

VALUING OF THE MATERIAL ENVIRONMENT:
A CONCEPTUAL MODEL OF OBJECT VALUE

Dissertation for the Degree of Ph. D.

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VIRGINIA T. BOYD

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This is to certify that the

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Virginia Theresa Boyd

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ABSTRACT

VALUING OF THE MATERIAL ENVIRONMENT: A CONCEPTUAL MODEL OF OBJECT VALUE

By

Virginia T. Boyd

The study focused on the interface between an individual and the material environment, and on one aspect of that interface in particular: the value that the individual assigns to objects. The study developed out of the work of value theorist Clarence I. Lewis. Two dimensions of extrinsic value were identified which individuals appear to use to assign value to objects and an interrelationship between the two was suggested. Based on the two dimensions, a conceptual model for discrimination of object value was developed. The dimensions were: an evaluation of the object's instrumentality or its ability to function for an end beyond itself, and an evaluation of the object's inherentness or its ability to provide intrinsic satisfaction directly. The model allows the individual to assign a weight to each of the dimensions, either positive or negative which permits four categories of object value: (1) negative instrumental value and negative inherent value--an object neither functions well nor is visually appreciable, (2) negative instrumental and positive inherent value--an object does not function well, but is visually very appreciable, (3) positive instrumental and positive inherent

value--an object is functional and appreciable, and (4) positive instrumental and negative inherent value--an object is very functional, but is not considered visually appreciable.

The conceptual model was submitted to an empirical test to determine its validity. The procedure for determining validity consisted of assembling 13 photographs of objects representing the four value categories and developing a test form to record respondents' evaluations of the objects in four ways based on the conceptual model. A panel of design professionals and a sample of 116 female students from an undergraduate introductory design class were asked to evaluate the objects using the test developed.

Three hypotheses were identified to determine whether validity for the conceptual model as presented in the empirical test had been established:

- Hypothesis 1: The conceptual model was capable of consistently discriminating four categories of object value across several groups of individuals.
- Hypothesis 2: The conceptual model was capable of detecting change in the perception of object value over time.
- Hypothesis 3: Individuals having high aesthetic interest (as defined by the Allport-Vernon-Lindzey Values Inventory) would evidence greater consistency with the classifications of the panel of professionals and the author than those without a high aesthetic value orientation.

Findings of two of the three hypotheses were supportive of the hypotheses which gave evidence for the validity of the conceptual model. In response to Hypothesis 1, consistency of responses among

author, panel of professionals, and design class at both pretest and posttest occurred for nine out of thirteen objects. In order to respond to Hypotheses 2, data was taken at both the beginning and end of the design course hypothesizing that if the empirical model was capable of assessing dimensions of value, it would be able to register change in value assignments which could be expected when students were introduced to fundamental design concepts. Results supported the hypothesis for eight out of the thirteen objects and the group mean for the total score developed for the empirical test changed significantly (.001) toward greater consistency on posttest. Analyses of interaction effect obtained from a two-way analysis of variance technique suggested that individuals used a common set of criteria for assigning value and used it in a systematic manner. This suggested that when new information was introduced (the design course) or when items were changed on the empirical test, the empirical model and by implication, the conceptual model, was capable of registering the change. The third hypothesis could not be adequately responded to because the subsample of individuals within the class was not large enough to provide reliable information.

✕ Results of the study showed support for the formulation of object value according to the model developed suggesting that there is such a logical construct held and used in a systematic and predictable manner by at least the group of individuals participating in the study.

Several implications were drawn from the study. The graphic presentation of the empirical model serves as a useful discussion

tool for value clarification and the teaching of value with respect to objects because it provides categories for evaluating objects which are less subjective than the more common like/dislike value categorization, but are more subjective categorizations than evaluation based on purely formal design criteria such as balance, proportion, and unity.

From an economic perspective, the conceptual model provides a way of assessing the relationship between value and the investment of materials. It provides a system for looking at the relationships between investment of resources and degree of utility and degree of satisfaction obtained from a particular investment.

VALUING OF THE MATERIAL ENVIRONMENT:

A CONCEPTUAL MODEL OF OBJECT VALUE

By

Virginia T. ^{here}Boyd

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Family Ecology

1976

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Virginia T. Boyd
1976

ACKNOWLEDGMENTS

A dissertation reflects not only the efforts of the author but also reflects the culmination of the accumulation of many interchanges with colleagues and faculty, insights gained from intellectual and personal growth, and experiences offered within one's degree program. The academic tradition gives this one brief opportunity for acknowledging one's gratitude to these contributors and for these contributions.

The risk is great when one assembles an interdisciplinary advisory committee. Such a committee may either provide a depth of experience and breadth of perspective for the candidate to draw upon in the process of integrating their several disciplinary approaches into something new; or the candidate may end up being pulled in as many directions as there are members of the committee. My advisory committee was described by the former. The satisfaction and confidence that I have in my degree is due to the fact that they each contributed something unique of themselves which they trusted me to integrate into a new kind of professional. Their standards and expectations for me were high. But they were prepared to share their knowledge, competencies, and not the least important, their time, in order to give me every possible chance of meeting those expectations.

The two members who shared the uncertainties, doubts, and the work, of the dissertation deserve special thanks. Drs. Beatrice

Paolucci and John F. A. Taylor profoundly influenced my thinking and I hope will continue to do so. They also gave me something equally valuable. Many times they displayed their personal commitment to the best standards of scholarship by showing genuine respect for each other's ideas, and by consistently seeking out and building upon the commonalities between their divergent perspectives, rather than emphasizing their academic differences.

Dr. Robert Boger's foresight introduced me to an area of study which has subsequently become integral to my approach to design: the role of individual personality and the perceptual process itself on the design process.

Dr. Joanne Eicher helped me examine my basic philosophical assumptions and showed me the value of remaining flexible and continually receptive to new approaches.

I thank fellow graduate students Sandra Evers and Mary Andrews for many discussions and for their insights which helped clear up some of the shadows around the conceptual model and its testing.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	vii
LIST OF FIGURES	xi
LIST OF PLATES	xiii
LIST OF APPENDICES	xiv
 Chapter	
I. INTRODUCTION	1
Value Position Underlying the Study	1
Definition of Object	2
Statement of the Problem	3
Overview of the Study with Respect to Value Research	7
II. RELATED LITERATURE	9
The Concept of Value	9
The Object	12
The Experience	17
The Perceiver	19
The Concept of Theory	23
Summary	25
III. TOWARD A MODEL OF OBJECT VALUE	27
IV. AN EMPIRICAL FORMULATION OF THE CONCEPTUAL MODEL	52
Statement of the Problem for Research Implementa- tion	52
Research Hypotheses	52
Assumptions	54
Development of the Empirical Test	55
Validation of the Empirical Test	66
A Sample of Professionals	66
A Sample of Students	67
A Pretest-Posttest Research Design	69

Chapter	Page
V. PRESENTATION AND DISCUSSION OF RESULTS	73
Descriptive Characteristics of the Sample	73
Results of Discrimination 1	74
Results of Discrimination 2	76
Results of Discrimination 3	112
Results for Sample with High Aesthetic Value	
Scores	118
Summary Analyses on the Empirical Test	119
Summary of Results	131
VI. CONCLUSIONS, LIMITATIONS, AND IMPLICATIONS	133
Conclusions of the Study	133
Limitations of the Study	135
Implications for the Study	137
APPENDICES	140
BIBLIOGRAPHY	201

LIST OF TABLES

Table	Page
5.1 Distribution of Value Orientations from the Allport-Vernon-Lindzey Inventory	75
5.2 Distributions of Classifications of Four Evaluating Groups for Object: Quilt	79
5.3 Distributions of Classifications of Four Evaluating Groups for Object: Balcony	81
5.4 Distributions of Classifications of Four Evaluating Groups for Object: Painting	83
5.5 Distributions of Classifications of Four Evaluating Groups for Object: Paper Holder	86
5.6 Distributions of Classifications of Four Evaluating Groups for Object: Bridge 1	89
5.7 Distributions of Classifications of Four Evaluating Groups for Object: Bridge 1--Second Presentation . .	91
5.8 Distributions of Classifications of Four Evaluating Groups for Object: Bridge 2	93
5.9 Distributions of Classifications of Four Evaluating Groups for Object: Spoon 1	96
5.10 Distributions of Classifications of Four Evaluating Groups for Object: Spoon 1--Second Presentation . .	97
5.11 Distributions of Classifications of Four Evaluating Groups for Object: Spoon 2	100
5.12 Distributions of Classifications of Four Evaluating Groups for Object: Mailbox 1	102
5.13 Distributions of Classifications of Four Evaluating Groups for Object: Mailbox 1--Second Presentation .	103
5.14 Distributions of Classifications of Four Evaluating Groups for Object: Mailbox 2	106

