relations were associated with higher levels of functions usage.

Involvement showed no differentiating ability on any of the scores in any of the factorials. Commitment was ambiguous, sometimes showing statistically significant differences and at other times not. When significant, high commitment was inversely related to functions scores. In this respect, market news programming faces a paradox. The USDA Market News Service program is meant to help the farmer adjust his occupational role to maximize income, but it is those who are most in need of this adjustment process who least use market news in this way.

The picture on relations of the structural dimensions to the functions scores was not changed when the control dimensions were added. But, it was found that market news definition itself significantly

differentiated functions for all three scores. Those definitions of market news which were more inclusive than the USDA definitions, as manifested in the content of its formal program, were associated with higher occurrence of the functions. The sources of market news dichotomized as those which used only mass media for market news and those which used mass media plus personal sources or personal sources only, like commitment, were ambiguous. Sometimes statistically significant differences occurred, sometimes not.

It was concluded on evaluation of the structural variables that both involvement and commitment could not be given detailed attention in the further analysis but, at the same time, they should not be dismissed as unimportant structural dimensions affecting market news functions. Their inability to consistently differentiate functions scores could easily have been the result of inadequate measuring techniques and procedures. Some evidence for this was presented. The need for more research here was pointed out and urged since both these variables are more highly rationalized in theoretic terms than the remaining three and because it seems as though they should be particularly relevant to manifest functions.

The overall inability to significantly differentiate manifest scores was suggested as probably not due to measurement deficiencies but a result of possible low level relations of the structural variables.

With regard to the defined structure as an empirical system, it was found that all of the structural dimensions were independent in their effects when they were significant and control had been exercised over the remaining structural variables. The lack of significant

interactions in the factorials further emphasized the statistically independent effect of the variables and implied the non-existence of what was called "complex" system.³⁰¹ Since only high rationality level and diffuse dealer relations of all the structural variables considered in joint occurrences required rejection of the null hypothesis, it was concluded that the structure empirically defined does not denote conspicuously occurring emergent types. However, this condition was not assessed as being of overbearing importance. It is part of the sociologists's job to detect significant typologies where none were previously conceived. Current methodology seeks aspects of true, existential systems which are relatively independent both in effect and distribution so as to maximize pragmatic predictive goals. This pressed forward the criterion of prediction.

On the basis of the factorial evidence, multiple regression type predicting equations were set up. The percentage of total variance explained by the variables significant in differentiating functions scores ranged for total score between 12.54 and 18.73 per cent and between 16.22 and 19.12 per cent for latent scores over the various factorials. The largest part of variability was left unaccounted for. However, it was deemed justified, on the basis of professional precedent and the objective tests of significance criterion, to conclude that at least certain aspects of the defined structure were important factors in mediating functions for market news. All of the multiple "regression" coefficients corresponding to the coefficients of

301. See pp. 57-58.

determination (i.e., the percentage of total variance accounted for) were statistically significant.

Structure then was redefined on the above evidence. Only those variables that were completely ubiquitous and significant were used. A two dimensional "structure" then emerged. On one axis was rationality and on the other the nature of social relations. Social relations were classed as diffuse, mixed, or specific on the basis of the cross-classed position of the neighbor and dealer scales. Placement in the diffuse dichotomy cell on both scales positioned a person as diffuse. Mixed types involved diffuse relations on one scale and specific on the other. Six structural types then were obtained and these examined relevant to the nine specific behaviors construed as the latent functions.

A rationale was evolved which posited high rationality as indicating relatively greater concern with price (or maximizing income) and, hence, implicating certain motivations, and diffuseness as offering the greatest opportunity for discharging certain behaviors stemming from these motivations on a continuum through least opportunity for specific relations for discharging and enacting the functions. It was shown to be consistent in explicating differences in the specific latent function behaviors. The fact that this rationale could be derived as a working hypothesis from the notion of functional constraint and could plausibly tie the disparate behaviors together in a logical fashion was taken as evidence for the validity of the study guide of functional constraint though it could not be taken as a formal test. More definitive evidence for both the working hypothesis of "motivation-opportunity" and, in turn, functional constraint requires pre factum hypothesis testing on new data; a procedure recommended on the basis of this study.

APPENDIX A -- Working Tables

Table 1-W - Disposition of the Original Sample by Sample Segments.

County	Township	Complete Interviews	Not a Marketing Decision-maker	Refusal	Not Home
Allegan	Cheshire	8	12	0	0
	Martin	11	13	1	0
Barry	Prairieville	14	19	0	0
Berrien	Weesaw	14	12	0	0
Branch	Noble	16	10	0	0
Charlevoix	South Arm	20	11	0	0
Clinton	Riley	7	12	1	1
Emmet	Readmond	9	11	0	0
Gladwin	Bourret	3	16	0	0
Gratiot	Pine River	18	29	0	0
Hillsdale	Reading	10	10	1	0
Huron	Sigel	18	3	0	0
	Windsor	16	16	0	0
Ingham	Aurelius	17	16	0	0
Ionia	Berlin	14	16	1	0
Lapeer	Attica	10	12	0	0

Table 1-W - (Continued) Disposition of the Original Sample by Sample Segments.

County	Township	Complete Interviews	Not a Marketing Decision-maker	Refusal	Not Home
Livingston	Conway	17	12	0	0
Macomb	Ray	14	17	0	0
Mason	Custer	15	14	0	0
Mecosta	Colfax	11	11	0	0
Midland	Hope	9	23	0	0
Monroe	London	7	23	0	0
Muskegon	Sullivan	11	34	0	0
Oakland	Oakland	9	90	0	1
Oceana	Claybanks	20	9	0	0
Osceola	Highland	6	13	0	0
Presque Isle	Case	6	8	0	0
Saint Joseph	Nottawa	8	9	0	0
Sanilac	Buel	16	9	0	0
Tuscola	Arbela	10	22	0	0
Washtenaw	Saline	11	9	1	0
Total		375	521	5	3

Table 2-W - Distribution of the Structural Variables by Sample Segments.

County	Segment	Structural Dimension and Level									
		Commitment		Involvement		Dealer		Neighbor		Rationality	
		Hi	Lo	Hi	Lo	Diff	Spec	Diff	Spec	Hi	Lo
Allegan	2	0	2	1	1	0	2	1	1	1	1
	3	4	2	4	2	4	2	2	4	0	6
	4	1	0	0	1	0	1	0	1	1	0
	5	3	2	2	3	4	1	1	4	3	2
	6	1	3	3	1	3	1	1	3	3	1
Barry	1	0	2	2	0	1	1	0	2	2	0
	2	2	4	3	3	5	1	4	2	1	5
	3	4	2	4	2	4	2	1	5	4	2
Berrien	1	3	1	1	3	1	3	1	3	2	2
	2	3	3	4	2	2	4	2	4	2	4
	3	3	1	1	3	2	2	2	2	0	4
Branch	1	2	4	4	2	3	3	4	2	2	4
	2	1	2	2	1	1	2	2	1	1	2
	3	1	4	3	2	4	1	4	1	2	3
Charlevoix	1	4	4	5	6	8	2	4	6	6	4
	2	1	1	1	1	1	1	1	1	1	1
	3	2	4	2	4	4	2	5	1	4	2
Clinton	1	1	0	1	0	1	0	1	0	1	0
	2	2	0	2	0	1	1	2	0	1	1
	3	2	1	2	1	1	2	2	1	1	2
Emmet	1	2	3	1	4	3	2	4	1	2	3
	2	4	0	1	3	2	2	3	1	2	2
Gladwin	1	0	1	1	0	1	0	0	1	0	1
	2	1	0	0	1	1	0	0	1	0	1
	3	0	1	0	1	0	1	0	1	0	1
Gratiot	1	3	4	4	3	2	5	1	6	3	4
	2	2	2	1	3	3	1	0	4	0	4
	3	4	1	3	2	4	1	3	2	2	3
Hillsdale	1	4	0	4	0	1	3	2	2	3	1
	2	1	3	3	1	2	2	4	0	1	3
	3	1	1	1	1	0	2	0	2	0	2
Huron	1	4	1	2	3	1	4	4	1	3	2
	2	6	2	3	5	4	4	6	2	1	7
	3	2	2	1	3	3	1	2	2	1	3

Table 2-W - (Continued) Distribution of the Structural Variables by Sample Segments.

County	Segment	Structural Dimension and Level									
		Commitment		Involvement		Dealer		Neighbor		Rationality	
		Hi	Lo	Hi	Lo	Diff	Spec	Diff	Spec	Hi	Lo
Huron	4	3	2	3	2	4	1	2	3	3	2
	5	1	2	0	3	3	0	0	3	2	1
	6	4	3	1	6	7	0	4	3	2	5
Ingham	1	3	3	2	4	2	4	1	5	2	4
	2	2	3	2	3	4	1	3	2	2	3
	3	3	2	4	1	3	2	1	4	3	2
Ionia	1	1	3	1	3	2	2	2	2	0	4
	2	4	2	1	5	2	4	4	2	3	3
	3	2	2	2	2	3	1	3	1	2	2
Lapeer	1	2	3	3	2	2	3	2	3	1	4
	2	3	0	1	2	3	0	3	0	2	1
	3	1	1	0	2	0	2	1	1	1	1
Livingston	1	5	2	4	3	3	4	4	3	4	3
	2	1	3	1	3	1	3	1	3	3	1
	3	2	3	2	3	0	5	3	2	3	2
Macomb	1	2	1	2	1	2	1	2	1	2	1
	2	3	1	2	2	3	1	4	0	1	3
	3	5	1	4	2	3	3	6	0	2	4
Mason	1	3	4	2	5	5	2	1	6	5	2
	2	5	1	2	4	6	0	2	4	4	2
	3	1	1	0	2	1	1	1	1	0	2
Mecosta	1	2	2	1	3	3	1	2	2	1	3
	2	1	2	2	1	1	2	1	2	1	2
	3	1	3	1	3	1	3	1	3	2	2
Midland	1	0	2	0	2	0	2	0	2	0	2
	2	1	2	2	1	1	2	1	2	1	2
	3	0	2	0	2	1	1	2	0	0	2
Monroe	1	2	2	4	0	2	2	1	3	2	2
	2	1	0	0	1	1	0	1	0	1	0
	3	0	2	1	1	1	1	2	0	0	2
Muskegon	1	1	2	1	2	1	2	2	1	0	3
	2	4	1	0	5	4	1	1	4	0	5
	3	2	1	2	1	0	3	2	1	0	3

Table 2-W - (Continued) Distribution of the Structural Variables by Sample Segments.

County	Segment	Structural Dimension and Level									
		Commitment		Involvement		Dealer		Neighbor		Rationality	
		Hi	Lo	Hi	Lo	Diff	Spec	Diff	Spec	Hi	Lo
Oakland	1	5	2	5	2	4	3	4	3	4	3
	2	0	1	1	0	0	1	1	0	0	1
	3	1	0	0	1	1	0	0	1	1	0
Oceana	1	7	1	4	4	6	2	0	8	6	2
	2	2	2	1	3	3	1	4	0	3	1
	3	4	4	2	6	4	4	1	7	3	5
Osceola	1	2	1	1	2	2	1	3	0	3	0
	2	3	0	2	1	2	1	1	2	1	2
Presque Isle	1	0	1	0	1	1	0	1	0	0	1
	2	1	0	1	0	1	0	0	1	1	0
	3	3	0	0	3	3	0	3	0	2	1
St. Joseph	1	2	0	1	1	1	1	0	2	0	2
	2	2	1	3	0	3	0	2	1	1	2
	3	1	2	2	1	1	2	0	3	2	1
Sanilac	1	2	1	3	0	3	0	0	3	1	2
	2	2	1	1	2	2	1	1	2	1	2
	3	6	4	2	8	8	2	6	4	5	5
Tuscola	1	1	2	2	1	1	2	2	1	2	1
	2	3	2	1	4	4	1	2	3	0	5
	3	1	1	0	2	1	1	1	1	0	2
Washtenaw	1	2	0	2	0	2	0	2	0	2	0
	2	1	1	0	2	1	1	2	0	1	1
	3	3	0	3	0	2	1	1	2	0	3
Total		198	158	160	196	206	150	174	182	150	206

Table 3-W - Classification Basis for Type of Farm.

Type Farm	Classification Basis if Percentage of Income from Type Is
<u>Mixed</u>	
General	15-40% from each of any combination of three single types
Cash crop and dairy	30-40% from each or 40-50% from each
Cash crop and fat stock	30-40% from each or 40-50% from each
<u>Single type</u>	
Dairy	40%
Fat stock (total of hogs, steers, lambs, etc.)	40%
Cash crop (total of wheat, corn, field beans, sugar beets, pickles, soy beans, potatoes, etc.)	40%
Fruits (tree) and vegetables (total of tree fruits and string beans, onions, green peas, asparagus, red beets, etc.)	40%
Poultry and eggs	40%
Truck (small fruits and/or vegetables) total of berries, melons, grapes, carrots, radishes, tomatoes, celery, etc.)	40%
Fat stock and dairy	30-40% from each or 40-50% from each
Dairy and poultry	30-40% from each or 40-50% from each

Table 4-W - Distribution of Total, Latent, and Manifest Scores by Level of Commitment.

Commit- ment Level	Total Score*												N	x	Mean Score	
	0	1	2	3	4	5	6	7	8	9	10	11				12
1				1	1		3	2	1	2		1		11	76	6.91
2		1	3	1	3	4	11	6	3	2	2	1		37	223	6.03
3		1	2	3	3	3	6	7	9	4	4			43	287	6.67
4		1		9	7	10	14	5	7	7	4	2	1	67	418	6.24
5		3	8	9	6	12	13	10	13	7	4	1	1	87	508	5.84
6		3	6	7	9	8	7	9	7	4	5	1		66	370	5.61
7			2	5	6	5	4	6	3	3	3			37	215	5.81
8	1				1	2	1	1			1	1		8	48	6.00

Latent Score												N	x	Mean Score		
1	2	3	4	5	6	7	8	9	10	11	12					
1			3	3	2	2	1							11	39	3.55
2		3	6	6	11	7	3	1						37	137	3.70
3		6	4	5	9	6	7	5	1					43	180	4.18
4		3	10	16	17	12	5	3	1					67	258	3.85
5	1	6	17	20	15	15	8	4	1					87	319	3.67
6	2	6	8	18	17	5	8	2						66	231	3.51
7		2	11	6	6	9	3							37	129	3.49
8	1			1	3	2		1						8	32	4.00

Manifest Score												N	x	Mean Score		
1	2	3	4	5	6	7	8	9	10	11	12					
1		2	2	2	1	3	1							11	37	3.36
2	4	9	7	9	5	2	1							37	86	2.33
3	3	7	13	10	7	2	1							43	107	2.49
4	7	15	16	12	11	4	1	1						67	160	2.39
5	12	21	16	24	7	6	1							87	189	2.17
6	12	14	15	9	12	4								66	139	2.10
7	3	6	12	9	6	1								37	86	2.32
8	2	2	1	1	1	1								8	16	2.00

* Commitment level 3 had one case with a score of 13.

Table 5-W - Distribution of Total, Latent, and Manifest Scores by Level of Involvement.

Involve- ment Level	Total Score*												N	x	Mean Score	
	0	1	2	3	4	5	6	7	8	9	10	11				12
1		1	1	1	2	4		7	3	5	3	1	1	29	205	7.07
2		1	3		4	10	10	10	9	2	4			53	333	6.28
3		1	6	6	11	11	11	8	7	6	6	4	1	78	478	6.13
4	1	3	4	7	7	7	18	9	11	7	6	1		82	501	6.10
5		3	1	15	5	5	9	9	9	7	4	1		68	398	5.85
6			5	3	5	6	9	3	3	1				35	177	5.05
7			1	3	2	1	2		1	1				11	53	4.82

Latent Score												N	x	Mean Score
1	2	3	4	6	7	4	3							
1		2	3	4	6	7	4	3				29	124	4.28
2	1	2	6	11	14	8	9	1	1			53	212	4.00
3		5	17	12	17	17	6	4				78	292	3.74
4	2	7	10	16	21	9	13	3	1			82	311	3.79
5	1	3	13	19	11	13	3	4	1			68	249	3.66
6		6	8	9	9	2		1				35	102	2.92
7		1	2	4	2	2						11	335	3.18

Manifest Score												N	x	Mean Score
1	2	3	4	7	9	2								
1		6	4	7	9	2						29	81	2.79
2	2	12	17	16	3	3						53	121	2.28
3	11	14	20	11	15	4	2	1				78	186	2.39
4	13	14	16	23	8	5	3					82	190	2.32
5	11	17	10	15	8	7						68	149	2.19
6	3	8	14	3	5	2						35	75	2.14
7	2	5	1	1	2							11	18	1.64

* Involvement level 4 had one case with a score of 13.

Table 6-W - Distribution of Total, Latent, and Manifest Scores by Type of Dealer Relations.

Dealer Rela- tions Level	Total Score*												N	x	Mean Score	
	0	1	2	3	4	5	6	7	8	9	10	11				12
1			2	1	1	1	4	3	5	2	2	2		23	161	7.00
2		1		4		4	9	11	6	5	3	2	1	46	321	6.98
3			2	2	4	4	2	3	7	4	4	1	1	35	247	7.06
4		4	7	6	15	12	17	13	12	7	8	1		102	599	5.87
5			1	6	4	5	7	1	2	3	2	1		32	184	5.75
6			1		1	4	2	1	2		1			12	71	5.92
7	1	4	8	16	11	14	18	14	9	8	3			106	562	5.30

Latent Score															
1		1	2	4	3	7	5	1					23	101	4.39
2		2	3	2	15	13	7	4					46	209	4.54
3			9	6	3	5	6	5	1				35	152	4.34
4	2	6	13	24	30	18	5	3	1				102	373	3.65
5		4	4	11	4	4	4		1				32	113	3.53
6			2	4	4	1	1						12	43	3.58
7	2	13	26	24	21	10	7	3					106	334	3.15

Manifest Score															
1	3	4	4	4	5	2	1						23	60	2.61
2	5	7	14	9	8	1	1	1					46	112	2.44
3	3	6	7	8	5	5	1						35	95	2.72
4	11	25	23	25	12	4	2						102	226	2.22
5	4	7	7	9	2	3							32	71	2.22
6	1	3	3	2	2	1							12	28	2.33
7	16	24	24	19	16	7							106	228	2.15

* Dealer relations level 3 had one case with a score of 13.

Table 7-W - Distribution of Total, Latent, and Manifest Scores by Type of Neighbor Relations.

Neighbor Rela- tions Level	Total Score*												N	x	Mean Score	
	0	1	2	3	4	5	6	7	8	9	10	11				12
1		1	1	1	5	5	7	6	3	5	5	2		41	275	6.71
2		1	3	7	4	10	10	14	12	6	10	2	1	80	536	6.70
3				5	8	7	15	4	6	4	3	1		53	325	6.13
4		3	10	11	9	16	20	18	16	7	4	2	1	118	697	5.91
5	1	4	7	11	10	6	7	4	6	7	1			64	312	4.88
Latent Score																
1		2	3	4	15	12	3	2						41	172	4.20
2	1	4	7	16	17	18	10	7						80	333	4.16
3		2	8	15	10	8	6	3	1					53	208	3.92
4	1	8	23	29	27	15	10	3	2					118	421	3.57
5	2	10	18	11	11	5	6	1						64	191	2.98
Manifest Score																
1	5	10	7	8	2	7	2							41	103	2.51
2	6	17	17	19	13	6	1	1						80	203	2.54
3	6	12	11	14	9	1								53	117	2.21
4	15	20	31	24	20	6	2							118	276	2.34
5	11	17	16	11	6	3								64	121	1.89

* Neighbor relations level 4 had one case with a score of 13.

Table 8-W - Distribution of Total, Latent, and Manifest Scores by Level of Rationality.

Rationality Level	Total Score*												N	Σ	Mean Score	
	0	1	2	3	4	5	6	7	8	9	10	11				12
1			1	2	2	6	4	5	7	4	6	1		38	268	7.05
2				1	3	4	5	9	3	4	3			32	218	6.81
3		1	2	3	2	4	9	9	5	2	2	2	1	42	271	6.45
4			2	2	6	1	7	4	5	9		2		38	252	6.63
5		2	7	9	9	16	16	7	13	5	5	1		90	514	5.71
6	1	6	9	18	14	13	18	12	10	5	7	1	1	116	622	5.36
Latent Score																
1			4	7	9	9	7	1	1					38	167	4.39
2			1	7	8	8	6	2						32	145	4.53
3	1	1	4	11	9	9	6	1						42	166	3.95
4			3	11	10	8	3	2	1					38	159	4.18
5		10	16	21	23	7	9	4						90	314	3.49
6	3	15	31	18	21	17	4	6	1					116	374	3.22
Manifest Score																
1	4	7	4	10	9	4								38	101	2.66
2	2	8	9	6	6	1								32	73	2.28
3	5	7	11	7	7	4		1						42	105	2.50
4	5	7	6	11	5	3	1							38	93	2.45
5	12	18	20	23	12	5								90	200	2.22
6	15	29	32	19	11	6	4							116	248	2.14

* Rationality level 6 had one case with a score of 13.

Table 9-W - Analysis of Variance for Total, Latent, and Manifest Score
Classified by the Structural Dimensions of Rationality,
Dealer Relations, and Neighbor Relations.

Structural Dimension, Score, and Analysis of Variance Item	Sum of Squares	Degrees of Freedom	Mean Square	F ratio
Rationality - Total Score				
Total	2,242.77	355		
Among	120.99	5	24.20	
Within	2,121.78	350	6.06	3.99**
Rationality - Latent Score				
Total	971.47	355		
Among	82.37	5	16.47	
Within	889.10	350	2.54	6.48**
Rationality - Manifest Score				
Total	803.34	355		
Among	10.80	5	2.6	
Within	792.54	350	2.26	.96
Dealer Relations - Total Score				
Total	2,242.77	355		
Among	162.84	6	27.14	
Within	2,079.93	349	5.96	4.55**
Dealer Relations - Latent Score				
Total	971.47	355		
Among	91.27	6	15.21	
Within	880.20	349	2.52	6.04**
Dealer Relations - Manifest Score				
Total	803.34	355		
Among	13.39	6	2.23	
Within	789.95	349	2.26	.98
Neighbor Relations - Total Score				
Total	2,242.77	355		
Among	142.77	4	35.69	
Within	2,100.00	351	5.98	5.97**
Neighbor Relations - Latent Score				
Total	971.47	355		
Among	64.08	4	16.02	
Within	907.39	351	2.59	6.19**
Neighbor Relations - Manifest Score				
Total	803.34	355		
Among	18.61	4	4.65	
Within	784.73	351	2.24	2.08

Table 10-W - Mean Function Scores by Factorial Cell; Basis of Classification, Four Structural Variables and Definition Control.

Factorial Cell						Num- ber of Cases	Mean Total Score	Mean Latent Score	Mean Mani- fest Score	
Commit H, MN	more,	Deal	Diff,	Neigh	Diff,	Rat H 25	7.16	4.34	2.80	
"	"	"	"	"	"	Rat L 15	5.93	3.67	2.27	
"	"	"	"	Neigh	Spec,	Rat H 24	7.29	4.46	2.83	
"	"	"	"	"	"	Rat L 15	5.93	3.60	2.33	
"	"	Deal	Spec,	Neigh	Diff,	Rat H 12	6.42	4.00	2.42	
"	"	"	"	"	"	Rat L 9	5.67	3.78	1.89	
"	"	"	"	Neigh	Spec,	Rat H 6	5.33	2.83	2.50	
"	"	"	"	"	"	Rat L 12	6.25	3.67	2.58	
"	MN	less,	Deal	Diff,	Neigh	Diff,	Rat H 6	8.00	4.83	3.17
"	"	"	"	"	"	Rat L 9	5.22	3.22	2.00	
"	"	"	"	Neigh	Spec,	Rat H 9	5.00	3.56	1.44	
"	"	"	"	"	"	Rat L 20	4.05	2.60	1.45	
"	"	Deal	Spec,	Neigh	Diff,	Rat H 4	5.23	4.00	1.25	
"	"	"	"	"	"	Rat L 13	4.00	2.69	1.31	
"	"	"	"	Neigh	Spec,	Rat H 5	7.00	4.80	2.20	
"	"	"	"	"	"	Rat L 14	3.21	1.79	1.43	
Commit L, MN	more,	Deal	Diff,	Neigh	Diff,	Rat H 15	7.27	4.87	2.40	
"	"	"	"	"	"	Rat L 13	7.54	4.77	2.77	
"	"	"	"	Neigh	Spec,	Rat H 12	7.17	4.50	2.67	
"	"	"	"	"	"	Rat L 14	5.93	4.00	1.93	
"	"	Deal	Spec,	Neigh	Diff,	Rat H 6	6.00	4.00	2.00	
"	"	"	"	"	"	Rat L 12	6.42	3.67	2.75	
"	"	"	"	Neigh	Spec,	Rat H 9	6.78	3.89	2.89	
"	"	"	"	"	"	Rat L 16	5.56	2.88	2.69	
"	MN	less,	Deal	Diff,	Neigh	Diff,	Rat H 8	7.00	4.50	2.50
"	"	"	"	"	"	Rat L 14	7.71	4.64	3.07	
"	"	"	"	Neigh	Spec,	Rat H 2	5.00	3.00	2.00	
"	"	"	"	"	"	Rat L 5	5.00	3.20	1.80	
"	"	Deal	Spec,	Neigh	Diff,	Rat H 3	6.00	4.67	1.33	
"	"	"	"	"	"	Rat L 10	7.10	4.10	3.00	
"	"	"	"	Neigh	Spec,	Rat H 4	5.25	3.25	2.00	
"	"	"	"	"	"	Rat L 15	3.73	2.00	1.73	

Table 11-W - Mean Function Scores by Factorial Cell; Basis of Classification, Four Structural Dimensions and Sources Control.

Factorial Cell						Num- ber of Cases	Mean Total Score	Mean Latent Score	Mean Mani- fest Score
Commit H, Mass Plus, Dealer Diff, Neigh Diff, Rat H						21	7.00	4.14	2.86
" " " " Rat L						9	6.33	3.67	2.67
" " " Neigh Spec, Rat H						17	6.76	4.18	2.59
" " " Rat L						17	5.00	2.94	2.06
" " Dealer Spec, Neigh Diff, Rat H						6	6.67	4.33	2.33
" " " Rat L						9	5.11	3.67	1.44
" " Neigh Spec, Rat H						6	7.00	4.33	2.67
" " " Rat L						12	4.75	3.00	1.75
" Mass Only, Dealer Diff, Neigh Diff, Rat H						10	8.00	5.10	2.90
" " Rat L						15	5.27	3.40	1.87
" Neigh Spec, Rat H						16	6.56	4.25	2.31
" " Rat L						18	4.72	3.11	1.61
" Dealer Spec, Neigh Diff, Rat H						10	5.80	3.80	2.00
" " Rat L						13	4.38	2.77	1.61
" Neigh Spec, Rat H						5	5.00	3.00	2.00
" " Rat L						14	4.50	2.43	2.07
Commit L, Mass Plus, Dealer Diff, Neigh Diff, Rat H						18	7.72	5.00	2.72
" " Rat L						17	7.76	4.76	3.00
" Neigh Spec, Rat H						8	6.25	3.75	2.50
" " Rat L						14	6.00	3.93	2.07
" Dealer Spec, Neigh Diff, Rat H						7	5.86	4.29	1.57
" " Rat L						11	7.00	4.27	2.73
" Neigh Spec, Rat H						9	6.44	3.89	2.56
" " Rat L						17	5.35	2.76	2.59
" Mass Only, Dealer Diff, Neigh Diff, Rat H						5	5.20	3.80	1.40
" " Rat L						10	7.40	4.60	2.80
" Neigh Spec, Rat H						6	7.50	5.00	2.50
" " Rat L						5	4.80	3.40	1.40
" Dealer Diff, Neigh Spec, Rat H						2	6.50	4.00	2.50
" " Rat L						11	6.45	3.36	3.09
" Neigh Diff, Rat H						4	6.00	3.25	2.75
" " Rat L						14	3.86	2.07	1.79

Table 12-W - Mean Function Scores by Factorial Cell; Basis of Classification, Three Structural Variables and Two Control Variables.

Factorial Cell					Num- ber of Cases	Mean Total Score	Mean Latent Score	Mean Mani- fest Score
MN more,Mass plus,Dealer Diff,Neigh Diff,Rat H					31	7.32	4.55	2.77
" " " " Rat L					15	7.40	4.40	3.00
" " " Neigh Spec,Rat H					19	7.05	4.26	2.79
" " " " Rat L					19	5.95	3.74	2.21
" " Dealer Spec,Neigh Diff,Rat H					9	6.44	4.11	2.33
" " " " Rat L					11	6.36	4.09	2.27
" " " Neigh Spec,Rat H					8	7.25	4.00	3.25
" " " " Rat L					18	6.12	3.47	2.65
" Mass only,Dealer Diff,Neigh Diff,Rat H					9	6.78	4.56	2.22
" " " " Rat L					13	5.85	3.92	1.92
" " " Neigh Spec,Rat H					17	7.47	4.47	3.00
" " " " Rat L					10	5.90	3.90	2.00
" " Dealer Spec,Neigh Diff,Rat H					9	6.11	3.89	2.22
" " " " Rat L					10	5.80	3.30	2.50
" " " Neigh Spec,Rat H					7	5.00	2.86	2.14
" " " " Rat L					11	5.45	2.82	2.64
MN less,Mass plus,Dealer Diff,Neigh Diff,Rat H					8	7.38	4.50	2.88
" " " " Rat L					11	7.09	4.36	2.73
" " " Neigh Spec,Rat H					6	5.17	3.33	1.83
" " " " Rat L					12	4.67	2.75	1.92
" " Dealer Spec,Neigh Diff,Rat H					4	5.75	4.75	1.00
" " " " Rat L					9	5.89	4.00	1.89
" " " Neigh Spec,Rat H					7	6.00	4.14	1.86
" " " " Rat L					12	3.83	2.42	1.42
" Mass only,Dealer Diff,Neigh Diff,Rat H					6	7.50	4.83	2.67
" " " " Rat L					12	6.42	3.83	2.58
" " " Neigh Spec,Rat H					5	4.80	3.60	1.20
" " " " Rat L					13	3.85	2.69	1.15
" " Dealer Spec,Neigh Diff,Rat H					3	5.33	3.67	1.67
" " " " Rat L					14	5.00	2.86	2.14
" " " Neigh Spec,Rat H					2	7.00	4.00	3.00
" " " " Rat L					17	3.35	1.88	1.47

Table 13-W - Mean Function Scores by Factorial Cell; Basis of Classification, Commitment, Involvement, Rationality and Two Control Variables.