Table	Page
5.15 Distributions of Classifications of Four Evaluating Groups for Object: Chair 1	109
5.16 Distributions of Classifications of Four Evaluating Groups for Object: Chair 1--Second Presentation . .	110
5.17 Distributions of Classifications of Four Evaluating Groups for Object: Chair 1--Third Presentation . .	111
5.18 Distributions of Classifications of Four Evaluating Groups for Object: Chair 2	114
5.19 Distributions of Classifications of Four Evaluating Groups for Object: Chair 3	116
5.20 Summary of Agreement with Hypotheses 1 and 2 by Object	117
5.21 Crosstabulation of Results of Discrimination 3 by Evaluation Groups	118
5.22 Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Quilt	120
5.23 Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Balcony . . .	120
5.24 Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Painting . . .	121
5.25 Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Paper Holder .	121
5.26 Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Bridge 1 . . .	122
5.27 Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Bridge 1--Second Presentation	122
5.28 Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Bridge 2 . . .	123
5.29 Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Spoon 1 . . .	123
5.30 Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Spoon 1--Second Presentation	124

Table		Page
5.31	Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Spoon 2 . . .	126
5.32	Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Mailbox 1 . .	125
5.33	Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Mailbox 1--Second Presentation	125
5.34	Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Mailbox 2 . .	126
5.35	Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Chair 1 . . .	126
5.36	Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Chair 1--Second Presentation	127
5.37	Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Chair 1--Third Presentation	127
5.38	Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Chair 2 . . .	128
5.39	Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Chair 3 . . .	128
5.40	Frequency Distribution of Total Score at Pretest and Posttest	129
D-1	Crosstabulation of Attitude Toward the Object and Test Administration: Quilt	183
D-2	Crosstabulation of Attitude Toward the Object and Test Administration: Balcony	184
D-3	Crosstabulation of Attitude Toward the Object and Test Administration: Painting	185
D-4	Crosstabulation of Attitude Toward the Object and Test Administration: Paper Holder	186
D-5	Crosstabulation of Attitude Toward the Object and Test Administration: Bridge 1	187

Table		Page
D-6	Crosstabulation of Attitude Toward the Object and Test Administration: Bridge 1--Second Presentation . . .	188
D-7	Crosstabulation of Attitude Toward the Object and Test Administration: Bridge 2	189
D-8	Crosstabulation of Attitude Toward the Object and Test Administration: Spoon 1	190
D-9	Crosstabulation of Attitude Toward the Object and Test Administration: Spoon 1--Second Presentation . . .	191
D-10	Crosstabulation of Attitude Toward the Object and Test Administration: Spoon 2	192
D-11	Crosstabulation of Attitude Toward the Object and Test Administration: Mailbox 1	193
D-12	Crosstabulation of Attitude Toward the Object and Test Administration: Mailbox 1--Second Presentation . .	194
D-13	Crosstabulation of Attitude Toward the Object and Test Administration: Mailbox 2	195
D-14	Crosstabulation of Attitude Toward the Object and Test Administration: Chair 1	196
D-15	Crosstabulation of Attitude Toward the Object and Test Administration: Chair 1--Second Presentation . . .	197
D-16	Crosstabulation of Attitude Toward the Object and Test Administration: Chair 1--Third Presentation . . .	198
D-17	Crosstabulation of Attitude Toward the Object and Test Administration: Chair 2	199
D-18	Crosstabulation of Attitude Toward the Object and Test Administration: Chair 3	200

LIST OF FIGURES

Figure	Page
3.1 Value Defined as Extrinsic and Intrinsic	33
3.2 Representation of Object as Presented by John F. A. Taylor	36
3.3 A Continuum of Four Categories of Object Value	39
3.4 The Field of Instrumental and Inherent Value	40
3.5 A Model of Object Value	41
3.6 A Quadrant B and a Pure Utilitarian Object	43
3.7 Pure Art Objects	47
4.1 Extrinsic Evaluation Continuums for Empirical Test--Version II	64
4.2 Combination of the Two Extrinsic Evaluation Continuums of the Empirical Test--Version II	65
4.3 Locus of a Painting on both the Empirical Test Continuums and as Described within the Conceptual Model	65
5.1 Summary of Classification of Object Within Value Field: Quilt	79
5.2 Summary of Classification of Object Within Value Field: Balcony	81
5.3 Summary of Classification of Object Within Value Field: Painting	83
5.4 Summary of Classification of Object Within Value Field: Paper Holder	86
5.5 Summary of Classification of Object Within Value Field: Bridge 1	89

Figure		Page
5.6	Summary of Classification of Object Within Value Field: Bridge 1--Second Presentation	91
5.7	Summary of Classification of Object Within Value Field: Bridge 2	93
5.8	Summary of Classification of Object Within Value Field: Spoon 1	96
5.9	Summary of Classification of Object Within Value Field: Spoon 1--Second Presentation	97
5.10	Summary of Classification of Object Within Value Field: Spoon 2	100
5.11	Summary of Classification of Object Within Value Field: Mailbox 1	102
5.12	Summary of Classification of Object Within Value Field: Mailbox 1--Second Presentation	103
5.13	Summary of Classification of Object Within Value Field: Mailbox 2	106
5.14	Summary of Classification of Object Within Value Field: Chair 1	109
5.15	Summary of Classification of Object Within Value Field: Chair 1--Second Presentation	110
5.16	Summary of Classification of Object Within Value Field: Chair 1--Third Presentation	111
5.17	Summary of Classification of Object Within Value Field: Chair 2	114
5.18	Summary of Classification of Object Within Value Field: Chair 3	116

LIST OF PLATES

Plate	Page
3.1 Patchwork Quilt, Feathered Star with Flying Geese Borders	28
3.2 Johan Rohde: Silver Pitcher	31
5.1 Object 1: Quilt	78
5.2 Object 2: Balcony	80
5.3 Object 3: Painting	82
5.4 Object 4: Paper Holder	85
5.5 Object 5: Bridge 1	88
5.6 Object 6: Bridge 2	92
5.7 Object 7: Spoon 1	95
5.8 Object 8: Spoon 2	99
5.9 Object 9: Mailbox 1	101
5.10 Object 10: Mailbox 2	105
5.11 Object 11: Chair 1	107
5.12 Object 12: Chair 2	113
5.13 Object 13: Chair 3	115

LIST OF APPENDICES

Appendix	Page
A. Empirical Test Version 1	141
B. Empirical Test Version 2	158
C. Allport-Vernon-Lindzey Values Inventory	169
D. Test Administration	182

CHAPTER I

INTRODUCTION

Value Position Underlying the Study

This study was guided by the proposition that the earth of 1976 is no longer a world of infinite possibility among unlimited resources, but is in essence a spaceship with finite dimensions requiring maximum utility from limited means. It was guided by the belief that although material resources are limited, the individual's human potential to develop personally and to better the environment remains a domain of infinite possibility. Only the utilization of material resources must be viewed with an increasingly economical perspective.

The following value position was taken. With declining raw materials and an increasingly scarce supply of energy with which to process them, consumption must be reduced, the things produced be made to last longer and to give greater satisfaction during their use. However, implementing these will be exceedingly difficult. How can standards be set in these areas? What constitutes better quality? Is quality defined in a functional sense or in a sense of satisfaction achieved? Is there a consensus among people on acceptable standards? The questions are qualitative in nature and will require a qualitative evaluation of objects in order to answer them,

an evaluation which is not only highly abstract, but which touches deeply held attitudes and beliefs which are difficult to deal with without evoking strong emotional responses. Answers to the questions will require determining how objects are valued.

Research was also guided by the belief that the material forms which an individual creates out of natural resources and with which one surrounds oneself are a direct external expression of the individual's inner self. A society's forms are therefore a gathering together, an accumulation of the expressions of each of its individuals. A given form achieves relevance and meaning within a society only as it serves an active function within the lives of the individuals of that society. "For the only justification of any order, of any form, which men produce is, that men discover in it possibilities which they could not have without it."¹

Definition of Object

Only a particular domain of the total material environment, the domain of objects man intentionally creates from the wide range of available materials occurring naturally within his environment, was investigated. The object was defined broadly to include two kinds of intentionally material objects; those things created in order to extend one's abilities--those things designed to work, and those things designed to express oneself--those objects whose value accrues with their ability to communicate in a dimension and medium

¹John F. A. Taylor, "The American Artist: An Essay on the Uses of Freedom," The Centennial Review 7 (Fall 1963): 419.

beyond the limits of language. By defining the object with this breadth an attempt was made to recognize that all objects are naturally interrelated and in a sense are interdependent each having an individual yet integrated function in daily existence. However, contemporary life has increasingly moved in the opposite direction, toward compartmentalizing objects and dealing with the divisions independently and often competitively. The value position taken suggested that not only is it inappropriate to consider and consume the different kinds of objects independently, but that with increasingly more limited resources society can no longer afford the resulting expenditure of resources which such fragmentation demands.