Factorial Cell					Number of Cases	Mean Total Score	Mean Latent Score	Mean Manifest Score
Commit H, Invol H, MN more, Mass plus, Rat H					20	7.30	4.40	2.90
" " " " Rat L					12	7.25	4.58	2.67
" " " Mass only, Rat H					17	6.65	4.12	2.53
" " " " Rat L					13	5.69	3.69	2.00
" " MN less, Mass plus, Rat H					6	6.00	4.00	2.00
" " " " Rat L					5	3.80	2.40	1.40
" " " Mass only, Rat H					6	8.17	5.33	2.83
" " " " Rat L					15	4.47	2.73	1.73
" Invol L, MN more, Mass plus, Rat H					20	7.15	4.15	3.00
" " " " Rat L					13	5.38	3.08	2.31
" " " Mass only, Rat H					11	6.45	4.18	2.27
" " " " Rat L					12	5.25	3.17	2.08
" " MN less, Mass plus, Rat H					5	5.80	4.20	1.60
" " " " Rat L					16	3.69	2.38	1.31
" " " Mass only, Rat H					7	5.00	3.43	1.57
" " " " Rat L					20	4.00	2.55	1.45
Commit L, Invol H, MN more, Mass plus, Rat H					10	6.50	4.20	2.30
" " " " Rat L					10	6.30	4.00	2.30
" " " Mass only, Rat H					8	6.12	4.00	2.12
" " " " Rat L					8	5.12	2.75	2.37
" " MN less, Mass plus, Rat H					7	6.71	4.57	2.14
" " " " Rat L					11	6.73	3.82	2.91
" " " Mass only, Rat H					1	6.00	5.00	1.00
" " " " Rat L					11	6.36	3.36	3.00
" Invol L, MN more, Mass plus, Rat H					18	7.39	4.67	2.72
" " " " Rat L					26	6.46	3.85	2.62
" " " Mass only, Rat H					6	7.50	4.67	2.83
" " " " Rat L					11	6.82	4.18	2.64
" " MN less, Mass plus, Rat H					7	6.14	3.86	2.29
" " " " Rat L					12	6.58	4.00	2.58
" " " Mass only, Rat H					2	4.50	2.50	2.00
" " " " Rat L					10	3.70	2.40	1.30

Table 14-W - "Interactions" Matrix for the Four Structural Variables and Market News Control Factorial.*

Interaction of	Total Score				
	Commitment	Dealer	Neighbor	Rationality	Definition
Commitment	--	- .16	-2.02	+1.92	+1.05
Dealer		--	+1.01	+ .36	- .27
Neighbor			--	-1.03	-2.84
Rationality				--	- .99
					--
	Latent Score				
	Commitment	Dealer	Neighbor	Rationality	Definition
Commitment	--	-1.16	-1.88	+1.24	+ .54
Dealer		--	- .45	- .43	+ .56
Neighbor			--	- .55	-2.19
Rationality				--	-1.85
Definition					--
	Manifest Score				
	Commitment	Dealer	Neighbor	Rationality	Definition
Commitment	--	+ .92	-1.20	+1.72	+1.07
Dealer		--	+2.01	+ .98	- .99
Neighbor			--	-1.03	-2.15
Rationality				--	+ .14
Definition					--

* Cell values are values of t read with seven degrees of freedom.

Table 15-W - "Interactions" Matrix for the Four Structural Variables and Sources Control Factorial.*

Interaction of	Total Score				
	Commitment	Dealer	Neighbor	Rationality	Sources
Commitment	--	- .20	-1.47	+2.33	+ .55
Dealer		--	+ .51	+ .31	- .74
Neighbor			--	-1.58	- .13
Rationality				--	- .57
Sources					--
	Latent Score				
	Commitment	Dealer	Neighbor	Rationality	Sources
Commitment	--	-1.60	-1.37	+1.70	- .49
Dealer		--	- .35	- .19	-2.34
Neighbor			--	- .99	+ .28
Rationality				--	- .64
Sources					--
	Manifest Score				
	Commitment	Dealer	Neighbor	Rationality	Sources
Commitment	--	+1.31	- .91	+1.92	+ .36
Dealer		--	+1.93	+ .67	+1.23
Neighbor			--	-1.46	- .49
Rationality				--	- .23
Sources					--

* Cell values are values of t read with seven degrees of freedom.

Table 16-W - "Interactions" Matrix for the Three Structural Variables and Two Controls Factorial.*

Interaction of	Total Score				
	Dealer	Neighbor	Rationality	Definition	Sources
Dealer	--	+1.34	+ .14	- .54	- .50
Neighbor		--	-1.60	-3.07	+ .56
Rationality			--	- .59	- .72
Definition				--	+ .34
Sources					--
	Latent Score				
	Dealer	Neighbor	Rationality	Definition	Sources
Dealer	--	- .12	- .42	+ .62	-1.83
Neighbor		--	- .80	-2.15	+ .76
Rationality			--	-1.35	- .75
Definition				--	- .06
Sources					--
	Manifest Score				
	Dealer	Neighbor	Rationality	Definition	Sources
Dealer	--	+2.23	+ .66	-1.54	+1.24
Neighbor		--	-1.65	-2.53	+ .07
Rationality			--	+ .52	- .32
Definition				--	+ .60
Sources					--

* Cell values are values of t read with seven degrees of freedom.

Table 17-W - "Interactions" Matrix for the Commitment, Involvement, Rationality and Two Controls Factorial.*

Interaction of	Total Score				
	Commitment	Involvement	Rationality	Definition	Sources
Commitment	--	+1.33	+1.69	+1.70	-1.01
Involvement		--	- .24	-1.91	- .31
Rationality			--	- .67	- .40
Definition				--	+ .24
Sources					--
	Latent Score				
	Commitment	Involvement	Rationality	Definition	Sources
Commitment	--	+1.45	+ .95	+ .96	-1.33
Involvement		--	- .14	-1.17	+ .22
Rationality			--	-1.42	- .61
Definition				--	- .03
Sources					--
	Manifest Score				
	Commitment	Involvement	Rationality	Definition	Sources
Commitment	--	+ .58	+1.67	+1.66	- .19
Involvement		--	- .23	-1.77	- .71
Rationality			--	+ .44	+ .01
Definition				--	+ .67
Sources					--

* Cell values are values of t read with seven degrees of freedom.

Appendix B - Survey Schedule*

* The schedule contained in the Appendix has been condensed to reduce it from its original length of 45 pages. These changes affect only the appearance of the schedule. All questions appear in their original wording and sequences.

Farm Market News: June 24, 1957
Social Research Service
(Agricultural Experiment Station)
Michigan State University

Budget Bureau No. 40-5711
Expiration Date: 10/15/57

How do you do. I'm _____ from the Sociology
Section of the Agricultural Experiment Station at Michigan State
University. We are conducting a study of market news and farming
practices. I'd appreciate your answering some questions for me.

1. First of all, how many acres, all together;
 - a. _____ are you renting this year?
(IF ANY) This year how many of
these are you actually using as:
____ crop land & rotation pasture
____ permanent pasture
____ remainder
 - b. _____ do you own?
(IF ANY) How many of these
are you actually using as:
____ crop land & rotation
pasture
____ permanent pasture
____ rent out or put out on
shares
____ remainder

2. Now I'd like to find out some things about what you produce here.
First of all, what do you consider was your main product last year?

What did you do with your _____ (PRODUCT) last year? _____

What other things did you have last year? What else? Did you sell
all these things in this form for cash? (IF "NO" FIND OUT WHICH
WERE NOT SOLD AND WERE CONVERTED TO SOME OTHER FORM WHICH WAS SOLD.
MAKE SURE OTHER FORM IS IN PRODUCT LIST.)

Approximately what percentage of your gross income from farming did
(START WITH MAIN PRODUCT) amount to?

PRODUCT	SOLD ANY		% OF GROSS FARM INCOME (GRT 75%)
Main _____	Yes _____	No _____	_____
Other _____	Yes _____	No _____	_____

(PRODUCT TO WHICH
DECISION-MAKING
QUESTIONS 23-31
WILL REFER.)

(PRODUCT TO WHICH
DEALER RELATIONSHIP QUESTIONS 32 or 35
WILL REFER. IF THIS PRODUCT IS THE SAME
AS THAT FOR THE DECISION-MAKING QUESTIONS,
USE QUESTION 32 AND OMIT 35. IF NOT, OMIT
32 AND USE 35.)

1. The first part of the report deals with the general situation of the country and the results of the survey. It is divided into two main sections: a description of the country and a description of the survey. The description of the country is divided into three parts: a general description, a description of the climate, and a description of the population. The description of the survey is divided into two parts: a description of the survey area and a description of the survey method. The second part of the report deals with the results of the survey. It is divided into two main sections: a description of the results of the survey and a description of the conclusions. The description of the results of the survey is divided into three parts: a description of the results of the survey in the general, a description of the results of the survey in the climate, and a description of the results of the survey in the population. The description of the conclusions is divided into two parts: a description of the conclusions in the general and a description of the conclusions in the climate. The third part of the report deals with the recommendations. It is divided into two main sections: a description of the recommendations in the general and a description of the recommendations in the climate.

EVALUATE QUESTION 2 FOR INFORMATION ON PRODUCT REFERENCE TO BE USED IN QUESTIONS 23-31 ON MARKETING DECISION-MAKING AND QUESTIONS 32 or 35 ON DEALER RELATIONSHIP AND ENTER IN THE APPROPRIATE SPACES ON THE BOTTOM OF THE PRECEDING PAGE.

FOR THE DECISION-MAKING QUESTIONS (23-31), USE THE NON-CONTINUOUSLY MARKETING PRODUCT WHICH PROVIDES THE HIGHEST PROPORTION OF GROSS FARM INCOME. IF TWO OR MORE SUCH PRODUCTS ARE TIED, APPLY THE FOLLOWING RULES IN THE ORDER GIVEN UNTIL ONE CAN BE CHOSEN:

- (1) IF ONE IS "MAIN", USE IT;
- (2) IF ONE IS A CONVERTED FORM OF THE "MAIN", USE IT;
- (3) IF TWO OR MORE ARE CONVERSIONS, CHOOSE ONE OF THOSE ARBITRARILY;
- (4) IF NONE IS A CONVERSION, CHOOSE ONE ARBITRARILY.

FOR THE DEALER RELATIONSHIP QUESTIONS (32 or 35), USE THE PRODUCT WHICH PROVIDES THE HIGHEST PROPORTION OF GROSS FARM INCOME. IF TWO OR MORE ARE TIED, APPLY THE FOLLOWING RULES IN THE ORDER GIVEN UNTIL ONE CAN BE CHOSEN:

- (1) IF ONE IS "MAIN", USE IT;
- (2) IF ONE IS A CONVERTED FORM OF THE "MAIN", USE IT;
- (3) IF TWO OR MORE ARE CONVERSIONS, AND ONLY ONE OF THOSE CAN BE USED IN THE DECISION-MAKING QUESTIONS, USE THAT ONE. IF NONE CAN BE USED FOR DECISION-MAKING QUESTIONS, CHOOSE ONE ARBITRARILY. IF TWO OR MORE CAN BE USED FOR THE DECISION-MAKING QUESTIONS, USE THE SAME ONE USED IN THE DECISION-MAKING QUESTIONS.
- (4) IF NONE ARE CONVERSIONS, AND ONLY ONE OF THESE CAN BE USED FOR DECISION-MAKING QUESTIONS, USE THAT ONE. IF NONE CAN BE USED FOR DECISION-MAKING QUESTIONS, CHOOSE ONE ARBITRARILY. IF TWO OR MORE CAN BE USED FOR DECISION-MAKING QUESTIONS, USE THE ONE USED FOR DECISION-MAKING QUESTIONS.

IN SUBSEQUENT QUESTIONS AND INSTRUCTIONS THE TERMS "MAIN" AND "MAJOR" ARE SYNONYMOUS AND REFER TO THE PRODUCT WHICH PROVIDES THE LARGEST PROPORTION OF GROSS FARM INCOME.

3. Do you ordinarily do any non-farm work for income during the year?
___ No ___ Yes; What do you do? _____ (JOB TITLE/DESCRIPTION)

(IF JOB IS "AGRICULTURAL", SKIP TO QUESTION 4)

Where do you work? _____ (NAME OF A LOCATION)

How far is that from here? _____ miles

How long have you worked there? _____ years

Do you have regular year-round work, or do you just work off the farm parts of the year?

___ All year: Is it a full day's work? ___ Full day ___ Part day

___ Part of the year: What part of the year do you work?

_____ (MONTH SPAN)

Do you work a full day or just part of the day?

___ Full day ___ Part day

What proportion of your total gross income from all sources came from your non-farm work last year? (INTERVIEWER PRESENT CARD)

☐ Less than 1/4 ☐ About 1/2 ☐ More than 3/4
☐ About 1/4 ☐ Between 1/2 & 3/4 ☐ D.K., not all
☐ Between 1/4 & 1/2 ☐ About 3/4 ☐ No answer

4. Now I'd like to ask you about some specific ways market news can be gotten.

4.1 Do you read a daily newspaper fairly regularly?

☐ No (SKIP TO QUESTION 4.3 ON RADIO)

☐ Yes: Which ones? _____

4.2 Do you look at any farm market news in any of the daily newspapers you read regularly?

☐ No

☐ Yes: Which ones? _____

Now how about radio?

4.3 Do you have a radio in working condition?

☐ No (SKIP TO QUESTION 4.5 ON OTHER SOURCES)

☐ Yes

4.4 Are there any radio programs that you listen to fairly regularly for farm market news?

☐ No

☐ Yes: Which ones? (GET PROGRAM NAME, STATION, AND TIME)

4.5 Now I'd like you to look at this list and tell me if you get market news from any of these sources. (PRESENT CARD)

☐ None (SKIP TO QUESTION 5.2)

☐ Yes: (SPECIFY)

☐ Magazines: Which ones? _____

☐ Weekly newspapers: Which ones? _____

☐ Television: Which stations? (GET CALL LETTERS NOT CHANNEL NUMBERS)

☐ Dealers

☐ Truckers and route drivers

☐ County agents and other government personnel

☐ Others: (SPECIFY)

(IF QUESTIONS 4.1 to 4.5 INDICATE THAT THE RESPONDENT DOES NOT RECEIVE MARKET NEWS, FROM ANY OF THESE SOURCES, SKIP NOW TO QUESTION 9, OMIT 10, AND ASK 11)

5. Now I'd like to find out more specifically what market news you get.

- 5.1 (ASK THE FOLLOWING FOR EACH SOURCE MENTIONED IN QUESTION 4.5)
What kinds of things are carried by _____ (SOURCE)?
(FOR HUMAN SOURCES, ASK: "What kinds of things do you get from
_____ (SOURCE)?")

(FOR ALL SOURCES RESPONDENT USES, PROBE FOR FULL ANSWER, USING SUCH
QUESTIONS AS "What about _____ (PRODUCT)?", "Anything else?"
IF PRICE, SUPPLY, OUTLOOK, ETC. "for what products?")

(FIRST SOURCE: _____)
(SECOND SOURCE: _____)

- 5.2 (DO NOT ASK IF ANSWER TO QUESTION 4.1 or 4.2 WAS "NO")
Now I'd like to talk a little bit about newspapers. You said you
read the _____ (FIRST PAPER) for market news. What market news
does it carry?

IF ANSWER IS ONLY CONTENT CATEGORY, ASK:
What kinds of _____ (CONTENT MENTIONED) does that include?
Is there anything besides _____ (INFORMATION ALREADY OBTAINED)
in the market news from _____ (SOURCE)?

IF ANSWER IS ONLY PRODUCTS, ASK:
What things about _____ (FIRST PRODUCT) does it cover?
Anything else?
How about _____ (SECOND PRODUCT). What things does it
cover?

What market news does the _____ (SECOND NEWSPAPER) carry?

(REMEMBER TO PROBE AS ABOVE)

- 5.3 (DO NOT ASK IF ANSWER TO QUESTIONS 4.3 or 4.4 WAS "NO")
Now I'd like to ask a few more questions about radio. You said you
listen to _____ (FIRST PROGRAM). What market news does it
carry?

IF ANSWER IS ONLY CONTENT CATEGORY, ASK:
What kinds of _____ (CONTENT MENTIONED) does that include? Is
there anything besides _____ (INFORMATION ALREADY OBTAINED)
in the market news from _____ (SOURCE)?

IF ANSWER IS ONLY PRODUCTS, ASK:
What things about _____ (FIRST PRODUCT) does it carry or
cover? Anything else? How about _____ (SECOND PRODUCT).
What things does it cover?

What market news does _____ (SECOND PROGRAM) carry?

(REMEMBER TO PROBE AS ABOVE)

DO NOT ASK: INTERVIEWER MAKE YOUR BEST JUDGMENT

- ☐ Seems to have a clear definition of what market news is.
 - ☐ Tries to figure out a clear definition but no indication that it was thought out in advance.
 - ☐ Seems very vague; definition of no apparent lasting meaningfulness.
-

6. (ASK FOR EACH NEWSPAPER AND RADIO PROGRAM MENTIONED AS A SOURCE OF MARKET NEWS)

I'd like to find out some things about the way you would rate (each of) the newspaper(s) and radio program(s) as to how well they handle market news.

(PRESENT SCALE CARD)

- 6.1 In terms of the kind of job _____ (SOURCE) does in handling market news, where would you place it on this scale

(THE SCALE IS AT THE BOTTOM OF THE NEXT PAGE. RECORD EACH CHOICE THERE, AND FOR ANY SOURCE NOT RATED "EXCELLENT", ASK IMMEDIATELY:)

- 6.2 What are your reasons for not rating _____ (SOURCE) higher? (TAKE FREE RESPONSE FIRST, THEN INDICATE PROBED RESPONSES AS SUCH)

(PROBE FOR REASONS FROM THIS LIST)

- a. It doesn't cover all the products I'm interested in.
- b. It doesn't cover all the market locations I'm interested in.
- c. The reports of local markets are inaccurate.
- d. The information is not up-to-date.

NEWSPAPERS ONLY:

- f. Reports are not easy to locate.
- g. Printing or set-up is bad.
- h. Paper is hard to get.
- j. Paper comes too late.

RADIO PROGRAMS ONLY:

- p. Program is on at a bad time.
- q. Station reception is bad.
- r. Announcer does a poor job.

SOURCE: _____

REASONS: _____

(RECORD SCALE CHOICES FOR EACH NEWSPAPER OR RADIO PROGRAM AT THE BOTTOM OF THIS PAGE, INDICATING SOURCE. WHEN THESE CHOICES AND THE EVALUATIONS ON THE PRECEDING PAGE HAVE BEEN MADE, AND IF THERE IS MORE THAN ONE SUCH SOURCE, SHOW THE SCALE TO THE RESPONDENT AND ASK:)

- 6.3 Is this about the way you would rate the newspaper(s) and radio program(s) you get market news from?

☐ Yes

☐ No: (ASK RESPONDENT TO REALIGN THE RATINGS. INQUIRE AS TO WHY HE CHANGED HIS MIND. RECORD REASONS.)

- 6.4 (WHEN TWO SOURCES ARE RATED DIFFERENTLY OVER-ALL, BUT CRITICIZED TO THE SAME EXTENT, ASK:)

Why do you rate _____ (SOURCE) higher than _____ (SOURCE)?

Excellent Good Fair Poor

7. As far as you know, does the United States Department of Agriculture originally provide a considerable amount of the market news information to the sources you get it from?

___ No

___ Yes: Are you pretty sure of that?

___ No: Which sources do you think probably get information from the USDA? _____

___ Yes: Is that true of all the sources you get market news from?

___ Yes

___ No: Which does it include? _____

(ASK FOR THOSE SOURCES FOR WHICH USDA IS GIVEN AS THE ORIGINATOR)

You mentioned that (some or all) of the material you get from _____ (SOURCE) comes from the USDA. How do you feel about the job that the USDA does in supplying such information to _____ (SOURCE)?

(SOURCE: _____)

8. (ASK ONLY IF RESPONDENT HAS INDICATED THAT HE USED MORE THAN ONE SOURCE FOR MARKET NEWS)

You've mentioned that you get market news in a number of ways. Do you prefer some of them more than others or are they about equal?

___ Equal preference: If in the future you could continue to get market news from just one of these sources that you're using, which would you prefer to continue with? _____

___ Preference: Which one source, of all these you now use do you like most? _____
Why that one? _____

9. Do you use any of the following kinds of information in figuring out marketing problems? (EXCLUDE ANY VOLUNTEERED ON QUESTIONS 5.1, 5.2, and 5.3)

NO YES

_____ _____ Grading, quality, and spoilage
_____ _____ Packaging
_____ _____ Weather
_____ _____ Consumer preferences
_____ _____ Different ways of marketing
_____ _____ Other (Volunteered) _____

10. (ASK IF ANY OF THE PREVIOUS ANSWERS INDICATE THAT THE RESPONDENT IS A RECIPIENT OF MARKET NEWS)

We've been talking about farm market news for a few minutes now and you've described _____ (FILL IN CONTENT ANSWERS TO QUESTIONS 5.1, 5.2, and 5.3) as market news.

- 10.1 Are there any other things that you think of as market news?
____ No ____ Yes: What are they? _____
- 10.2 Is there any other information about farm marketing that you'd like to get but can't or don't get now?
____ No ____ Yes: What? _____
- 10.3 Is there anything that you now get in market news that you'd just as soon not get?
____ No ____ Yes: What? _____

11. Would it make any difference to you if you could no longer get any information about markets?
____ No: Why not? _____

(IF "NEW SOURCE COULD BE FOUND" TYPE OF ANSWER IS GIVEN, ASK:)

Suppose there wasn't any way in which you could get this kind of information. Would it make any difference to you?

____ No: Why not? _____
____ Yes: In what ways? _____

____ Yes: In what ways? _____
(IF MANIFEST EFFECTS ONLY ARE GIVEN, PROBE FOR LATENT TYPE ANSWER)

(IF QUESTIONS 4-10 INDICATE THAT THE RESPONDENT DOES NOT RECEIVE ANY MARKET INFORMATION DIRECTLY, OMIT THE FOLLOWING LEAD-IN STATEMENT AND "First of all," IN QUESTION 12. DON'T ASK THE REMAINDER OF QUESTION 12)

Well, now, you said that you get farm market news on a fairly regular basis. I'd like now to ask about some things which don't have too much to do directly with marketing, but which other farmers have said are important.

12. First of all, do you sometimes have anyone else, like family members or a friend, get market information for you?

____ Yes: Who would that be? _____
What kinds of information do they get for you? _____
When? _____
Why? _____

____ No: Why not? _____
(IF INFORMATION IS NOT VOLUNTEERED, ASK:)

Does anyone else in the family get market news information?

____ Yes
____ No

(IF QUESTIONS 4-10 INDICATE THAT THE RESPONDENT DOES NOT RECEIVE ANY MARKET INFORMATION DIRECTLY, AND THE ANSWER TO QUESTION 12 IS "NO", OMIT ALL OF QUESTIONS 13 AND 20-32, AND SKIP NOW TO QUESTION 14)

13. Sometimes when you are in general conversation do you discuss the market news you are getting? We mean just talking about markets the way you might talk about the weather - not particularly to get any new information.

___ No: Why not? _____

___ Yes: Can you recall the last time, or any time, that this happened? That is, can you tell me a little about it?
(PROBE: "When was it? Where was it? Who was it with?
What type of information was it?")

In general in such situations, what kinds of people do you talk with in this way? _____

(IF "PEOPLE I DON'T KNOW TOO WELL" IS NOT VOLUNTEERED, ASK THE FOLLOWING)

How about with people you don't know too well?

___ Yes ___ No

- 13.1 Have you ever been in a situation where conversation was lagging and then somebody started talking about markets and the conversation picked up again?

___ Yes ___ No

- 13.2 Have you ever done this yourself? I mean, have you ever brought up marketing when the talk seemed to be stalled?

___ No: Why not? _____

___ Yes: With whom? _____

(IF "PEOPLE I DON'T KNOW TOO WELL" IS NOT VOLUNTEERED, ASK:)

How about with people you don't know too well?

___ Yes ___ No

- 13.3 Most people think more highly of some persons than they do of others. For example, there are probably some farmers around here that you regard more highly than others. They may or may not be the biggest and wealthiest farmers. Now I'd like to have you think about these farmers that you regard highly. I don't want to know their names, but I'd just like to have you think about them to yourself. Now, would you say that these farmers whom you regard most highly know more about markets and marketing than other farmers around here do?

___ No: Do you think that whether or not a farmer knows much about markets and marketing has anything to do with how highly you regard him?

___ No: Why not? _____

What things are important? _____

___ Yes: In what ways? _____

Why? _____

— Yes: Do you think that the fact that these farmers know more about markets and marketing tends to make you regard them more highly?

No: Why not?

You: Why?

New I'd like to find out some things about your experience in farming.

14. Did you grow up on a farm?

 All of childhood spent on farm Part None

14.1	What are the names of the schools you attended?	How long did you go there?	Did they give you any training in agriculture?
------	---	----------------------------	--

_____	_____	_____ Yes	_____ No
_____	_____	_____ Yes	_____ No

14.2 What was the last grade of school you completed? _____

14.3 Have you had any additional training, such as short courses or vocational training?

___ No ___ Yes: What kind of course How long did it run?
 did you take?

14.4 Did you ever belong to:
a 4-H Club?

the Future Farmers of America? Yes No

14.5 Were you ever out of farming for awhile?

No

Q: For how long?

What kinds of work did you do during this time? _____

Have you ever lived in a city?

No

— Yes: What kinds of work did you do during that period?

14.6 In the past, have you ever had a non-farm job while you were farming?
(INTERVIEWER: NOT JOB PRESENTLY HELD. THIS WOULD HAVE BEEN ANSWERED
IN QUESTION 3.)

No

Yes: For how long? _____

What kinds of work did you do during that time?

15. Could you tell me how you happened to get into farming? _____

15.1 At the time you first started to farm, were there some other kinds of jobs you would have preferred?

___ No

___ Yes: Why did you go into farming rather than into one of these other jobs? _____

16. How do you feel about your work now? Do you think there are any other kinds of jobs that you would enjoy more than farming?

___ No

___ Yes: What are they? _____

16.1 What would you want to do by way of an occupation if you were younger and just starting out on your first job? _____

(IF NO CLEAR-CUT SET OF REASONS IS GIVEN): Do you ever think of getting out of farming and starting over again?

___ No: Why not? _____

___ Yes: Why? _____

What would you rather do? _____

Why that? _____

17. There are a number of different things that farmers have said to us about farming. I'm going to read you a list of these and I'd like you to tell me which side comes closest to your own point of view.

___	easy work - hard work	___
___	creative work - routine, repetitive work	___
___	healthy work - unhealthy work	___
___	takes special skills	___
___	not everybody has - anybody can farm	___
___	interesting work - boring work	___
___	a man is his ownboss - a man is tied down by his farm	___
___	free time whenever you	___
___	want it - long hours	___
___	good paying - poor paying	___

Is there anything else you would like to add about how you would describe farming? _____

If you had to describe how you feel about farming in just one of the above phrases, which one would you choose? (CIRCLE)

From your point of view, which one of these descriptions gives the most misleading impression? (SQUARE)

19.* Does how much you know about markets and marketing have any effect on how you feel about farming?

___ No: Why not? _____

___ Yes : Could you tell me a little about it? _____

* In numbering the original schedule, the number 18 was inadvertently skipped.

(IF QUESTIONS 4-12 INDICATED THAT THE RESPONDENT DOES NOT RECEIVE ANY MARKET INFORMATION, EITHER DIRECTLY OR INDIRECTLY, OMIT QUESTIONS 20-32, and SKIP NOW TO QUESTION 33.)

20. You've been getting market information on a fairly regular basis. Aside from direct uses, do you feel that it has had any educational value? That is, has it helped you develop any generally useful ideas about farming or marketing?
- ___ No: Why not? _____
- ___ Yes: What are some of those ideas? _____
- ___ Don't know

21. Now I'd like to ask some questions about the relation between market information and your production practices and plans.

- 21.1 First, are you figuring on any changes in the amounts or kinds of products or enterprises for next year?

___ No: Is the fact that you aren't planning to make any changes next year a result of any market news you've been getting?

___ No (SKIP TO 21.4)

___ Yes: What information is that? _____ Where did you get it? _____

(SKIP TO 21.3)

___ Yes: What changes are these?

(ASK FOR EACH)

(GET SPECIFIC NATURE OF EACH CHANGE, INCLUDING WHETHER "ADD", DROP, OR SWITCH.)

CHANGES	Will that increase or decrease your investment?			Will it increase or decrease flexibility?			Will it increase or decrease costs?		
	INVESTMENT			FLEXIBILITY			COSTS		
	more	same	less	more	same	less	more	same	less

- 21.2 Are you considering any of these changes on the basis of any market information you've been getting?

___ No

___ Yes:

Which ones? (USE NOS.)	What information is it?	Where did you get it?

21.3 Is this the way you usually figure out whether to make changes in enterprises?

___ Yes

___ No: In what ways were these cases different? _____

21.4 Have you made any changes in amounts or kinds of products or enterprises in the past three years?

___ No: Is the fact that you haven't made any changes a result of any market news you've been getting?

___ No (SKIP TO 22)

___ Yes: What information was that? Where did you get it? _____

(SKIP TO 21.6)

___ Yes: What changes were these? (ASK FOR EACH)

(GET SPECIFIC NATURE OF EACH CHANGE, INCLUDING WHETHER "ADD", "DROP", OR "SWITCH")

CHANGES	Did that increase or decrease your investment?			Did it increase or decrease flexibility?			Did it increase or decrease costs?		
	INVESTMENT			FLEXIBILITY			COSTS		
	more	same	less	more	same	less	more	same	less

21.5 Did you make any of these changes on the basis of any market information you had been getting?

___ No

___ Yes:

Which ones? (USE NOS.)	What information was it?	Where did you get it?

21.6 Is this the way you usually figure out whether to make changes in enterprises?

___ Yes

___ No: In what ways were these cases different? _____

22. Does it bother you to make mistakes?

___ No

___ Yes: How do you get out of feeling badly about them? _____

(IF NOT VOLUNTEERED, ASK:)

Do you ever tell yourself that experts make mistakes too?

___ No

___ Yes: Would you say that at such times as you've made a mistake and remembered that the experts are often wrong too, that you had marketing experts in mind?

___ Yes: Would you give me an instance? _____

___ No: Why was that? _____

22.1 When things go wrong do you ever "blow off steam" in order to feel better?

___ No

___ Yes: Do you ever find when "blowing off steam" that you pick on things which are not really those which are bothering you?