Statement of the Problem

A conceptual framework for understanding the dimensions on which value is attributed to objects was developed. It was based on the proposition that value with respect to objects is not divided into only two categories of value--artistic objects and useful objects--as the area of object value is often subdivided. Rather, it was suggested that there are four classes of value with respect to objects and among the four there is one class of object value which is particularly important with the general need to reduce the number of objects while maintaining a high degree of satisfaction from those remaining. This class was termed Economy of Value objects because of their ability to be highly valued on two value dimensions simultaneously. Economy of Value objects are those objects designed not only to perform a specific task, but which are

also intended to function in a manner beyond their ability to work, as objects to be appreciated, to provide pleasure through their presence alone. Architecture has been recognized as having this dual capacity as have objects in the graphic and decorative arts. The architect creates a house which not only must work well as shelter and as a "machine for living" but it must often also visually express characteristics of its occupants as well. The inhabitants derive a certain pleasure from the visual form of their immediate material environment itself, in addition to its utilitarian function. Not as commonly included in the category of Economy of Value objects have been things such as clothing, urban environments as entities of organized space, everyday household items such as brooms, kitchen pots and pans, newspaper advertising, and the various objects for transportation. If a society is required to husband resources it is to this group of objects that it may most profitably turn, for their dual-nature permits them to satisfy not only mundane utilitarian needs, but also the need for something visually appealing and satisfying as well. Increasing the prevalence of dual-natured Economy of Value objects would result in an equivalent amount of satisfaction from less material investment, and would hopefully begin a slowing down of the demand for and consumption of highly specialized objects, each designed to satisfy only a single need or desire rather than several simultaneously.

It has been exceedingly difficult to study this group of objects as a whole because of the high degree of specialization

encouraged, often through necessity, by both academic disciplines and the professions. The "pie" of object value, the total range of forms, things, and objects is broken into pieces which become the intellectual territory of the several groups. Engineers design and construct and evaluate the useful objects needed by society to carry out its tasks--its bridges, highways, dams, communication systems--and the principal criterion for valuation is how efficiently the object does the job. Artists create, appreciate, and evaluate those objects far removed from the world of work, those things whose value accrues solely through their ability to give satisfaction, to be appreciated for the very fact that they exist.

Some fields such as architecture and graphic art integrate functional and aesthetic concerns because their piece of the object pie contains objects which require not only that they perform a utilitarian function, but that the form that function takes must have an appreciative dimension in addition. They thus are involved with dual-natured Economy of Value objects. The form the architect creates is limited in some measure by the functions the house must serve; it must have bathrooms, a given amount of window space per interior footage, systems for energy and water. The graphic artist is restricted in the visual form his product will take by the requirements of the message, the spacing of letters and words, readability at various distances and positions, the limitations of available printing techniques, and usually the cost ceilings of the client.

Although the previous two professions are both intimately involved with the illusive ambidextrous Economy of Value object, they

are each only involved with their own type of object within that larger class and when asked to cross boundaries to discuss another type of dual-natured object, they find it difficult and are reluctant to do so. A specialist in clothing may consider herself worlds removed from the furniture designer, perhaps feeling greater affinity with the artist even though clothing and furniture have a great deal in common. Their commonality results from the fact that they are the two Economy of Value objects which physically touch the body most intimately and which are concerned with anthropomorphic and anthropometric considerations; considerations which are of little concern to the artist.

Because of the preceding situation among professionals and academics in regard to objects, this study suggested that there was a current need to consider all objects as a group and to develop through an analysis of value a conceptual approach which could accommodate all kinds of objects within a single conceptual framework. It only began such a large undertaking by developing a conceptual framework for viewing the wide range of objects from a single perspective, proposing a model, and attempting to determine the validity of that model for dealing with the range of objects in the environment.

The source from which the conceptual framework was developed was the larger field of value theory. Primary impetus for the framework came from the work of value theorist Clarence I. Lewis who tentatively suggested a substructure within object value and who also suggested a need for evaluating such a framework empirically.

Overview of the Study with Respect
to Value Research

Because the conceptual model developed in a sense suggests a new structure for a field of inquiry, if not a new field of inquiry altogether (the study of Economy of Value objects) the dissertation must be considered exploratory in nature rather than conclusive, perhaps having raised more questions than it answered.

The experimental researcher generally begins with previously identified variables which are manipulated to determine their interrelationships which are then used to predict future behavior. The present undertaking began even further back. It first determined what was actually there to be studied, what names could be given to it, what characteristics did it have, and how could it be meaningfully organized. Only when this basic knowledge had been assembled can variables now be developed, concepts agreed upon, and true theory building begun in the area of object value--the discovery of the interrelationships among concepts which explain and predict behavior with respect to objects. The present product is a conceptual framework which will hopefully provide at least a crude instrument for facilitating increased understanding of the material environment in order to permit its more efficient and satisfying use.

It must also be recognized that the content under investigation, the interaction between the material reality of an object and the perception of it by a human observer, involves a complex and highly individualized integration process. Integrally involved are feelings, sensations, judgments, reasoning, motivation,

characteristics of personality, and past experiences, all of which are unique to each individual and all of which are brought together at a point in time when the individual is confronted with a tangible "fact"--a material object. With such a range of factors involved in the interaction with a single object, it is impossible and undesirable to expect exactly the same experience resulting from interaction with the same object across a number of individuals. However, there appear to be several broad dimensions used by individuals to assign value to objects, dimensions which are perceived with some consistency across individuals and which are integral to the composite experience which results for each individual. The conceptual framework to be discussed will look in detail at characteristics common to all objects which determine the value assigned to that object. This information, in turn, can hopefully be used to obtain satisfaction from objects more effectively within a social context of increasing demand for a decreasing quantity of resources. ✓

✓

CHAPTER II

RELATED LITERATURE

The literature and research which influenced development of the conceptual framework will be organized according to the following broad topics; the concept of value, the object, the experience, the perceiver, and the role of theory.

The Concept of Value

The concept of value has been studied from many perspectives over a long period of time. For the present study, two approaches were instrumental: a perspective developed within philosophy, and a perspective developed within the social sciences.

Philosopher Ralph Barton Perry¹ approached value through an understanding of interest; to be for or against something, to be inclined toward or react against, "this state, act, attitude, or disposition of favor or disfavor, to which we propose to give the name of 'interest.'" His conception of the term value implied interest in the sense of desire as opposed to interest in the sense of attention. Perry continues, "any object, whatever it be, acquires value when any interest, whatever it be, is taken in it;

¹Ralph Barton Perry, General Theory of Value (Cambridge: Harvard University Press, 1926), pp. 115-116.

The view may otherwise be formulated in the equation: X is valuable = interest is taken in X" And with respect to the valuing of objects "It follows that any variation of interest or of its object will determine a variety of value." As the object of the value changes, or its characteristics change, the value itself assumes a different character.

The interdisciplinary nature of the study required solid footing in two disciplines with respect to the definition of value. Perry's classic definition of value from philosophy was thus paralleled with Clyde M. Kluckhohn's classic definition from the social sciences: A value is "a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available means and ends of action."²

Both definitions used "desire" as the integral component of valuing. Kluckhohn integrated the concept of desire directly and Perry viewed "desire" as integral to "interest." Both definitions were interpreted to mean selective behavior or preference among alternatives. For the research the two definitions were considered compatible and acceptable as the foundation on which to build a conceptual framework of a particular kind of value--value with respect to objects, or object value.

²Clyde M. Kluckhohn, "Values and Value Orientations in the Theory of Action," in Toward a General Theory of Action, eds: Talcott Parsons and E. A. Shils (Cambridge: Harvard University Press, 1951), p. 395.

Morris³ viewed the "value situation" as the occasion where preferential behavior occurs. He identified three dimensions of the value situation: value as operative, value conceived, and value objectified. Value considered from an operative sense "signifies the preferential behavior of a given individual in a variety of situations."⁴ It is observable behavior. The individual who consistently selects chocolate ice cream over all others operationally values chocolate ice cream. Conceived value is something "signified and liked or disliked as signified. The object or situation need not be present and need not even exist."⁵ Many Americans hold a conceived value with respect to land ownership because it is considered to be an ideal state whether or not they are able to achieve it or to operationalize the value. Morris' third category which was of concern to the study defined the preference situation value with respect to an object, "some objects are such that they support positive preferential behavior to them by some organisms. Others are such that contact with them leads to negative preferential behavior by some organisms." Object value was defined as the properties of an object considered in relation to its ability to reinforce preferential behavior directed toward it by some organisms."⁶

³Charles Morris, Signification and Significance (Cambridge: MIT, 1964), p. 18.

⁴Ibid., p. 19.

⁵Ibid.

⁶Ibid., p. 20.

The Object

Clarence I. Lewis suggested that object value could be subdivided into four categories based on differing value characteristics held by objects: objects having instrumental, instrumental and inherent, inherent, or neutral value. The conceptual framework developed began with this continuum and will be discussed in detail in Chapter III.

Most writing on object value was limited to the analysis of predominantly fine art objects including painting, sculpture, and architecture. It was thus essentially analysis of strictly aesthetic object value. As a result, it did not provide the breadth of approach required for the present study which focused not on fine art objects exclusively, but on developing a way of discussing within the same theoretical model, those and all other objects with the environment.

However the two aestheticians discussed below alluded to a need to broaden the base of objects considered appropriate for investigation beyond only fine art objects. They provided a precedent for considering as aesthetic objects things other than paintings and sculpture, a position which was essential to this research.

Formalist aesthetic theory approached the object through compositional principles such as line, color, proportion, and harmony. Clive Bell⁷ suggested that there are certain combinations of these elements and principles which, when presented to an observer provoke

⁷Clive Bell, "Significant Form," in A Modern Book of Esthetics, ed: Melvin Rader (New York: Holt, Rinehart & Winston), pp. 228-237.

a particular kind of emotion: the aesthetic emotion. He suggested that only those objects having this combination, which he called "significant form" are capable of producing the desired aesthetic emotion. Although Bell discussed significant form primarily as it occurred in painting and sculpture, his original definition of an object was broader, an intention which was important to this study, "there is a particular kind of emotion provoked by every kind of visual art, by pictures, sculptures, buildings, pots, carvings, textiles, etc., is not disputed, I think, by anyone capable of feeling it."⁸ It would not be a violation of Bell's intent to insert for the word "art" in "every kind of visual art," the word "object," "every kind of visual object." "Significant form" would then approximate one of the two dimensions of object value proposed in the conceptual model which will be discussed in detail in the following chapter.

The writings of Bell were also important to this study because of his position with regard to the perceiver (this discussion will be recognized as belonging under the Literature Review section The Perceiver but because it is brief it will be included here in order to consider Bell's work as a whole). Bell stated that to experience fully the aesthetic emotion the perceiver must bring with him:

a sense of form and color and a knowledge of three-dimensional space. That bit of knowledge . . . is essential to the appreciation of many great works since many of the most moving forms ever created are in three dimensions.⁹

⁸Ibid., p. 228

⁹Ibid., p. 232

The statement implies that in order to evaluate an object most effectively, one needs a degree of critical ability acquired through visual training. This premise provided the rationale for one of the measures of the validity for the empirical test which will be discussed in Chapter IV. Specifically, it provided a conceptual rationale for the inclusion of a panel of design professionals within the research design.

Aesthetician Horatio Greenough extended Bell's concept of the appropriateness of giving critical attention to objects in addition to those of the fine arts. Greenough matured intellectually within the eclectic revival art milieu of the mid-1880's which sanctioned only those contemporary forms which followed as closely as possible historical antecedents. Within that intellectual climate Greenough thus spoke as a revolutionary when he redefined Academy art to include within the definition of art an object such as a clipper ship, describing it as a work of art saying "There is something I should not be ashamed to show Phidias."¹⁰ Greenough's position could be considered the philosophical foundation on which the study rests. He argued that exactly the same serious, informed, critical yet appreciative approach should be applied not only to the objects designated "art" but also to the common ordinary objects essential to everyday life. It is as appropriate to talk of Bell's "significant form" and Greenough's "organic significance," or the subordination of all parts

¹⁰Horatio Greenough, Form and Function (Berkeley: University of California Press, 1962), p. 226.

to the whole and of the whole to the overriding function of the object, in the presence of Doric columns as it is in the presence of kitchen blenders.

Although the work of aesthetic theoreticians could make only limited contribution to this study because of their orientation toward only the fine arts, theoretician Dewitt H. Parker¹¹ did provide a conceptual tool for the analysis of objects beyond those of the fine arts. Like Bell's and Greenough's principles, Parker's concepts of organic unity, principle of the theme and thematic variation, balance, and the principle of hierarchy are as relevant in the artist's studio as in the industrial design laboratory.

The field of experimental aesthetics carried the theoretical analyses of philosophical aesthetics regarding object value into empirical formulations in order to determine the degree to which the theories developed could be demonstrated to describe aspects of reality. For example, Irvin L. Child¹² worked on the problem of consistency of aesthetic judgment of object value across groups of individuals. He presented pairs of paintings similar in subject or style but differing in their aesthetic value according to the judgment of a panel of experts. Individuals were asked to identify the selection of the experts within each pair. Child did not accept the view that agreement with the experts' selections was due primarily to

¹¹DeWitt H. Parker, "The Problem of Esthetic Form," in A Modern Book of Esthetics, ed: Melvin Rader (New York: Holt, Rinehart and Winston, 1935), pp. 250-251.

¹²Irwin L. Child, "Enjoying Art--What Does It Mean?" PHP (June 1975): 70-75.

indoctrinated standards of taste, but rather that broad formal, in the sense of compositional, aesthetic characteristics exist which most individuals with an aesthetic inclination recognize and respond to. Child based this hypothesis on what he considered to be a parallel fact, that certain moral values exist cross-culturally, a cross cultural characteristic which he felt was also characteristic of aesthetic sensitivity. His results showed that individuals with developed aesthetic inclination within their own culture tended to agree with the evaluations of the sample of Western experts more often than individuals native to Western culture without formal training. Japanese potters selected the choices of Western experts more closely than American high school students agreed with the experts. Pakistani fine art students identified the Western art experts' selections more consistently than non-fine art Pakistani students.

Child also looked at the relationship between personality characteristics and aesthetic sensitivity. In particular, he looked at three aspects of cognitive style: tolerance of complexity, independence of judgment, and regression in the service of the ego.

The design of the empirical model used in this research was influenced by this work though with a significant modification. Child's pair comparison method was used but the forced-choice aspect was eliminated.

Like most aesthetic judgment research, Child's work was restricted to the consideration of only fine art objects, and painting in particular. The present study was influenced by his

methodology but considered a much broader range of objects within its investigation.

The Experience

Perhaps the most familiar classification of value is by an intrinsic and extrinsic distinction. For example, when education is acquired principally for the pleasure of increased understanding and personal satisfaction, it is valued by the individual intrinsically --for its own sake. An object, event, or experience considered good simply for its own sake, by its existence alone is said to be valued intrinsically. When education is acquired as a tool to effect social change, it is valued primarily not for itself but for the sake of something beyond itself, in this case perhaps as a tool to achieve social justice. When the object, event, or experience is valued for the sake of an end distinct from itself, as the means to obtaining a further goal, its value is said to be instrumental or extrinsic. These distinctions were made by Ralph B. Perry¹³ and because they were integral to the conceptual framework developed, they will be discussed in detail in Chapter III. However, because the concept of intrinsic value is necessary to the presentation of the following writer, the distinction was developed briefly at this point.

With reference to a work of art, the peculiar experience it evokes, the sense of satisfaction and pleasure it elicits, identifies it as intrinsically valuable according to George Santayana. The sense of beauty, the perception of pleasure objectified as the

¹³Ralph Barton Perry, General Theory of Value (Cambridge: Harvard University Press, 1926), pp. 131-134.

quality of a thing, the aesthetic experience itself, can be perceived and described "Beauty is a value, that is, it's not a perception of a matter of fact or of a relation: it is an emotion, an affection of our volitional and appreciative nature"¹⁴ and it "springs from the immediate and inexplicable reaction of vital impulse, and from the irrational part of our nature."¹⁵

The study was concerned strictly with objects as they were considered to be valued extrinsically which was outside of Santayana's concern with the intrinsically valued aesthetic experience which the objects create. For Santayana beauty is the ultimate good, the intrinsic "perfection of life."¹⁶ His approach to an aesthetic object is through conceived, or ideal value. The approach to the object of the present study was through instrumental value. However, the inclusion of Santayana's approach within the review was necessary because the reader must not lose sight of the fact that the conceptual model developed in this study is only an instrument for enabling an observer to identify what objects occasion or have the potential of occasioning the ideally pleasant emotion as it is conceived by Santayana. The purpose of the framework was to identify which objects are capable of acting as springboards to the experiencing of beauty as Santayana so compellingly expresses it, and which objects do not have that capability. The framework attempted to

¹⁴George Santayana, The Sense of Beauty (New York: Charles Scribner's Sons, 1896; Dover Publications, 1955), p. 31

¹⁵Ibid., p. 14.

¹⁶Ibid., p. 149.

identify what other objects in addition to the relatively few universally reliable great works of art have the ability to produce at least in small measure the intoxication, the pure pleasure of perception intrinsically valuable to all sensing human beings. The focus of the framework on the extrinsic value of objects assumed that the need to do so was to provide increased access to intrinsic experience, to Santayana's sense of beauty through a more informed understanding of extrinsic value as it is found in objects.

The Perceiver

The field of experimental aesthetics mentioned previously in connection with Irvin Child's work has been most commonly interested, not in analyzing the object as was Child, but in identifying characteristics of the aesthetic observer. Issues such as the following have been central to experimental aesthetics analysis: the distinction between aesthetically inclined observers and non-aesthetically inclined observers, characteristics of personality influential to the perceptual process, the relationship between an observer's aesthetic abilities and other nonaesthetic aspects of personality, and the effect of aesthetic training and experience on aesthetic interest. The field of art education in particular, has focused on these issues. The present study was not concerned with characteristics of the perceiver of the object but with the object itself. However, to assess the validity of the conceptual model, a measure of each individual's personal value orientations was used in the research design. Although these areas are outside of the issues

of concern to this study, mention of it is made to identify where most current aesthetic research is being done. Two studies are presented as characteristic of this approach.