___ No (ENTER ALSO IN QUESTION 22; THEN SKIP TO QUESTION 23)

___ Yes

22.2 Have you ever complained about market information because of other things going wrong?

___ No

___ Yes: Could you give me an example? _____

Now I'd like to find out some things about market news and how you market. There are a number of major problems that a farmer has to settle in marketing. We would like to find out something about how you handled them the last time you sold _____

(SELECT THE MAJOR PRODUCT. IF IT IS DAIRY OR EGGS, OR IF IT IS POULTRY BEING MARKETING ON A CONTINUING BASIS, SELECT THE PRODUCT WHICH IS NOT MARKETING CONTINUOUSLY THAT PROVIDES THE HIGHEST SHARE OF INCOME)

23. Did you sell your last (crop or lot) of _____ (PRODUCT) all at once to one dealer or did you break it up for sale? (BROKE IT UP REFERS TO MORE THAN ONE PRICE AGREEMENT)

___ All at once: When was that? _____ (SKIP QUESTION 28)

___ Broke it up: What was the period during which you sold it? _____

(ASK QUESTIONS 24, 26, and 28; SKIP QUESTION 25 and 27)

24. At the time you were getting ready to sell, were you getting any _____ (FILL IN MARKET INFORMATION AS GIVEN IN QUESTIONS 5.1, 5.2, and 5.3) INFORMATION on _____ (PRODUCT)?

___ No: (WASN'T GETTING ANY OR WASN'T GETTING ANY RELEVANT INFORMATION)

Why not? _____

Is this usually the case when you have _____ (PRODUCT) to sell?

___ No: (ASK RESPONDENT TO SPECIFY MOST RECENT TYPICAL SALE AND USE THIS IN FOLLOWING QUESTIONS. QUESTION 23 MUST BE REPEATED.)

___ Yes: Would you like to be able to get information to help you with such sales?

___ No

___ Yes: What would it be? _____

In what particular ways would such information help you? _____

(IF MAJOR PRODUCT IS USED, SKIP NOW TO QUESTION 29, BUT OMIT 30.1 and 31; IF MAJOR PRODUCT IS NOT USED, SKIP TO QUESTION 33.)

___ Yes: What information were you getting? _____

Where were you getting it? _____

Do you usually get such information when you have _____
(PRODUCT) to sell?

___ Yes

___ No

(IF QUESTION 23 INDICATES THAT CROP OR LOT WAS BROKEN UP, SKIP QUESTION 25.)

25. Could you have sold your _____ (PRODUCT) either earlier or later than you did?

___ Yes: Then why did you pick just that time to sell? _____

Did your market information help you in coming to this decision?

___ No: Why not? _____

___ Yes: In what way? _____

Is it usually useful in this way?

___ Yes

___ No: How was it more useful this time than it usually is? _____

___ No: Why was it that you could only sell then? _____

Did you feel this way at all as a result of the market information you were getting?

___ No

___ Yes: What was that information? _____

Where did you get it? _____

Is it usually useful in this way?

___ Yes

___ No: How was it more useful this time than it usually is? _____

(RESUME INTERVIEWING IF QUESTION 25 WAS SKIPPED)

26. Could you have sold your _____ (PRODUCT) in any other form?
(SUPPLY EXAMPLES IF NECESSARY)

___ Yes: Why did you decide not to? _____
Did the market information you were getting help you in
this decision?
___ No: Why not? _____
___ Yes: What was that information? _____
Where did you get it? _____
Is this the way you usually handle this kind of problem?
___ Yes
___ No: What do you usually do? _____
___ No: Why couldn't you? _____
(STOP HERE IF ANSWER INDICATES LACK OF KNOWLEDGE OF
ALTERNATIVES OR ABSENCE OF PHYSICAL FACILITIES FOR
CONVERTING)

Did you feel this way at all as a result of the market information
you were getting?

___ No: Why not? _____
___ Yes: What was that information? _____
Where did you get it? _____

Do you usually decide about what to do with it this way?

___ Yes
___ No: What do you usually do? _____

(USE QUESTION 27 ONLY IF CROP OR LOT WAS SOLD ALL AT ONCE TO ONE
DEALER)

27. You mentioned that you sold your _____ (PRODUCT) to one
dealer in one sale. Did you have to sell it this way?

___ Yes: Why was that? _____
Did you feel this way at all as a result of the market
information you were getting?
___ No: Why not? _____
___ Yes: What information was that? _____
Where did you get it? _____
Do you usually have this kind of information?
___ Yes
___ No: What position are you usually in with
regard to information? _____

___ No: How else might you have sold it? _____
Why did you decide to sell it the way that you did? _____

Did the market information you were getting help you in
deciding to handle it this way?

___ No: Why not? _____
___ Yes: What was the information? _____
Where did you get it? _____
Do you usually have this kind of information?
___ Yes
___ No: What position are you usually in with
regard to information? _____

(USE QUESTION 28 ONLY IF CROP OR LOT WAS SPLIT UP FOR SALE)

28. You mentioned that you didn't sell all of your last crop (or lot) of _____ (PRODUCT) all at one time. How did you get rid of it?

Why did you decide to do it this way? _____

Did the market information you were getting help you in deciding to handle it this way?

___ No: Why not? _____

___ Yes: What information was that? _____

How did you get it? _____

Is this the way you usually handle the problem of how much of a crop (or lot) to sell at any one time?

___ Yes

___ No: How is it different from usual? _____

29. (IF SOLD ALL AT ONCE TO
ONE DEALER)

Where did you sell your
_____ (PRODUCT) ?

- (IF SPLIT UP FOR SALE)

Where did you sell the largest part
of your last crop (or lot) of
_____ (PRODUCT) ?

Dealer's name

Town in which the business is located

Number of miles from farm to dealer's
business

- 29.1 Do you usually sell your _____ (PRODUCT) there?

___ Yes: What are your reasons for selling there? _____

(IF "GOOD PRICE" IS A REASON)

How did you know that you'd do as well there as anywhere
else? _____

___ No: Why did you choose this place? _____

(IF "GOOD PRICE" IS A REASON)

How did you know that you'd do as well there as anywhere
else? _____

Is this the way you usually decide where to sell your
_____ (PRODUCT) ?

___ Yes

___ No: How do you usually decide where to sell? _____

- 29.2 How many years ago did you first sell _____ (PRODUCT) to this
dealer? _____ Years

- 29.3 How many years has he been in this area?
_____ Years

29.4 How long have you been producing _____ (PRODUCT) in this area?
_____ Years

30. How was the price set for the sale to (DEALER AND LOCATION FROM QUESTION 29)? _____

Was the price set when you delivered your _____ (PRODUCT) or was it set earlier?

___ Set at delivery

___ Set earlier: Did you have a written contract or did you use a verbal agreement?

___ Written

___ Verbal

30.1 Did you feel that the price was right when you agreed to it?

___ Yes: Why did you feel that way? _____

___ No: Was any of the market information you were getting responsible for how you felt?

___ No

___ Yes: What was the information? _____

Where did you get it? _____

(STOP HERE FOR "Set at delivery")

Did you feel that the price was right when you delivered your _____ (PRODUCT)?

___ Yes: Why did you feel that way? _____

___ No: Was any of the market information you were getting responsible for how you felt?

___ No

___ Yes: What was the information? _____

Where did you get it? _____

31. Did you follow the prices of _____ (PRODUCT) for awhile after you sold it?

___ No: Do you usually check prices after you sell?

___ No: Why not? _____

___ Yes: Why didn't you check prices this time? _____

___ Yes: How? _____

Did it go up, down, or stay the same?

___ Went up

___ Stayed the same

___ Went down

How did you feel about the sale later?

___ Satisfied

___ Dissatisfied: What did you feel like doing? _____

Do you think you might like to sell your
_____ (PRODUCT) somewhere else next
time? _____

Do you usually check prices after you sell?

___ Yes: Why? _____

___ No: Why not? _____

Why did you check this time? _____

(IF QUESTIONS 23-31 HAVE NOT REFERRED TO THE MAIN PRODUCT, SKIP TO QUESTION 33)

32. Now getting back to the dealer,

32.01 Do you ever step in at this dealer's place of business just to chat with him even if you have no business to do there?

- ☐ No
- ☐ No, but no regular dealer
- ☐ Yes, but no regular dealer
- ☐ Yes: About how often would you say that you drop in? _____
What kinds of things do you usually talk about during these visits? _____

32.02 Now, is there another man connected with this dealer --not the same one with whom you arrange the sale-- who comes out here frequently (once a month, once a week, or more often) to pick up or check with you on your _____ (PRODUCT FROM QUESTION 23) ?

- ☐ Yes
- ☐ No

(IF "YES", MAKE SURE THAT THE RESPONDENT UNDERSTANDS THAT THE FOLLOWING QUESTIONS REFER TO AN OWNER, MANAGER, OR SOMEONE IN AUTHORITY IN THE PLACE OF BUSINESS. AUCTIONEERS ARE TO BE TREATED LIKE ANY OTHER DEALERS. IF "NO", MAKE NO COMMENT, BUT OMIT QUESTIONS 32.21-32.28)

32.11 Do you and your dealer, or any members of each of your families, ever visit one another at home?

- ☐ Yes - regularly
- ☐ Yes - sometimes
- ☐ Never
- ☐ Doesn't know dealer at all (SKIP TO QUESTION 32.21 BUT IF ANSWER TO QUESTION 32.02 ABOVE IS "NO", SKIP TO QUESTION 33)

32.12 Do you know where your dealer's home is?

- ☐ No
- ☐ Yes: Where is it located? _____
How many miles from here is it? _____

32.13 Are there any other things like bowling, card playing, or hunting and fishing that you ever do with your dealer?

- ☐ No
- ☐ Yes: What are some of these things? _____

32.14 Do you and your dealer, or members of your immediate families, attend the same church?

- ☐ Same church
- ☐ Different churches
- ☐ One does not attend church
- ☐ Neither attends church
- ☐ Doesn't know about the dealer

32.15 Did you know your dealer personally before you started doing business with him?

___ No

___ Yes: How many years ago did you first meet him? _____
What were the circumstances under which you first met him? _____

32.16 Are there any times when you see your dealer socially outside of his place of business?

___ No

___ Yes: Would you say that you see him this way fairly regularly or only occasionally?

___ Regularly

___ Occasionally

On what kinds of occasions do you get together socially with him? _____

How long have you known him socially? _____ Years

32.17 Do you usually call your dealer by his first name, last name, or a nickname?

___ First name

___ Last name

___ Nickname

___ A mixture of these

___ Doesn't know dealer's name.

32.18 As compared with how you feel about your closer friends, would you call this man a close friend, friend, acquaintance, or comparative stranger?

___ Close friend

___ Friend

___ Acquaintance

___ Comparative stranger

___ Don't know

(IF ANSWER TO 32.02 IS "NO", SKIP TO 33)

Now just a few questions about the man who comes out about your
_____ (PRODUCT).

32.21 Do you and he, or any members of each of your families, ever visit one another at home?

___ Yes - regularly

___ Yes - sometimes

___ Never

___ Doesn't know him at all (SKIP TO QUESTION 33)

32.22 Do you know where his home is?

___ No

___ Yes: Where is it located? _____

How many miles from here is it? _____

- 32.23 Are there any other things like bowling, card playing, or hunting and fishing that you ever do with him?
___ No
___ Yes: What are some of these things? _____
- 32.24 Do you and he, or members of your immediate families, attend the same church?
___ Same church
___ Different churches
___ Neither attends church
___ One of the two does not attend church
___ Doesn't know about the dealer
- 32.25 Did you know him personally before you started doing business with him?
___ No
___ Yes: How many years ago did you first meet him? _____ Years
- 32.26 Are there any times when you see him socially outside of his visits here?
___ No
___ Yes: Would you say that you see him this way fairly regularly, or only occasionally?
___ Regularly
___ Occasionally
On what kinds of occasions do you get together socially with him? _____
How long have you known him socially? _____ Years
- 32.27 Do you usually address him by his first name, last name, or a nickname?
___ First name
___ Last name
___ Nickname
___ A mixture of these
___ Doesn't know his name
- 32.28 As compared with how you feel about your closer friends, would you call this man a close friend, friend, acquaintance, or a comparative stranger?
___ Close friend
___ Friend
___ Acquaintance
___ Comparative stranger
___ Don't know

33. Did you use any hired labor in running your farm last year?

☐ No (SKIP TO QUESTION 34)

☐ Yes: Did they work for you year round or part time?

☐ Year round: How many were there? _____

☐ Part time: How many were there? _____

On the average how many days did the average part-time worker work for you? _____

OR

What was the total number of days worked for you by part-time workers? _____

Do you ever visit with, or socialize in any other way with people who do farm work for you?

☐ Yes

☐ No

☐ Depends

Do you usually have the same hired help year after year, or are there usually different ones?

☐ Same

☐ Different

☐ Some same, some different

Do you usually hire local people or migrants?

☐ Usually local

☐ About half and half

☐ Usually migrants

☐ Usually migrants, but prefer local people when

☐ I can get them

☐ Other (SPECIFY) _____

Do you usually address your regular hired help by their first or last names?

☐ First name

☐ Last names

☐ Nicknames

☐ Some of each

When you have hired help working here, are they usually allowed to use the house for things like washing and eating?

☐ Allowed to use the house

☐ Depends on who it is and the circumstances

☐ Can't use the house

34. Did you attend meetings of _____ (ORGANIZATION) during the past year?

Do you belong to _____ (ORGANIZATION)?

	No	Yes		No	Yes
the Farm Bureau			the Farm Bureau		
the Grange			the Grange		
the Farmer's Union			the Farmer's Union		
any local co-ops			any local co-ops		

34.1 Did you participate in programs of _____ (ORGANIZATION) last year?	Yes	No	
		Eligible	Not Eligible
Soil Conservation Service			
County Agent's programs			
D.H.I.A.			

34.2 Did you do any of these things last year?	No	Yes
Have home or office visits with the county agent		
Attend demonstrations and field days		
Attend county agent's meetings		
Make use of Exp. Sta. or Ext. Serv. publications		
Come in to MSU for information or advice		
Carry crop and/or livestock insurance		
Figure out costs and returns for each acre and/or animal		

- 34.3 Do you keep a set of books on your expenses and sales?
- ☐ No
- ☐ No, but keeps bills, receipts, checks
- ☐ Yes: Do you keep your records on everything that you produce all together, or for each product or enterprise separately, or do you only keep them for the one that's your major source of income?
- ☐ All records together
- ☐ Separate set of records for each product
- ☐ Records only for the major source of income
- ☐ Total records and a separate record for main product

(IF QUESTION 23-31 DID NOT REFER TO THE MAIN PRODUCT AND QUESTION 32 WAS OMITTED, ASK QUESTION 35)

(IF QUESTIONS 23-31 REFERRED TO THE MAIN PRODUCT AND QUESTION 32 WAS ASKED, OMIT QUESTION 35 AND SKIP TO QUESTION 36)

Now we'd like to get some information on how you market _____ (MAIN PRODUCT FROM QUESTION 2). These questions that follow ask about a dealer, and what we mean is the man with whom you arrange to sell your product.

- 35.01 Could you please give me the name and the place of business of the dealer to whom you sell this product?
- _____ Dealer's name
- _____ Town in which the business is located
- _____ No. of miles from farm to dealer's business
- 35.02 Do you usually sell this product to the same dealer?
- ___ Yes
- ___ No
- 35.03 a) How many years ago did you first sell this product to the dealer? _____ yrs.
- b) How many years has he been in business in this area? _____ yrs.
- c) How long have you been producing this product in this area? _____ yrs.
- 35.04 Do you usually have a written contract with this dealer or do you use a verbal agreement?
- ___ Written contract
- ___ Verbal agreement
- 35.05 Do you ever stop in at your dealer's place of business just to chat with him even if you have no business to do there?
- ___ No
- ___ No, but no regular dealer
- ___ Yes, but no regular dealer
- ___ Yes: About how often would you say that you drop in? _____
- What kinds of things do you usually talk about during these visits? _____
- 35.06 Now, is there another man connected with this dealer who comes out here at least once a month to pick up or check with you on your _____ (MAJOR PRODUCT FROM QUESTION 2) ?
- ___ Yes (IF "YES", MAKE SURE THAT THE RESPONDENT UNDERSTANDS THAT THE FOLLOWING QUESTIONS REFER TO AN OWNER, MANAGER, OR SOMEONE IN AUTHORITY IN THE PLACE OF BUSINESS. AUCTIONEERS ARE TO BE TREATED LIKE ANY OTHER DEALER. IF "NO", MAKE NO COMMENT, BUT OMIT QUESTIONS 35.21 - 35.24)
- ___ No
- 35.11 Do you and your dealer, or any members of each of your families, ever visit one another at home?
- ___ Yes - regularly
- ___ Yes - sometimes
- ___ Never
- ___ Doesn't know dealer at all (SKIP TO QUESTION 35.21 BUT IF 35.06 IS "NO", SKIP TO 36)

- 35.12 Do you know where your dealer's home is?
___ No
___ Yes: Where is it located? _____
How many miles from here is it? _____
- 35.13 Are there any other things like bowling, card playing, or hunting and fishing that you ever do with your dealer?
___ No
___ Yes: What are some of these things? _____
- 35.14 Do you and your dealer, or members of your immediate families, attend the same church?
___ The same church
___ Different churches
___ One of the two does not attend church
___ Neither attends church
___ Doesn't know about the dealer
- 35.15 Did you know your dealer personally before you started doing business with him?
___ No
___ Yes: How many years ago did you first meet him? _____
What were the circumstances under which you first met him? _____
- 35.16 Are there any times now when you see your dealer socially outside of his place of business?
___ No
___ Yes: Would you say that you see him this way fairly regularly or only occasionally?
___ Regularly
___ Occasionally
On what kinds of occasions do you get together socially with him? _____
How long have you known him socially? _____ yrs.
- 35.17 Do you usually call your dealer by his first name, last name or a nickname?
___ First name
___ Last name
___ Nickname
___ A mixture of these
- 35.18 As compared with how you feel about your closer friends, would you call this man a close friend, friend, acquaintance, or comparative stranger?
___ Close friend
___ Friend
___ Acquaintance
___ Comparative stranger

(IF 35.06 IS "NO", SKIP TO 36)

Now just a few questions about the man who comes out about your
(INSERT PRODUCT).

- 35.21 Do you and he, or any members of each of your families, ever visit one another at home?
___ Yes - regularly
___ Yes - sometimes
___ Never
___ Doesn't know him at all (SKIP TO QUESTION 36)
- 35.22 Do you know where his home is?
___ No
___ Yes: Where is it located? _____
How many miles from here is it? _____
- 35.23 Are there any other things like bowling, card playing, or hunting and fishing that you ever do with him?
___ No
___ Yes: What are some of these things? _____
- 35.24 Do you and he, or members of your immediate families, attend the same church?
___ The same church
___ Different churches
___ One of the two does not attend church
___ Neither attends church
___ Doesn't know about the dealer
- 35.25 Did you know him personally before you started doing business with him?
___ No
___ Yes: How many years ago did you first meet him? _____
- 35.26 Are there any times now when you see him socially outside of his visits here?
___ No
___ Yes: Would you say that you see him this way fairly regularly or only occasionally?
___ Regularly
___ Occasionally
On what kinds of occasions do you get together socially with him? _____
How long have you known him socially? _____ yrs.
- 35.27 Do you usually address him by his first name, last name, or a nickname?
___ First name
___ Last name
___ Nickname
___ A mixture of these

- 35.28 As compared with how you feel about your closer friends, would you call this man a close friend, friend, acquaintance, or a comparative stranger?
- ☐ Close friend
 - ☐ Friend
 - ☐ Acquaintance
 - ☐ Comparative stranger
36. I'd like to ask you some questions about the things you yourself do with your neighbors. I mean, the three or four families who live closest to you.
- 36.1 Do most of them farm?
- ☐ Yes
 - ☐ No: (IF "NO", SKIP TO QUESTION 36.4)
- 36.2 Do you lend farm equipment or supplies to each other?
- ☐ No
 - ☐ Yes: How often?
 - ☐ Often
 - ☐ Sometimes
- 36.3 Do you help each other out with getting work done?
- ☐ No
 - ☐ Yes: Do you just do this whenever any of you needs some help, or is it something you keep tabs on so that everyone gets about as much help as he gives?
 - ☐ Work exchange informal
 - ☐ Work exchange equalised
- 36.4 Do you usually call each other by first names or nicknames, or by last names?
- ☐ First names or nicknames
 - ☐ Last names
 - ☐ Doesn't know names
- 36.5 Is there borrowing of household supplies and items among these families?
- ☐ No
 - ☐ Yes
- 36.6 Do you sometimes make arrangements to go in to town together rather than always go in alone?
- ☐ No
 - ☐ Yes
- 36.7 Do you ask each other to do errands in town when you need to have something done and can't go in yourself?
- ☐ No
 - ☐ Yes

36.8 Do you or members of your families ever visit in each others' homes for a whole afternoon or evening together?

☐ No
☐ Yes

36.9 Do you or members of your families ever go on outings or picnics or go out hunting or fishing together?

☐ No
☐ Yes

37. Now I'd like to find out a few things about the local area.

37.1 What do you call this place around here? _____

37.2 (IF ANSWER TO QUESTION 37.1 IS NOT THE SAME NAME AS THAT OF THE CLOSEST TOWN CENTER)

Do you sometimes call it _____ (NAME OF CLOSEST TOWN CENTER)?

☐ Yes

☐ No: Why is that? _____

(IF ABOVE ANSWER IS "NO" BECAUSE FARM IS EQUIDISTANT TO TWO OR MORE TOWNS)

Do you have a preference for one of these?

☐ No

☐ Yes: Which? _____

37.3 (ASK ONLY IF A PLACE NAME IS GIVEN IN 37.1)

How much of an area does (NAME GIVEN IN QUESTION 37.1) take in?
(USE MAP AS A HELP IN GETTING AN ANSWER. TRY TO SKETCH IN BOUNDARIES, THEIR LENGTH, AND THE POSITION OF THE FARM AND TOWNS, IF ANY, WITHIN THEM. INDICATE DISTANCE FROM FARM TO TOWN.)

37.4 (ASK ONLY IF A PLACE NAME DIFFERENT FROM 37.1 IS GIVEN IN 37.2)

How much of an area does (NAME GIVEN IN QUESTION 37.2) take in?

(USE MAP AS A HELP IN GETTING AN ANSWER. TRY TO SKETCH IN BOUNDARIES, THEIR LENGTH, AND THE POSITION OF THE FARM AND TOWNS, IF ANY, WITHIN THEM. INDICATE DISTANCE FROM FARM TO TOWNS.)

(IF ANSWER TO 37.2 IS "YES", THEN QUESTIONS 37.5 to 38.3 REFER TO PLACE NAMED IN 37.2)

(IF ANSWER TO 37.2 IS "NO" AND A NAME IS GIVEN IN 37.1, THEN QUESTIONS 37.5 to 38.1 REFER TO THE PLACE NAMED IN 37.1 AND QUESTIONS 38.2 and 38.3 ARE GOVERNED BY THE NOTE PRECEDING 38.2)

37.5 How long have you lived around here?

___ Years

___ Lived here entire life (RECORD AGE, NOT "X")

38. Now we'd like to find out a little about how you feel about the community.

38.1 a. What things do you like about living around here? b. What things do you dislike about living around here?

38.11 (SKIP TO QUESTION 38.12 IF ANSWER TO QUESTION 37.5 INDICATES LIVED THERE ENTIRE LIFE)

How does this place around here compare with other places you've lived in?

___ This place evaluated better

___ This place evaluated as same

___ This place evaluated as worse

___ This place evaluated as better in some ways, worse in others (SPECIFY) _____

38.12 How does it compare with other places you've seen or visited?

___ It's the best

___ It's better than most

___ It's about the same as most

___ It's poorer than most

___ It's the worst

___ It's better in some ways, worse in others (SPECIFY) _____

38.13 Do you take pride in living around here? (IF NECESSARY) For example, do you have a feeling of pride when you tell a stranger where you're from?

___ Yes

___ No

(USE LOCALITY NAME FROM QUESTION 37.2 FOR QUESTIONS 38.2 and 38.3. IF QUESTION 37.2 IS "NO" BECAUSE FARM IS EQUI-DISTANT FROM TWO OR MORE TOWNS, TAKE THE PREFERENCE AMONG THESE AND REFER 38.2 and 38.3 TO THE PLACE PREFERRED. IF THE RESPONDENT HAS NO PREFERENCE AND AN ALTERNATIVE NAME IS GIVEN IN QUESTION 37.1, THEN USE THAT NAME. IF NO PLACE CAN BE DETERMINED IN THIS MANNER, THEN USE THE MAIL ADDRESS.)

38.2 Here is a list of a number of things which you may or may not do. If you do them, I'd like to know if you always do these things in _____ (TOWN CENTER), usually do them there, only sometimes do them, or never do them in _____ (TOWN CENTER).

(IF "don't do it at all" CHECK TO MAKE SURE THAT THE FACILITY IS PRESENT IN _____ (TOWN CENTER).)

Activity	Don't do it at all	Al-ways	Usu-ally	Some-times	Never		
					Pre-sent	Not pre-sent	Pres-ence D.K.
Use banking services							
Buy groceries							
Buy drugs							
Go to the movies							
Buy farm machinery							
Farm machinery repair done							
Buy farm supplies							
Visit relatives							
Buy hardware supplies							
Buy clothing							
Buy gasoline							
Car repairs done							
Attend sports events							
Attend church							

(IF DOESN'T ATTEND AT ALL)

Could you attend church in _____ if you wanted to?
That is, is there a church there that would be of
your choice? ___ Yes ___ No ___ Don't know

38.3 What proportion of your close friends live in the community?

- ___ All
- ___ Most
- ___ About half
- ___ Just a few
- ___ None

40. Is this the only farm you've operated for yourself?
 ___ Yes: How many years have you run this place? _____ Years
 ___ No: How many years have you operated farms for yourself?
 _____ Years
 How many years have you run this place? _____ Years

41. We'd appreciate knowing who else lives with you and what their approximate ages and education are.

Relation to respondent	Age	Last grade completed in school	Sex	Marital status
Respondent	_____	(DON'T ASK)	___ M ___ F	_____
_____	_____	_____	___ M ___ F	_____
_____	_____	_____	___ M ___ F	_____

- 42.1 About how much of all your assets are invested in the farm?
 ___ Less than 1/4
 ___ About 1/4
 ___ Between 1/4 and 1/2
 ___ About 1/2
 ___ Between 1/2 and 3/4
 ___ About 3/4
 ___ More than 3/4
 ___ All
- 42.2 About what proportion of your total assets invested in the farm are tied up in things that you couldn't sell for close to their value in ten days?
 ___ Less than 1/4
 ___ About 1/4
 ___ Between 1/4 and 1/2
 ___ About 1/2
 ___ Between 1/2 and 3/4
 ___ About 3/4
 ___ More than 3/4
 ___ All
- 42.3 How would you say your liabilities compare with your assets?
 ___ No liabilities
 ___ Liabilities less than 1/4 of assets
 ___ Liabilities about 1/4 of assets
 ___ Liabilities between 1/4 and 1/2 of assets
 ___ Liabilities about 1/2 of assets
 ___ Liabilities between 1/2 and 3/4 of assets
 ___ Liabilities about 3/4 of assets
 ___ Liabilities between 3/4 and all of assets
 ___ Liabilities equal to assets
 ___ Liabilities greater than assets
- 42.4 What would you say your average annual gross farm income has been for the past three years? _____

Well, that's all of the questions. Thank you very much for your time and cooperation.

Date _____	County _____
Farmer _____	TWP _____
Address _____	Seg. No. _____
Interviewer _____	Farm No. _____
	MA type _____
	MA score _____

Appendix C - Working Papers

RESEARCH DESIGN IN STRUCTURAL-FUNCTIONAL ANALYSIS

A CASE STUDY FROM APPLIED RESEARCH ON A COMMUNICATION SYSTEM*

Joel Smith, Robert C. Bealer, and Francis M. Sim
Michigan State University

Introduction

The writers of this paper have been concerned for some time with developing and testing theories of communication, in general, and mass communication, in particular. They were, therefore, favorably disposed to accept an opportunity that arose to engage in an applied research project involving a particular communication system being operated for program purposes. Specifically, the problem concerned the uses made of information about agricultural marketing being disseminated by the Agricultural Marketing Service of the United States Department of Agriculture. This seemed to provide an opportunity for a structural-functional analysis of a specific communication system since the programs of large-scale formal bureaucracies like government agencies are generally embodied in structures specifically designed for these purposes and since the question of use could easily be seen as a question of function.

We are concerned here with considering certain difficulties involved in doing any structural-functional analysis and in doing such an analysis in the kind of applied research situation in which we are

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¹
involved. We intend to indicate what those problems are and what sorts of adjustments had to be made in our research design in response to these problems. When we talk of problems in research, it should be understood that reference is to the very mundane problems of empirical research operations and not the more general methodological problems of structural-functional analysis that have concerned such people as Parsons, Levy, and Bredemeier.² The kinds of materials and experiences to be reported here should help to shed light on the general question raised by Merton as to the implications of research conditions for the outcomes of structural-functional analyses.³ The research design will not be discussed in detail but will be referred to only to illustrate the sorts of adjustments between the ideal and the reality that had to be made in a response to the sorts of problems experienced.

Operational Problems Arising in Any Structural-Functional Analysis

In accord with Levy's usage of the terms, three types of structural-functional analysis may be distinguished: (1) functional analysis in which the concern is with consequences attributable to the existence and operation of a unit under analysis; (2) structural analysis which is concerned with establishing propositions about the types of structures capable of serving specified functions; and (3) structural-functional analysis in which there is simultaneous concern with both types of questions.⁴ Our interest is in establishing the consequences of a particular social arrangement for some larger social arrangement of which it is a part and/or for other social arrangements, also included within this larger social arrangement, which can stand in the required

causal relation with the unit under analysis. As we have defined our terms, this type of question calls for functional analysis. However, for purposes of improved communication it shall be referred to as structural-functional analysis in order to be consistent with current usage among sociologists.

Structural-functional analysis, as defined here, raises a number of difficult problems in the designing of research to deal with a specific empirical case. Some of these problems revolve around definition, some around models of proof which may be utilized, and some around practical considerations concerning the social environment of experimental research. These problems will be discussed in this order.