Robert Seelhorst¹⁷ looked at the relationship between human values and three aesthetic orientations: aesthetic performance, aesthetic sensitivity and sensitivity to problems. His sample of 109 college students in art education programs was selected to include a range of levels of art experience from undergraduate through graduate status. Five basic values were identified by means of factor analysis of Charles Morris' "Ways to Live" instrument designed to assess basic value orientations. A score for aesthetic performance was obtained from a panel of experts' evaluations of work done by each subject in response to a verbal motivation. A score of aesthetic sensitivity was obtained by using a subset of questions from the Beittel Instrument of Aesthetic Sensitivity. Correlations were run on the six possible combinations of the three variables on which the following conclusions were based. Value orientations identified as "enjoyment and progress in action" and "self indulgence" were negatively significantly correlated with aesthetic performance at .05 level of significance. A third value orientation, "withdrawal and self-sufficiency" was positively correlated with aesthetic performance at the .01 level of significance which the researcher interpreted to mean that individuals with internalized

¹⁷Robert C. Seelhorst, "The Relationship Between Human Values, Aesthetic Performance, Aesthetic Sensitivity, and Sensitivity to Problems" (Ph.D. dissertation, Pennsylvania State University, 1960).

values perform better aesthetically than individuals whose general value orientation is more outgoing and socially oriented. No correlations reached significance for variables "aesthetic sensitivity" and "sensitivity to problems" for the sample as a whole. However, among the subsample of those with the highest level of experience, i.e., graduate students in art education, there was a significant correlation between aesthetic performance and sensitivity to problems.

Art judgment studies have a long tradition and several instruments have been developed. One instrument and a study which used it is presented as illustrative of the approach. In an early study by Calahan¹⁸ using the Meirer-Seashore Art Judgment instrument, a sample of art and nonart students, and a test-retest design, Calahan obtained the following results. Aesthetic judgment was consistent over a period of one year with art students more consistent than nonart students. High aesthetic judgment scores were more consistent from test to retest than low scores. Aesthetic judgment was positively related to knowledge of compositional principles. The last finding provided a method for assessing the validity of the present empirical test through use of a pretest-posttest research design with the intervening treatment a course in design principles.

Home management research has focused on objects within the near environment as one of a family's several resources which can be organized to meet needs and wants. Research in this area has

¹⁸Ellen J. Calahan, "The Consistency of Aesthetic Judgment," Psychological Monographs 51 (1931): 75-87.

emphasized the operationalizing of values, and the role of the individual's value system within the decisionmaking process. A characteristic study within this area of investigation was that of Dorothy Ramsland¹⁹ which looked at consistency between husbands' and wives' value orientations and the value they assigned to items of household furnishings. The relative strengths of basic value orientations, identified with the Allport-Vernon-Lindzey and the Expressed Response instruments, were identified for both husbands and wives of fifty student couples. Ramsland found little consistency between the value orientations of husband and wife generally, moreover, an individual's dominant value orientation identified by the Allport-Vernon-Lindzey instrument was not similarly reflected in the Expressed Response instrument.

The only similarity between the present study and the Ramsland study is that individuals were asked in both to evaluate objects according to a particular set of value characteristics. Ramsland asked subjects to identify which one of the six Allport-Vernon-Lindzey value categories matched most closely the value they held for particular objects in their home. The present study asked individuals to assign value to objects according to two value dimensions--inherent and instrumental value. The present study included a wider range of objects in its conceptualization than did the Ramsland study.

Literature in the area of management has stressed the need to look more closely at the role the material near environment plays

¹⁹Dorothy Ramsland, "Values Underlying Family Utilization of Home Furnishings" (Ph.D. dissertation, Michigan State University, 1967).

in daily life. Dorothy Lee stated, "Comparatively little attention has been paid by academic researchers to material resources. . . . they are, however, parts of the whole organization to which human beings react and with which they are involved."²⁰ With the material resources available to a particular social group--the family, Beatrice Paolucci stated, "the house and its furnishings are but resources to be managed for the good of the family. Recognizing this obligates the home manager to so arrange the materials and space within the home that special values are mediated."²¹ To achieve this end, a great deal more needs to be known about the kinds of value objects have for individuals. This research addressed itself to this task by identifying two dimensions commonly used to assign value to objects and suggested a possible relationship between the two. Such knowledge has direct application, for as Edward Hall stated "by broadening his conception of the forces that make and control his life, the average person can never again be caught in the grip of patterned behavior of which he has no awareness."²²

A Concept of Theory

Morris Weitz made the following statement regarding the role of theory with respect to the fine arts which was equally appropriate to the consideration of all objects:

²⁰Dorothy Lee, "The Individual in a Changing Society," Journal of Home Economics 52:2 (February 1960): 73-82.

²¹Beatrice Paolucci, "Home Management: Yesterday--Today," Penney's Home Fashions and Fabrics 8 (1962): 3.

²²Edward Hall, The Silent Language (Garden City, New York: Doubleday, 1959), p. 212.

these theories are supposed to be factual reports on art. If they are, may we not ask, are they empirical and open to verification or falsification? For example, what would confirm or disconfirm the theory that art is significant form or embodiment of emotion or creative synthesis of images? There does not even seem to be a hint of the kind of evidence which might be forthcoming to test these theories; and indeed one wonders if they are perhaps honorific definitions of "art," that is, proposed redefinitions in terms of some chosen conditions for applying the concept of art, and not true or false reports on the essential properties of art at all.²³

His response to his own question could be considered a justification for the present undertaking,

But what makes them--these honorific definitions--so supremely valuable is not their disguised linguistic recommendations; rather it is the debates over the reasons for changing the criteria of the concept of art which are built into the definitions. In each of the great theories of art, whether correctly understood as honorific definitions or incorrectly accepted as real definitions, what is of the utmost importance are the reasons preferred in the argument for the respective theory, that is, the reasons given for the chosen or preferred criterion of excellence and evaluation. It is this perennial debate over these criterion of evaluation which makes the history of aesthetic theory the important study it is.²⁴

The argument was even more pertinent to the study of objects in general, an area of investigation which has not had and which badly needs, the long tradition of scholarly debate which identified and clarified issues pertinent to the building of theories of art. At the present time a single theory of art has not been agreed upon, but the issues central to one have been carefully laid out and seriously discussed. The same process must occur in order to develop a theory which includes all objects. Weitz continued, "To understand

²³Morris Weitz, "The Role of Theory in Aesthetics," in Problems in Aesthetics, ed: Morris Weitz, 2nd ed. (New York: MacMillan, 1970), p. 173.

²⁴*Ibid.*, p. 179

the role of aesthetic theory (read: the theory of objects) is not to conceive it as definition, logically doomed to failure, but to read it as summaries of seriously made recommendations to attend in certain ways to features of art (read: objects)."²⁵ The primary value of the conceptual model to be presented is perhaps not as much for the concepts it develops, but as it brings the analysis of object value into greater prominence thus submitting the area of investigation to the clarifying effects which are often the result of rigorous debate.

Summary

Literature and research suggested the following points relevant to the present study:

1. Aesthetic theory was limited in the degree to which it is concerned with analysis of only a small segment of the total objects in the environment, of only art objects. However, it provided several theories on which to build a conceptual model descriptive of a wider range of objects. And two theorists suggested the appropriateness of expanding the range of objects to be considered beyond merely art objects alone.
2. Empirical aesthetics generally places its focus on analysis of the observer rather than on analysis of the object. However, its methods and experimental designs had relevance for the present study.

²⁵Ibid., p. 180.

3. Research in family management and value with respect to the object has focused on the material object as it functions as a resource to be considered in the decisionmaking process. It has looked at object value from an operational rather than theoretical perspective.

4. Literature in art theory suggests that the value of the discussion which is generated from critical analysis of new theories may be as great as the value of the ideas proposed. The present research will hopefully serve as a catalyst to begin serious discussion of object value.

CHAPTER III

TOWARD A MODEL OF OBJECT VALUE

This chapter presents a conceptual model for the classification of object value. The following chapters will present the empirical test which was constructed to assess the validity of the conceptual model, and the results of the research design which applied the empirical test.

Any object can be evaluated by its observer from several distinct perspectives. Each added dimension of evaluation gives a more complete understanding of the object as a whole through providing additional information peculiar to that analytical approach. Take, as example, the quilt illustrated in Plate 3.1. It can be evaluated in its role as a communicative, nonverbal symbol within the colonial American cultural milieu. Nonverbal communication occurs through the articles of material culture in the form of information or a message which is transferred from a source, in this case the quilter, to the receiver, in this case the observer or user of the quilt. Added understanding of the quilt as an object can therefore be obtained by researching the provenance of the individual motifs used in the overall pattern, the traditional "Feathered Star" and "Flying Geese" patterns. These symbolic allusions were commonly understood by the contemporary community and the quilt, therefore, functioned as a vehicle for transmitting this meaning among members of the social group.

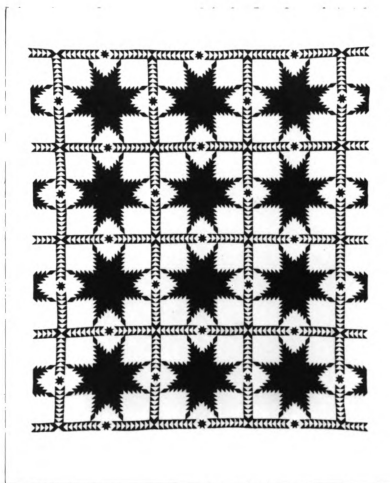


PLATE 3.1.--Patchwork Quilt, Feathered Star with
Flying Geese Borders

The purely formal design characteristics of the quilt can add a dimension of understanding to the quilt as a whole. Analysis would include such things as the use of particular combinations of pattern elements, the handling of color, the relationship between positive and negative spaces, the division into dominant and subordinate areas of pattern, the organization of the whole with respect to the concepts of balance, proportion, and unity.

The quilt can be evaluated as a fact which, when perceived by an observer, elicits a particular kind of response. That response may serve as an impetus to use the quilt in some manner, or it may be a purely enjoyable feeling in response to the visual image created by the quilt, or the response may be a combination of the previous two possibilities.

Any one of the three kinds of evaluation could be studied with respect to most design objects. However, only the last form of evaluation will be investigated in the present discussion. The quilt, or any object, will be viewed as an aspect of a total activity, of a particular kind of integrative process occurring when an individual interacts with a material object. The activity or experience will be viewed as a process of valuing and an attempt will be made to identify two characteristics of objects which the individual uses to determine whether a particular object has positive value in general, and how that value might be described or classified. Object value in this discussion will be viewed as the complex transaction in which an artifact deliberately formed for a predetermined purpose

is contemplated and judged by an interpreter.¹ The definition of the object remains as stated in Chapter I: an object is defined as any intentionally created material artifact. The category includes those things termed art objects, those useful things termed tools and instruments, and those useless things termed junk and refuse. The subscriber to an object's value will be the individual attending to or contemplating the object.

Classic value theory as outlined by Ralph B. Perry structures value with respect to objects in the following manner. Consider Johann Rohde's pitcher (Plate 3.2). If we attend to the pitcher and experience a sense of enjoyment and satisfaction occasioned by the smoothness and reflectiveness of the finish, the graceful character of the curving line as it moves from lip across the opening, along the handle, eventually merging with the body of the form, the sense of elegance it imparts; the sensation we feel is a purely aesthetic experience and has positive value for us. The experience, that sense of satisfaction obtained in the presence of the object, is

¹This definition of the object is based upon but enlarges in its scope the following definition of art developed by John F. A. Taylor [John F. A. Taylor, Series of Lectures: "Philosophy of Aesthetics." Michigan State University (September-December, 1974)]:
The process of art is a complex transaction in which an artifact deliberately formed for the purpose of expression is contemplated by an interpreter who finds value in it.

The present author believes that there is a need to approach not only art objects but many other categories of objects with the discriminating appreciative approach often reserved only for traditionally defined art objects. (See discussion in Chapter II, The Object.)



6-17 *Johan Rohde's silver pitcher*

PLATE 3.2.--Johan Rohde: Silver Pitcher

considered good simply because it occurs. The object is appreciated for purely visual qualities which occasion the experience that we find particularly pleasant and worthwhile. We regard the value of the experience itself to be of intrinsic value. In value theory terminology, something regarded as good in its own right or good for its own sake, is said to have intrinsic value. Its goodness is not conditional upon any other state, it is good just by virtue of the fact that it exists. If a second pitcher is presented to the same observer, one of perhaps a more ornamental style yet visually appealing in its own right, both pitchers, though presenting different visual stimuli, occasion the same kind of experience--a positively valued experience. The resulting experience in both cases is of similar value--of intrinsic value. Objects or events occasioning this experience may, therefore, be quite different in appearance but the intrinsically valued sensation they stimulate in the observer is of the same kind. Similar intrinsic satisfaction may be occasioned by an unusually patterned fabric, a painting by Rembrandt, and a sketch on a breakfast food box. However, the intensity and quality of the experience may be quite different for different individuals in each of the three cases.

The experience is valued intrinsically as good in itself. The pitcher which occasioned the experience is valued conditional on its ability to provide that intrinsic good. Its value is considered extrinsic as it serves as the means by which the creation of an intrinsic good, the experience, is realized. An object valued

extrinsically is considered good, not for its own sake, but for the sake of something distinct from itself. The relationship can be expressed by the following figure:

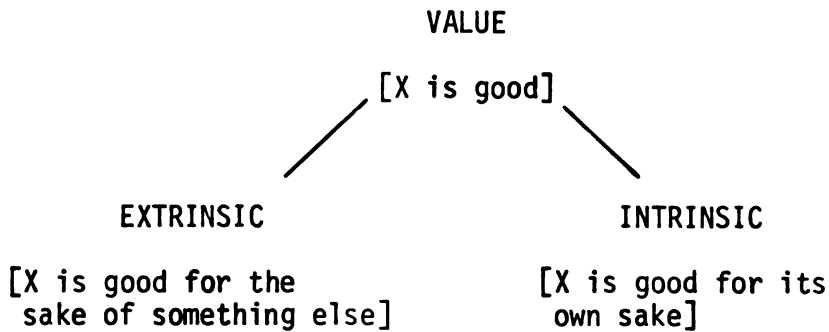


FIGURE 3.1.--Value Defined as Extrinsic and Intrinsic.

However, when this dichotomized approach to value is applied to a number of diverse objects, it does not seem to be sufficiently discriminating to describe the full range of value situations with respect to the wide range of existing objects. Continuing with the pitcher, intuitively one feels that there is a difference in the value attributed to the tools used to produce the pitcher and the value attributed to the pitcher as a product; and that both--the tools and pitcher--are distinct from the value of the experience gained by contemplation of the pitcher. The forge required to melt the silver, the molds required to form it, and the burnishers necessary to smooth its surface, are all objects and must all have some kind of extrinsic value, according to the definition. However, their extrinsic value seems to be acquired for different reasons than the extrinsic value of the pitcher. The difference rests in the fact

that the pitcher provides intrinsic experience directly, the observer values the pitcher for its visual effect, for the pure satisfaction which results from interacting with it. The tools, on the other hand, are not generally considered as directly gratifying in themselves. The observer does not, upon contemplating a burnisher or forge, feel a sense of pure satisfaction from their presence alone, rather he regards them primarily for their utility, for their ability to produce other things. The burnisher and forge are valued indirectly as they efficiently work in order to make the pitcher or other objects which provide intrinsic experience directly.

Both kinds of objects--pitchers, and forges and burnishers--are valued extrinsically in that they are valued for something distinct from themselves. But in the case of the pitcher, the object is valued as an instrument for creating an intrinsic aesthetic experience directly. In the case of the burnisher or hammer, the object is valued as it creates intrinsic value indirectly. It is an instrument used to make the pitcher and its value accrues from its ability as a tool, not as an end in itself. The pitcher, on the other hand, is valued for its own sake, for the satisfaction which it occasions. For the purposes of discussion, any object which is valued extrinsically as the immediate occasion for satisfaction, i.e., of an intrinsic value, will be described as having extrinsic inherent value, according to the phrasing of Clarence I. Lewis.² Anything valued extrinsically for the sake of an intrinsic good,

²Clarence I. Lewis, An Analysis of Knowledge and Valuation (LaSalle, Ill.: Open Court Publishing Co., 1946), p. 432.

in this case the pitcher, is said to have inherent extrinsic value. In contrast, anything valued or considered good for the sake of another extrinsically valued good, in this case the forge and burnisher, is said to have extrinsic instrumental value. This distinction is made graphically by John F. A. Taylor³ in Figure 3.2.

If the total range of objects is considered in light of Figure 3.2, generally speaking, objects valued inherently are commonly thought of as art objects, objects which according to Lewis provide direct gratification and gratification of a higher order. And objects valued instrumentally are those things generally described as utilitarian, whose value is derived from their ability to produce other goods but which are not generally considered to be directly satisfying in themselves.

However, an object may be valued simultaneously both inherently and instrumentally. The burnisher and forge have instrumental value. However, the pitcher has a more complex nature. It is valued instrumentally if one attends to its ability to hold and to dispense a liquid. In this light, it is regarded as a tool, a facilitator created to produce another extrinsic good, perhaps in this case, drinking. And it also serves in the creation of an intrinsic experience as a result of its particularly pleasing visual formal qualities. The pitcher appears to carry both kinds of extrinsic value, both instrumental and inherent. It functions as an

³Clarence I. Lewis, op. cit., p. 435.