There are at least three definitional problems: defining the unit which serves functions; defining units for which these functions may be served; and defining the units to be referred to in distinguishing latent and manifest functions in a given empirical case. The adopted definition refers to a unit with identifiable structure which has consequences for other units of identifiable structure. Accordingly, the question arises as to the kinds of units whose relationships may be investigated with a structural-functional approach. Are they to be defined as units by the groups acting within them? Are there such criteria as complexity of the structure of the unit, number of personnel participating in the unit, or degree of independence between the populations involved in each unit that need to be considered in deciding whether a given empirical problem is an appropriate vehicle for structural-functional analysis? There seems to be little consideration of this problem of defining units in the sociological literature on the

structural-functional approach. However, even if an analyst may look at any units that derive from his theoretical framework, the problem of defining the limits of these units remains.⁵

Formal criteria for distinguishing between manifest and latent functions have never been specified. While the twin criteria of intention and recognition have been suggested for this purpose, an important definitional problem remains in specific empirical research.⁶ Whose intentions and whose recognitions are crucial in assessing the status of a specific function? How is time to be handled? Granting that the analyst knows to whom he should look in determining intention and recognition, he must still decide the point in time at which these should be determined. This is an especially difficult matter in a structural-functional analysis conducted under conditions of applied research where the client, with a program, wanting to know what he is actually doing, is in rather constant contact with the investigator. Thus, the client is informing himself of the investigator's ideas and findings at every step of the way. Under these conditions, the client's recognition of the functions of his program are subject to change through time. Less likely, but quite possible, is a related change in intent. An investigator must select a time at which he will attempt to determine the intentions and recognitions of the group or person which he defines as crucial for this purpose.

As regards models of proof, the research design of the controlled projected experiment is usually deemed to be the most powerful investigatory tool available for establishing causal relationships with high degrees of probability among empirical units. If one grants the

possibility of functional alternatives, equivalents, or substitutes--and the proponents of the structural-functional approach seem completely in accord on this point--it is extremely difficult, if not impossible, to determine the functions of existing units experimentally. The extreme degree of urgency attached to most functions suggests that, in most cases, the removal of a structure hypothesized as serving a particular function would result either in compensatory adjustments in other structures so that the function might still be served, or in the direct taking-over of the function by other units with no changes in their structures for this purpose. Attempting to overcome this difficulty by removing all units with structures capable of serving the function simply confounds the experiment, since it would be impossible to know which of the many units removed was responsible for the function if it appeared that the function was no longer being served. Of course, it is extremely unlikely that our knowledge of social structure is adequate for indicating what all of the possible "alternatives" are. While it is conceivable that a very complex experimental design might be evolved to get around the difficulties posed by the possibility of functional alternatives, it is very unlikely that such a design might be translated into an effective set of research operations. At the present time a direct experimental test of structural-functional hypotheses is not feasible and less powerful methods of hypothesis evaluation need to be substituted.

If the difficulties in using experimental model of proof did not exist, there would still be few opportunities for testing structural-functional hypotheses experimentally because of the intrusion of other

practical considerations. The concept of manifest function often reflects positive evaluation for at least some of the participants. Therefore, an experiment necessitating the removal of a structure so as to evaluate its functions would probably meet strong resistance on the part of persons involved in the units that might possibly be affected. The experimenter is planning to destroy a "good", not do away with an "evil." This would be a source of social resistance to social experiments that goes beyond objections based on the general notion that sociological experiments are immoral and unethical because an experimenter (one person) manipulates other persons.

Difficulties in Executing Structural-Functional Analyses in Applied Research Settings

The above discussion was limited to those problems which arise in doing any empirical research from a structural-functional approach, and of which we are most acutely aware by reason of our experiences. Now we should like to consider some other difficulties which we experienced and which we attribute to the fact that our attempt at structural-functional analysis has an applied research setting. These difficulties are not merely a by-product of the particular client or his special problem, but will occur frequently when an applied research problem is used as a vehicle for executing a structural-functional analysis. However, as these problems are stated, they shall be illustrated by examples drawn from this project.

The client for applied research frequently tends to see his problems as specific and limited in scope. One of the strictures about—and claimed advantages of—structural-functional analysis is that the

analysis should be complete.⁸ While we would hesitate to argue that an investigator must pursue his analyses of the functions of a particular unit to the point at which he can give a definitive enumeration of all the functions of a unit, we do interpret this to mean that an investigator should be able to pursue the identification of both latent and manifest functions as far as he wishes. Such broad research pursuits are usually discouraged by clients interested only in the extent to which certain chosen functions are being served by the structures of the units with which they are concerned. If the research does not produce evidence that the specified functions are being served adequately, the client is usually uninterested in pursuing the question of whether any other functions are being served by the unit. In our particular case, the client's representatives are concerned largely with whether or not there is what may be considered an economic gain for persons who consume market information. Attempts to place this type of consequence in the perspective of other types of consequences have usually received no support. The possibilities of executing a "complete" structural-functional analysis are very severely limited by what Read and Bain has noted as a frequent inability of people with "practical" concerns to see research-worthy problems.⁹

The applied problem is often couched in such a way that the investigator has no choice as to his units of observation. These client-determined units are often not the ones with which a structural-functional analysis might most appropriately be concerned. While the investigator may be interested in individuals as the units in which consequences of a given unit's structure might appear, he is almost

certainly interested in such units as institutions, organizations, informal groups and patterned systems. In our research most of the interests of the client forces the use of individual farmers as units of observation. By aggregating data collected from individuals, it might be possible to get some approximate ideas of the functions of market information for other units of interest--but these other units can only be those in which farmers may be involved. Moreover, for those units in which farmers are involved, we can only get a notion of those functions in which farmers are involved. Thus, data collected from farmers yields no information about the functions of market information for the exchange relationships between dealers in agricultural products and the people to whom they sell. However, something can be learned about the exchange relationship for agricultural commodities as it exists between farmers and dealers, though even for this relationship the unit of observation is too limited to yield a full picture of functions. The function of market information for the farmer's formulation of his price expectation can be explored but the function of the same information in the dealer's formulation of his offered price cannot be determined. Therefore, in as much as an applied investigation forces certain limited units of observation on the investigator, an incomplete and systematically biased picture of the functions of the structural unit being investigated will result.

The client of applied research does more than define the problem and force units of observation on the structural-functional analyst. He also forces the investigator to adopt certain techniques of data

collection. After all, he is, more than likely, a man who sees himself beset with critical problems and, accordingly, he is experiencing uncertainty as something unpleasant. Therefore, he may well insist that the investigator utilize techniques which will bring him the kind of answer about which he can feel certain. Our client is concerned that we apply techniques which yield "quantifiable" data. We place quantifiable in quotation marks because it is probably not the appropriate concept for describing the data he desires. Terminology aside, he prefers interview questions which may be answered by counting or measuring to the kind of question that yields a detailed response which must be interpreted by thematic analysis. Regardless of the client's reasons for preferring particular "quantitative" techniques (though it appears to be a reliance on what he spuriously conceives as quantitative as a reliable way to increase his feelings of certainty in a situation of uncertainty), the net effect is often to make the data unrevealing for purposes of structural-functional analysis, even if the units of observation are appropriate for this purpose.

Finally, the research client rarely sees the desirability of supporting an inquiry into latent functions. These lack significance and meaning for him and this is to be expected. If such functions were significant and meaningful, they would very likely have been manifest functions for the unit. We have engaged in long controversies with our client in efforts to retain items in the interview schedule that might indicate some of the latent functions of the market information system. The controversies are usually lost when the issue comes to a head. If one eventually wins such a controversy after a series of such losses,

he begins to wonder whether the function at issue is not, in fact, manifest. Thus, the situation of the structural-functional analyst engaged in applied research, biases the outcome of his work in the direction of certain functions, which are most likely manifest, and which are limited both by the kinds of units of observation and by the kinds of techniques of observation that will be allowed to him.

Apparent Advantages of Applied Research Settings for Structural-Functional Analysis

We should like to assess now some of the apparent advantages of the applied research setting for structural-functional analysis in the light of our experiences. It will be assumed, of course, for purposes of this discussion that the difficulties just considered either do not exist or can be solved.¹⁰ Our evaluation of these advantages is based completely on our own case at this point. We do not know whether our impressions would be borne out by other experiences. Anticipating the discussion, to clarify this point, we will indicate what appear to be certain advantages of the applied research situation for conducting a structural-functional analysis, but conclude that these advantages may be illusory. This conclusion will be based on problems particular to our own study which may be so idiosyncratic that they have led to an unwarranted conclusion about the apparent advantages of the situation.

What are the apparent advantages of an applied research setting for a structural-functional analysis? Briefly it would appear that it is an attractive situation both for minimizing the problems of defining the limits and the structure of the unit whose functions are being analyzed and for determining the intentions and recognition necessary for

distinguishing latent and manifest functions. The typical client for applied research is a formal organization with a program and set of goals. They know what they are and what they want and resort to research because they sense some problems regarding their effectiveness. Thus, the unit whose functions are to be analyzed is predefined and its structure readily accessible for examination. Moreover, because a structure had to be designed to implement the ends of the organization, the intentions of the unit are likely to be clear and recognizable. For these reasons it might be concluded that the important definitional problems just mentioned would be minimized. While this still seems to be an eminently reasonable conclusion, our experiences with this study force us to question it.

At the time that the contract was being negotiated we were perfectly willing to talk to the clients in terms of research concerning farmers' use of market information. Both our common sense and their informal examples of things they were concerned with convinced us that we could easily formulate meanings for such terms as "use" and "market information" once the project was underway. To our surprise and discomfort, this was not so. We managed to get some consensus that the information was to be of use in the sense that it would help a farmer to improve his status. Beyond this we could get no consensus. The program is operated to help farmers improve their status through more effective marketing but the concept of marketing is completely unclear. Improvements may be reflected in such diverse activities as formulating a precise estimate of what price to require, on the one hand, and

decisions about commodities to be produced, on the other. Moreover, no agreement as to the referents of status could be elicited from responsible program officials. While individuals were willing to give their own interpretations, they were not motivated to resolve their differences and achieve consensus. The operators of the program do not share precisely defined intentions.

Perhaps the more amazing experience came from our attempts to identify the unit whose structure is presumably geared to execute these ill-defined functions. There is, as far as we are able to determine, no clearly distinguishable unit structured to implement this program. There are units charged with collecting and disseminating such information as current prices of specific commodities at specific markets, supply information on specific commodities, price outlooks, and so on. But these supply only a part of what is considered market information. There are many other categories of information that have shifting status and are considered to be market information only if they are brought to bear on the marketing process; e.g., weather reports, production technique information. In interviewing various representatives of the client we could find no informational program of the entire Department that might not under some circumstances be defined as market information. Moreover, since the personnel involved consider it their task to encourage non-governmental units to collect and disseminate such information, the structure of their program knows no bounds. We have been unable to benefit from the apparent advantages of the applied research situation for structural-functional analysis.

Superior hindsight brought to bear as a consequence of these experiences enables us to see some general reasons for the illusory character of the apparent advantages of the applied problem setting. Most studies of formal organization show that extremely significant informal structures develop within the formal structure. The identification of the structure of the formal organization (i.e., the unit whose functions are being investigated) with a problem is probably never a simple process. In addition, studies of bureaucratic organizations repeatedly reveal that the intentions of the personnel often diverge from those formally stated for the organization. One very effective technique for making it possible for personnel to maintain their varied intentions without feeling themselves to be unfaithful to or in conflict with the aims of the organization is to keep the program and aims of the organization vague so that anyone may apply his own interpretation. Moreover, vagueness in aims also makes evaluation of performance in terms of effectiveness impossible. Some of these considerations, all of which are untested, may make even more attractive the hypothesis of the inherent disadvantages of the applied setting for structural-functional analysis.

Consequences for the Research Design

While the discussion of structural-functional analysis in general and in the context of applied research indicated a number of difficulties in executing research we do not conclude that such analyses should not be undertaken. All executed research involves a series of compromises with some ideal model. Structural-functional analysis in an applied

setting is not unique in this respect. Our aim is to profit from our recognition of these difficulties by using our experience to indicate both the kinds of limitations of research findings deriving from such research situations and the sorts of steps that may be taken to circumvent these difficulties.

The problems involved in carrying out any structural-functional analysis are, of course, not uniquely experienced by us. Some are definitional and can only be handled by arbitrary definition. We cannot indicate how definitions were established or what they are because of space limitations.¹¹ However, the solution is not as easy as the term "arbitrary" might suggest and can hardly be resolved satisfactorily without having some previously developed theoretical models for the unit under analysis. The general difficulties blocking the application of a controlled experimental model do not appear resolvable at this time. Such models cannot be used, at present, for a structural-functional analysis of any large-scale social unit. Approximations to this model by correlational approaches seem to offer the best compromise and that is to be our analytic approach.

We have noted a number of difficulties in conducting a "complete" structural-functional analysis in an applied setting. All of these seem to work in the direction of limiting the functions that will be established for the unit under analysis to a small number of manifest functions. To the extent that the pressures in this direction cannot be avoided, the analyst can only recognize these qualifications on his data and try to appreciate them for what they do tell him. The limiting effects of our client's preference for certain units of observation and

observational techniques could not be avoided. We shall try to convert these restrictions to advantages by specifying our areas of omission in more detail than is usual in the reporting of sociological research. However, some of the restrictions on functions to be investigated within those limits set by the units and techniques of observation were circumvented. We were fortunate in having some independent support for our research and so it will be possible to put additional questions to the respondents which may shed light on other functions with which the client is not concerned. This additional effort will be directed mainly to some possible latent functions of participation in the market information system by farmers.

These additional resources could not have been applied to an expansion of our analysis, of course, without first solving the problems caused by the client's inability to identify either the structure involved in executing his program or the intentions of the program. The problem of structure was resolved by taking advantage of the fact that all of the client's representatives agreed that some identifiable units were a part of the program. Therefore, even though the client's interests will force us to catalogue all information brought to bear in determining a given action, we should be able to ascertain whether the materials disseminated by one of these units--Market News Services--had a function in the situation. We will, therefore, attempt a structural-functional analysis of a smaller, more discrete unit than that with which the client is concerned.

The problem of establishing which functions might be considered latent and which manifest was handled somewhat differently. On the

rather simple assumption that a program designed to disseminate information about farm markets could have been meant to affect what a farmer did as he sold his products, it was decided that consequences of the system for all aspects of how a farmer behaved in the various segments of the marketing process would be considered manifest. This decision was somewhat validated by the relative willingness of the client's representatives to suggest some points in the marketing processes of farmers at which they thought effects of market information could appear. Although they were not willing to assert that the creation of such effects is part of the program's formal goals, this degree of consensus was accepted as sufficient. Given a selection of manifest functions, we were then in a position to ask ourselves what other functions we as sociologists could see as possibly emanating from the operation of a structure like that of Market News Services. The selection was based on the range of possibilities afforded by imagination and intuition. These still seem to be the major means by which latent functions are apprehended.

When this research is concluded we hope to know something about some of the functions of Market News Services and their relative importance. If this communication system can be related to a type of communication system, we may know somewhat more than this. Failing either or both these aims, the experience may at least shed a little light both on the actual experience of undertaking and carrying through such an analysis and on some of the ways in which ideological factors affect the outcomes of structural-functional analyses.

Footnotes

¹ This would appear to be very relevant to many sociologists since, although we are unable to document this quantitatively, a considerable portion of the research energy of sociologists is devoted to applied research problems under conditions like those of a government contract.

² Talcott Parsons, "The Present Position and Prospects of Systematic Theory in Sociology," in Georges Gurwitsch and Wilbert Moore (eds.), Twentieth Century Sociology, New York: Philosophical Library, 1945, pp. 42-69; Marion J. Levy, Jr., The Structure of Society, Princeton, New Jersey: Princeton University Press, 1952; Harry C. Bredemeier, "The Methodology of Functionalism," American Sociological Review, 20 (April, 1955), pp. 172-180.

³ In the eleventh category of his paradigm for structural-functional analysis Merton specifically raises the question of the impact of client interests on the outcome of such analyses. Robert K. Merton, Social Theory and Social Structure, Glencoe, Illinois: The Free Press, 1949, p. 54.

⁴ Cf. Marion J. Levy, Jr., op. cit., p. 62.

⁵ Ibid., pp. 34-38.