↑
Assumption

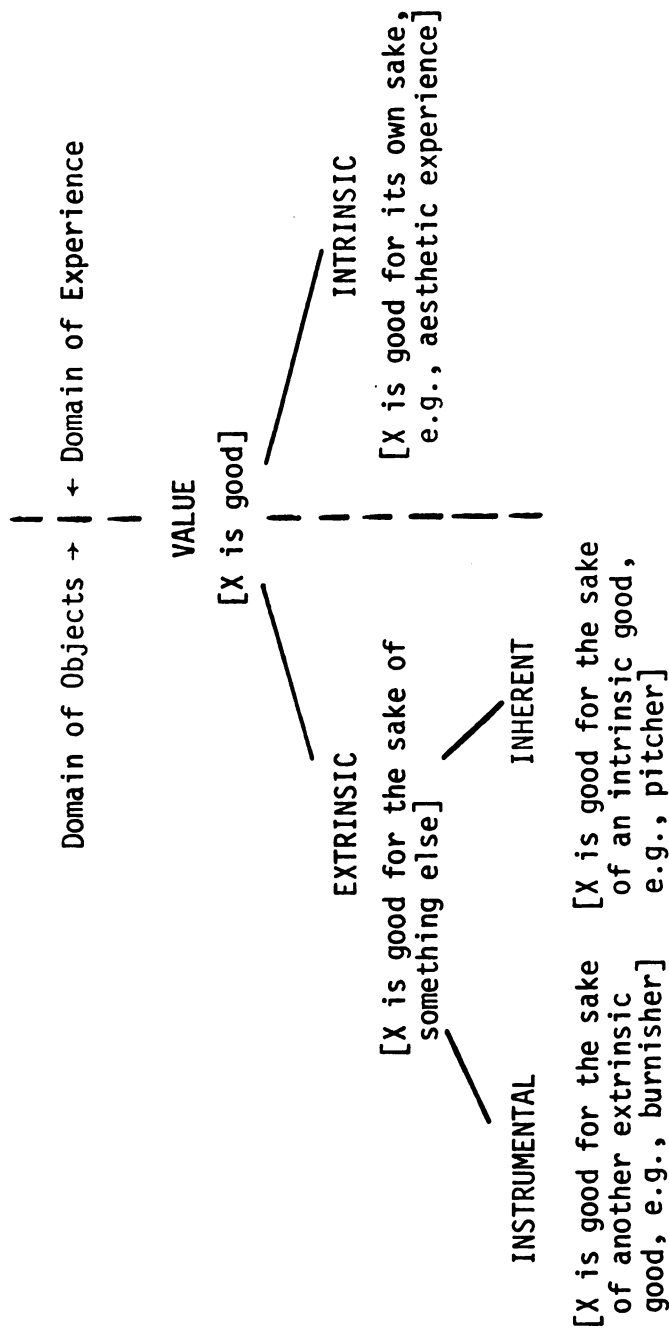


FIGURE 3.2.--Representation of Object Value as Presented by John F. A. Taylor

aesthetic object in one sense and as a useful tool in another sense; ✓
both functions occurring simultaneously in the same object.

Fortunately, Lewis suspected an inability of the model of inherent/instrumental value to describe adequately the full range of extrinsically valued objects within the environment: "There are relatively few things which are good exclusively in the sense of inherent value, and do not possess in addition some usefulness." For example, a Cezanne painting, though generally considered to be art, created without regard for its usefulness, may in fact be used to decorate a room, a degree of instrumental value in addition to its dominant inherent value. Lewis' statement suggests that there is a degree of interweaving between the categories of instrumental and inherent value; that they are not as mutually exclusive as they would at first glance appear to be. His statement continues suggesting that there are a significant number of objects falling within this undefined region:

Since there are two main types of value to be found in objects, inherent value and instrumental value and since a single objective existent may be good in either or both senses, we have three classes of good things: those which are preponderantly or exclusively useful, those possessing some degree of inherent value and also some use; and those which by being preponderantly or exclusively good in the sense of being directly gratifying, are candidates for the label "aesthetic." (There is, of course, the fourth class of objects also, which neither afford direct gratification nor have any use, and are worthless altogether.)⁴

Visually these four categories of object value might be represented as four degrees on a continuum that encompasses all possible objects.

⁴ Clarence Lewis, op. cit., pp. 435-436.

The continuum, as represented in Figure 3.3, would extend from objects having no value, Lewis' worthless objects, to those having pure inherent value.

It is the opinion of the author that the domain of object value is structured not in the form of a single continuum, but rather consists of two dimensions: a dimension of "inherentness"--an ability to provide satisfaction directly, and a dimension of "instrumentality"--an ability to perform a useful task, to provide satisfaction indirectly. And any object can be meaningfully evaluated against these two criteria. However, the central issue is not simply the determination of the strength of each value dimension for a given object, but determining the particular interaction of the two dimensions with respect to a particular object. What is really desired is not only to determine how useful an object is, and independently, how appreciable it is, but rather to determine the degree of interaction between these two dimensions for a single object. ✓ It would be informative to know whether a given object is generally considered more useful than visually pleasing as compared to another object which also has both characteristics or whether its value is predominantly based on its appreciableness rather than its usefulness.

It is therefore proposed that the two dimensions be viewed as two axes perpendicular to one another (Figure 3.4). The total space within which all objects, with respect to value, are located is then divided into four sub-spaces or quadrants. A reading on

NO VALUE	INSTRUMENTAL VALUE	INSTRUMENTAL INHERENT VALUE	INHERENT VALUE
Objects which are worthless in the sense of neutral, without positive or negative value, e.g., a piece of lead if there is no mechanical pencil or no occasion for writing.	Objects which facilitate completion of tasks and provide no direct satisfaction, e.g., a piece of chalk.	Objects which have utility and often serve, in addition, as source of gratification e.g., a writing pen which works well and is so well designed to fit one's hand and be visually appealing that it is a pleasure to use.	Objects which are reliable sources of direct satisfaction with little utility e.g., a Rembrandt painting.

FIGURE 3.3.--A Continuum of Four Categories of Object Value.

AXIS OF INSTRUMENTAL VALUE

[Degree of Instrumentality]

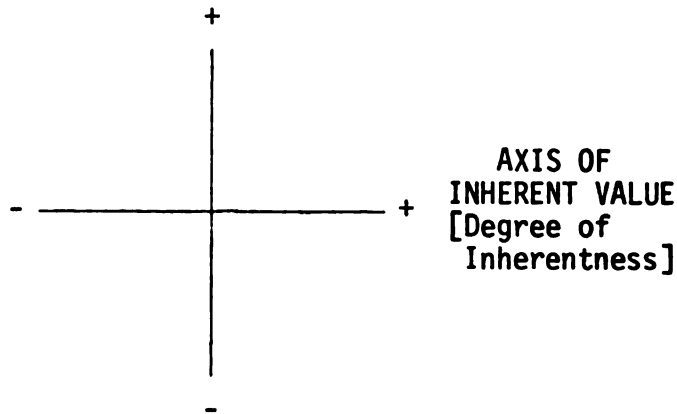


FIGURE 3.4.--The Field of Instrumental and Inherent Value.

either axis is interpreted as the degree to which that characteristic is present or absent for a given object. A positive reading is interpreted as value present, and a negative reading interpreted as value absent.

The four quadrants enable four different combinations of characteristics with respect to the two criteria to be distinguished. All objects located within a particular quadrant have a particular unique combination of characteristics with respect to the two dimensions in common. Objects placed within each of the four quadrants have either positive or negative value in varying degrees of intensity. They are not neutral in value.

Quadrant A (Figure 3.5) contains objects which will be termed the Economy of Disvalue Objects. They may also be described as the

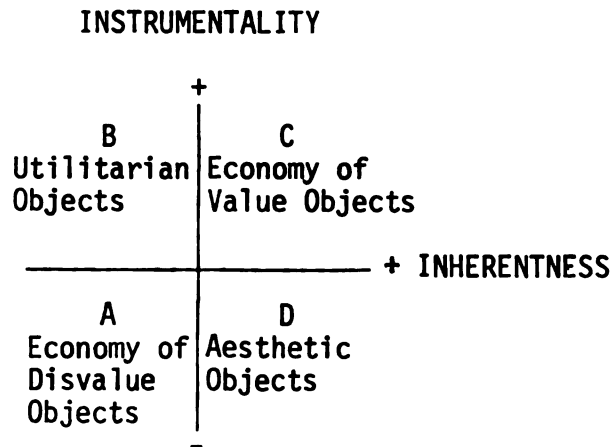


FIGURE 3.5.--A Model of Object Value.

litter in the environment. They are evaluated "negative" on both axes neither serving a positive useful purpose nor providing positive satisfaction by their existence alone. Into this quadrant fall such things as unrepairable toasters, junked automobiles, and wrinkled candy wrappers. If they work at all they are difficult, thwarting, or frustrating to use and therefore are rated negative on the Instrumental axis. They are not merely ordinary to look at but, if not ugly, at the least are displeasing to observe, therefore rating negative on the Inherent axis. Unfortunately, a great number of the objects in our environment fall into the Economy of Disvalue category and because they are not positively valued, they continue accumulating at an increasing rate as discarded refuse littering the environment. They required an investment in materials and labor to produce and are giving little return on that investment. They may in some ways be a handicap to daily existence as they gradually accumulate without an evident purpose.

In contrast, objects in Quadrant B, Utilitarian Objects, are highly valuable. They are those things which are very useful. They perform a useful task and are thus located along the positive section of the Instrumental axis. They do not have positive value as providers of aesthetic experience, they are, in fact, sometimes unattractive or offensive in appearance. They, therefore, rest on the negative end of the Inherent axis. Carburetors, bulk handling milk pails, refuse bins behind commercial buildings and industrial sites all work well and efficiently. They are highly valued for this utility and there is no doubt that civilization literally could not continue without this group of objects.