⁶ Ibid., p. 83. Also Robert K. Merton, op. cit., p. 51.

⁷ None of the discussion which follows is intended as criticism of our particular client.

⁸ Talcott Parsons, op. cit., p. 48.

⁹ Read Bain, "Action Research and Group Dynamics," unpublished paper delivered to the Sociological Research Association on September 7, 1950, p. 5.

¹⁰ There is some evidence from our experience that these problems are solvable. Research support from other sources, for example, can be used to do those things necessary for filling in the gaps created by the conditions imposed by the client for applied research.

¹¹ This matter will be discussed in considerable detail in a paper now in preparation.

Communication and the "Consequences" of Communication*

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In his recent assessment of the current state of sociological theory for our British Colleagues, Robert Merton reasserts the need for and desirability of theories of the middle range.¹ Such theories apply only to restricted ranges of phenomena and may be illustrated by communication theory.² Unfortunately, Merton does not go on to consider the "restrictions" characteristic of such theories. No procedures are suggested which may be used for setting the limits to the range of phenomena to be considered by such a theory. This, however, is precisely the problem that must be addressed and resolved if progress is to be made toward the development of an adequate middle range sociological theory of communication.³ Unless major advances are being reported in some of the papers now being delivered, it seems safe to say that there has been little progress since the need for such a theory was noted some years ago.

In our own work at developing such a theory, we have been led to the conclusion that a major breakthrough can be achieved only if the problem of the range of phenomena or types of questions to be covered by a middle range theory is attacked directly. Essentially this is a problem in definition, but experience suggests that formally acceptable definitions alone do not solve such problems. Although there is a

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generally adequate definition of communication in common use, many people claiming interests in the subject translate these interests into research on questions which fall outside the range indicated as appropriate by this definition. Since these investigations are conducted, at least in part, to test theoretical propositions concerning "communication," it seems important to ask what kinds of questions do provide appropriate data for testing "communication theories."

Most investigations commonly considered to be "communications" research have either or both of two types of phenomena as foci. One of these types is the transfer of a set of meanings embodied in a message form in a manner that permits it to be received in a preferred way by a specified person or persons. Questions regarding phenomena of this type concern all aspects of communicative situations - communication acts, processes, structures, systems, or combinations of these - and we would refer to research on such questions as communication research.⁵ The central core of interest is the conditions of meaning transfer. The other type of phenomenon investigated in "communications" research are events or circumstances which may be considered as dependent on prior communication activities and/or conditions. This we term the "consequences" of communication and distinguish from the other research focus by the type of factor seen as dependent and problematic.⁶ In communication research we must determine whether potential recipients of messages have information, represented by the form of these messages, as a result of having been exposed to these messages. The change within the recipient is the only change of interest. Questions regarding consequences refer not only to any and all other changes in

both the behavior and mental condition of the message recipients, but also to any other condition viewed as possibly being dependent on a given communicative situation.

Should an adequate theory of communication apply to questions involving either or both of these phenomena? Apparently, opinions diverge on this matter. Communication theories currently being formulated differ in the range of phenomena with which they deal. Some major efforts at theoretical formulations, largely those of information theorists and cyberneticists, tend to focus only on message transfer.⁷ Others, in contrast, and here are found most sociologists, journalists, psychologists, and educators, seem to be concerned with both types of phenomena.⁸ The implications of this breadth of interest for the development of an adequate sociological theory of communication might be seen most easily if we consider first the meaning usually assigned to the term communication.

Communication has been used here with the following definition implicit: the process through which a set of meanings embodied in a message is conveyed to a person or persons in such a way that the meanings received are equivalent to those which the initiator (s) of the message intended. While this definition is not a formal statement to which we might adhere in the systematic elaboration of a theory, it seems to embody the meaning to which most sociologists subscribe. It suggests that the empirical referents of an adequate sociological theory of communication would be limited to only the first of the phenomena we have described, i.e., to message transfer. In this sense of the definition, most current efforts at theoretical formulations by sociologists

are misdirected and inefficient.

The breadth of coverage intended will result in a less than "parsimonious" theory of communication. In order to see the grounds for this assertion, consider the following table which summarizes all possible relationships between given communicative situations and any given phenomena which may be considered potential consequences of these situations.

	<u>Existence of Specific Communicative Situation</u>	
	<u>No</u>	<u>Yes</u>
<u>Occurrence of Specified Consequence</u>	Yes	No

If given communicative situations relate to their potential consequences so as to fall only in the lower left and/or upper right hand cells of this table, then consequences are distinguished from communication only semantically and can be accounted for completely by a communication theory. In predicting consequences, only those things need be known which are specified in the theory as necessary for accounting for the communicative situation. The distinction in empirical phenomena that has been suggested may be ignored and communication should be redefined to include the possibility of all kinds of consequences in the communicative situation.

The occurrence of cases in the upper left and/or lower right hand cells, however, suggests the independence of the phenomena we have distinguished. Knowledge of the communicative situation, by itself, is inadequate for predicting a consequence.⁹ Relatedly, information

indicated by a theory of communication as necessary in accounting for a communicative situation would be insufficient for predicting the occurrence of the consequence. Undetermined additional information concerning factors and/or relationships superfluous for the communication theory would be necessary, and the canon of parsimony in theory building would be violated. Indeed in directly addressing the problem of consequences, one would probably find that some of the information necessary for accounting for the communicative situation was inapplicable.¹⁰

While no formal proof has been attempted, we would assert that many cases occur which can appropriately be classified in the upper left and lower right hand cells. Whenever a directive message is received but its intentions not implemented because the receivers lack the means of implementation, we have the conditions of the lower right hand cell. The upper left hand cell is represented by all cases in which intended consequences occur among members of intended audiences even though these persons never receive the message. It is because both these situations do occur that the success of a communication attempt cannot be assessed by observing voluntary behavior. In both types of cases, the explanations of the communication situation and of the consequence arrangement require reference to different sets of factors.

If more detailed consideration could be given to the distinction between the upper left and lower right hand cells, it would become quite clear that the view-point being expressed here is largely that of functionalism. While we are unable to discuss the relevance of the problems raised for functional analysis in the brief space available

here, it seems advisable to indicate how the problems of communication theory relate to the functionalist framework. Very briefly, both communicative situations and consequences may be analyzed as structure and function. Either phenomenon may be assigned either position depending on the point in the empirical process that is chosen as the starting point for analysis.¹¹ In analyzing the communicative situation, the existence or non-existence of acts, systems, or processes which are viewed as communicative is treated as a function of a configuration of other factors which constitute the structure for structural-functional analysis. In analyzing consequences, the communicative situation provides the structure, and its relation to other specified conditions viewed as possible consequences becomes problematic. The possibility of both structural and functional alternatives or equivalents here is well-known, i.e., any given structure may have a variety of different consequences and any given consequence may be produced by a variety of different structures.¹²

This structural-functional view of communication analysis points up the need for analytic disjunction of communicative situations and possible consequences, since their relation is contingent. But it also emphasizes that we are not suggesting that communicative situations and their possible consequences are unrelated. Perhaps the problems we have been discussing in this paper have gone unrecognized because communication analysts have not made their commitments to structural-functional analysis explicit and, accordingly, have been unable to see its implications.¹³

The efficacy of divorcing the two questions of communicative

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situation and their possible consequences might be demonstrated by formulating and explicating models necessary for considering each question as independent. Comparison of these models would indicate the extent of commonality between the two questions. In a current investigation of specific communication systems this is being attempted. We are delimiting and supplying a general structural model of communication (appropriate to research concerning communication per se) and, then, executing a functional analysis of the consequences of communication. The extent to which the variables of the communication model account for the consequences can then be examined as data concerning the independence of these two types of questions.

We are led to conclude from the considerations reviewed that development of an adequate sociological theory of communication will be delayed as long as we fail to distinguish communication and its consequences. Communication theory should not be designed with any concern for its ability to account for the consequences of communication. The relationship of communicative situations to their consequences is appropriately treated as a separate matter. While this does not help directly in developing theory, it may lead to a more efficient concentration of effort in this direction by providing a criterion for judging the relevance of particular empirical situations under consideration.

We do not, however, wish to argue that questions concerning the consequences of communication are not sociologically relevant. On the contrary, these are often as or more interesting than communication per se.¹⁴ We feel, though, that such matters will be understood more adequately if treated in their own right. Perhaps a more general concern

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with the limits of theories is necessary for a more rapid development
of adequate sociological theories of less than global scope.

Footnotes

¹ R. K. Merton, "The Role Set: Problems in Sociological Theory," British Journal of Sociology, VII, 2 (June, 1957), 106-120.

² Ibid., 108-109. Communication theories, of course, provide only one example of middle range theories. Stouffer's theory of intervening opportunities, Burgess' theory of urban spatial organization, Winch's theory of homogamy in mate selection, and Sutherland's theory of differential association are just a few examples of the wide variety of such theories with which sociology abounds.

³ When we speak, throughout this paper, of a sociological theory we use the term sociology in the sense that collegueship within the discipline implies shared orientations and points of view which are reflected in common lines of conceptual development and use. The sense of orientation is used in the same way as used by Robert Merton who suggests that the provision of such an orientation is one of the prime functions of theory. "Sociological Theory," American Journal of Sociology, L, 6 (May, 1945), 464-465.

⁴ M. W. Riley and J. W. Riley, Jr., "A Sociological Approach to Communications Research," Public Opinion Quarterly, XV, 3 (June, 1951), 445-460. The absence of such a theory has resulted in little progress in codifying (R. K. Merton. Ibid., 472-473) the vast number of investigations of mass communication. The major effort of Paul Lazarsfeld prior to the Riley's statement ("Communications Research and the Social Psychologist," in Current Trends in Social Psychology, (ed. W. Dennis) Pittsburgh: University of Pittsburgh Press, 1948, 218-273.) Handel's work on the movies (L. Handel, Hollywood Looks at Its Audience, Urbana:

University of Illinois Press, 1950), and Bogart's on television (L. Bogart, The Age of Television, New York: Ungar, 1957) are not effective efforts in this direction. The work of Katz and Lazarsfeld is a more meaningful step in this direction, but happens to suffer certain major flaws if the arguments to be presented here have merit (E. Katz and P. F. Lazarsfeld, Personal Influence, Glencoe: The Free Press, 1955).

⁵ An important step in the direction of a useful logically consistent set of definitions for these various concepts is contained in a paper delivered to the Seminar on the Sociology of Mass Communication at Michigan State University by Francis M. Sim, James Harkness, and James Flynn on March 22, 1956.

⁶ These two categories cross-cut the common "control, content, audience, effects" classification of communications research. Depending upon what is seen as problematic, studies would fall into either or both of these categories irrespective of how they might be classified into the more traditional scheme.

⁷ W. R. Ashby, An Introduction to Cybernetics, (New York: John Wiley, 1956); E. Shannon and W. Weaver, The Mathematical Theory of Communication (Urbana: University of Illinois Press, 1949); Scientific American, ed., Automatic Control (New York: Simon and Schuster, 1955), 83-121; exemplify theories of this type. Wilbur Schramm also proposes a theory which, on its manifest level, appears to exclude consequences from its province ("Procedures and Effects on Mass Communication," in Mass Media and Education, The Fifty-Third Yearbook of the National Society for the Study of Education, Part II, ed. N. B. Henry (Chicago: University of Chicago Press, 1954), 11-138. However, an analysis of the conceptual

distinctions proposed suggests that Schramm's interest in communication is seriously colored by a concern with the consequences of communication.

⁸ E. Katz and P. F. Lazarsfeld, op. cit., E. Katz, "The Two Step Flow of Communication: An Up-to-Date Report on an Hypothesis," Public Opinion Quarterly, XXI, 1 (Spring, 1957), 61-78; B. Berelson, "Communications and Public Opinion," in Communications in Modern Society, ed. W. Schramm (Urbana: University of Illinois Press, 1948), 168-185; J. T. Klapper, The Effects of Mass Media (New York: Bureau of Applied Social Research, Columbia University, 1949), mimeo: B. H. Westley and M. S. MacLean, Jr., "A Conceptual Model for Communications Research," Audio-Visual Communication Review III, (Winter, 1955), 3-12; M. S. MacLean, Jr., and B. H. Westley, "Research on Fortuitous Communication: A Review," Audio-Visual Communication Review III, (Spring, 1955, 119-137); G. Gerbner, "Toward a General Model of Communication," Audio-Visual Communication Review, IV (Summer, 1956), 171-199; F. Fearing, "Social Impact of the Mass Media of Communication" in Mass Media and Education, op. cit., 165-191; and T. M. Newcomb, "An Approach to the Study of Communicative Acts," Psychological Review, LX, 6 (November, 1953), 393-404. Perhaps this tendency to see both types of phenomena as subsumable under the same theory, so clearly expressed by Newcomb when he says with regard to his own efforts that "It seems likely that the dynamics of such a system are such that from an adequate understanding of its properties at a given moment there can be predicted both the likelihood of a given act of communication and the nature of changes in those properties which will result from that act," (Ibid., p. 403), results from an uncritical acceptance of the now classic statement that

the concern of communications research is "who says what to whom under what circumstances with what effect."

⁹ M. L. DeFleur, "A Mass Communication Model of Stimulus Responses Relationships: An Experiment in Leaflet Message Diffusion," Sociometry, XIX, (March, 1956); and E. Katz and P. F. Lazarsfeld, Op. cit., 137-334, offer two cases of important recent research illustrating this point.

¹⁰ M. L. DeFleur, Ibid., 12-25.

¹¹ M. J. Levy, Jr., The Structure of Society (Princeton: Princeton University Press, 1952), 60-62.

¹² R. K. Merton, Social Theory and Social Structure, (Glencoe, The Free Press, 1949) 35-36.

¹³ Ibid., p. 36.

¹⁴ Nor do we agree with MacLean and Westley ("Research on Fortuitous Communication: A Review," op. cit.) that, "Pure message studies would probably bear little fruit." (p. 126).

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text notes that without reliable records, it is difficult to track progress, identify issues, and make informed decisions.

2. The second part of the document outlines the specific steps and procedures for implementing a robust record-keeping system. This includes identifying the types of records that need to be maintained, determining the frequency of updates, and establishing clear roles and responsibilities for data management. It also addresses the need for secure storage and access controls to protect sensitive information.

3. The third part of the document provides a detailed overview of the various tools and technologies available to facilitate record-keeping. It compares different software solutions, highlighting their strengths and weaknesses in terms of ease of use, scalability, and integration with existing systems. The text also discusses the importance of regular backups and disaster recovery plans to ensure data integrity and availability.

4. The fourth part of the document focuses on the human element of record-keeping, emphasizing the need for training and ongoing support. It stresses that even the most sophisticated system is only as good as the people using it. Therefore, providing comprehensive training and documentation is crucial for ensuring that all users understand the procedures and can maintain the system effectively.

5. The fifth part of the document discusses the importance of regular audits and reviews to ensure the continued accuracy and reliability of the records. It outlines the process for conducting these audits, including the selection of independent reviewers and the use of standardized checklists. The text also highlights the value of feedback from users in identifying areas for improvement and making necessary adjustments to the system.

6. The sixth part of the document provides a summary of the key findings and recommendations. It reiterates the importance of a proactive approach to record-keeping and the need for continuous improvement. The text concludes by encouraging the implementation of the proposed system and the ongoing monitoring and evaluation of its performance.

7. The final part of the document includes a list of references and a glossary of terms. The references cite various industry standards and best practices that inform the document's recommendations. The glossary provides clear definitions for key terms and concepts used throughout the text, ensuring that all readers have a common understanding of the terminology.

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