On either axis it is possible to suggest the relative degree of instrumentality or inherentness present with respect to an object. A heavy iron skillet is useful in that it distributes and retains heat well. However, it requires careful handling to keep it from rusting and food cannot be left sitting in it. In contrast, an iron skillet which has been enameled has all of the thermal advantages of the uncoated iron skillet but, in addition, it requires less care in terms of maintenance. Food can be left in it and it will not rust. As a result, the iron skillet would perhaps be located somewhere in the lower right of Quadrant B (Figure 3.6) since it is positively useful but with some reservations and for this observer, it is not conducive to an intrinsic aesthetic experience. The enameled skillet might be located further away from the origin on the Instrumental axis than the iron skillet since it is easier to maintain and hence has greater all around utility, and it may be ambiguously close to

being considered positive on the Inherentness axis depending on its form, color, and surface. The issue of ambiguity will be discussed below. The enameled skillet may seem to rest exactly on the border between Quadrants B and C (Figure 3.6), not positive on the Inherent axis in the sense of eliciting intrinsic aesthetic value but certainly not negative in the sense of ugly or unpleasant to look at either.

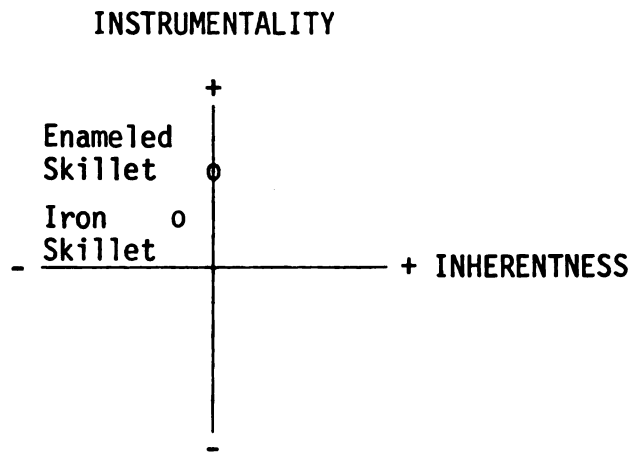


FIGURE 3.6.--A Quadrant B and a Pure Utilitarian Object.

The previous example has raised an important issue. In some respects the visual representation of the model is inadequate. The axes suggest that there is an absolute line of demarcation between any two quadrants. The format of the axes would seem to demand an either--or classification into one quadrant or the other. However, the borders or axes themselves, particularly those between Quadrants B and C and between Quadrants C and D, actually represent a number of objects which might be considered pure types. A location

directly on an axis represents objects which are one dimensional: one axis has positive value and the second axis is neutral, resting on the point of origin as neither positive nor negative. The enameled skillet may be considered purely useful if it occasions neither positive intrinsic aesthetic satisfaction nor evokes a negative feeling of unpleasantness or ugliness. It is, then, neutral with respect to inherent value and therefore rests directly on the margin between Quadrants B and C. The issue of "pure type" objects is perhaps more critical on the margin between Quadrants C and D and will be discussed in connection with Quadrant D objects below.

Quadrant C objects are unique because they are the only objects described by positive value on both axes. In defining his four categories of object value (Figure 3.3), Lewis asserts that "in order to qualify as an object which is good on the whole a thing must usually possess some instrumentality to other good objects, in addition to its potentiality for direct gratification."⁵ An object, therefore, has greater value or "good on the whole" if it is dual-natured, fulfilling two criteria simultaneously. A Quadrant C Economy of Value object, is not only useful, having positive Instrumental value, but its value accrues as a result of something beyond its usefulness. The function of the object has been translated into a form which is not only appropriate to the function, but seems by eminent fitness of form, to express it. The end product is not only useful, but seems visually to enhance daily existence for the user. Economy of Value objects have a characteristic of

⁵Ibid., p. 236.

perspicuous efficiency, of artful economy, of having everything essential to the function and nothing extraneous to it. These are not objects whose attraction is generated out of curiosity, shock, or startlement at their eccentricity. Their attraction has a durability over time because they are highly useful and visually appreciable. The work and they are visually attractive.

Lewis continues the previous statement:

In order to qualify as an object which is good on the whole, a thing must usually possess some instrumentality to other good objects, in addition to its potentiality for direct gratification, or else the inherent value findable in the presence of it must be of a higher order.

The last phrase describes objects in Quadrant D; objects whose value is positive on the Inherent axis providing "higher order" intrinsic aesthetic experience directly, and negative on the Instrumental axis because they are frustrating or difficult to use, or costly in terms of their usefulness. Quadrant D Aesthetic Objects are most commonly described as fine art objects. The purpose of their existence is to serve as a direct source for intrinsic experience. Their high value accrues from their ability to express or communicate in a visual form. Their difficulty and costliness are tolerated because their inherent value justifies their expense. Quadrant D objects are not meant to be casual, comfortable presences, but rather require appropriate psychological distance. As a result, objects such as great paintings and sculpture do not integrate easily into daily existence and its mundane routines. The effort they require in order to extract their potential intrinsic value

requires a singleness of purpose not easily arranged in the many leveled styles of everyday existence. We do not have the time, we cannot go to the museum, we cannot afford the cost and requirements of ownership even though we are aware of the value they have for us because of the sometimes unparalleled satisfaction they can often provide. The quadrant includes objects such as Michelangelo's "Pieta" and Leonardo's "Mona Lisa:" sculpture and painting deemed so valuable in terms of their Inherent value that their preservation is almost too costly. They cannot be easily moved because of the security felt necessary to protect them, and their inherent value is often unobtainable because the constant crowd of viewers which surrounds them which prevents them from being seen at advantage by anyone.

As exhilarating as Quadrant D objects are, it is unrealistic to expect to maintain that level of intense intrinsic satisfaction with any one object for extended periods of time. It is at this point that it is appropriate to turn back to Quadrant C, Economy of Value objects. They have a function both useful and visual, and include a wide range of objects: from a Trecento Italian altarpiece to a contemporary leather armchair. They provide positive intrinsic value, but do not have the intensity of the art object. They are familiar and integral to our daily lives. We can live with them rather than being demanded to concentrate on them. Because of their familiarity, our interest and involvement with Economy of Value objects can be sustained for longer periods of time without becoming

over saturated than is possible with art objects. Response to Quadrant C objects is low-keyed rather than highly intense. They are described with comfortable aesthetic adjectives such as well done, attractive, and pleasant. In contrast, art objects are described with much more intense adjectives such as strikingly beautiful, breath-taking, monumental: terms which are not likely to describe objects which are comfortable to live with over time.

The issue of "pure type" objects, those which are essentially one-dimensional with respect to value, was discussed above and is pertinent again in connection with the axis between Quadrants C and D. The value of some art objects is purely Inherent since value accrues for their ability to provide intrinsic experience which is enjoyable without great cost. They are, therefore, neither positively useful nor negatively useful. As shown in Figure 3.7, they rest exactly on the axis between Quadrants C and D rather than within Quadrant D.

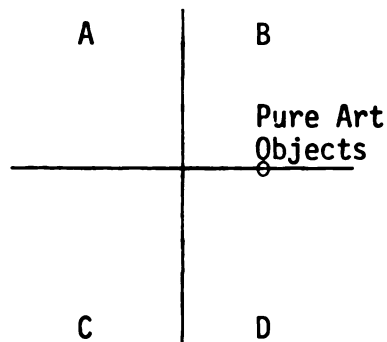


FIGURE 3.7.--Pure Art Objects.

A great percentage of all painting and sculpture probably falls along this line. The objects are highly appreciable and they can be appreciated without cost; they are not negatively valued with respect to instrumentality. When intrinsic experience can only be achieved at some cost, at some discomfort, or under some negatively felt condition, then the inherently valued object is located within Quadrant D, not on the axis itself.

The model identifies an additional group of objects beyond objects within the four quadrants and "pure types" located directly on the axes. The last category includes those objects which have neither positive nor negative value on either axis. They are not one-dimensional but in a sense are without value. In Lewis' classification of object value, he referred to this group of objects as "worthless." Without either positive or negative value they correspond to the point of origin on the model. They are absolute zero objects which lie outside of the valuing process. They neither serve nor thwart our purposes, they neither satisfy nor offend our sensibilities. In the natural world these objects are relatively easily identified. A blade of grass or a grain of sand is generally not referred to as having either positive or negative value. Each simply exists. It is more difficult to identify objects with neutral value in the domain of intentionally created objects because the very fact that they were considered valuable enough to be made in the first place takes them out of the category of neutral value objects to some degree. Perhaps the category includes things such

as wooden spools whose thread has been used up, or used corks from wine bottles. Both items, once useful, no longer have positive instrumental value nor are they particularly appreciable in an inherent sense. But the value society attaches to the material they are made of, wood or cork, respectively, makes one hesitate to discard them. At the present moment, they are neither useful nor visually appealing, but neither are they negatively useful nor visually undesirable. They are just present. They simply exist until we are tired of moving them and throw them out or transform them into another object which has positive value. For example, the spools may be made into beads for children's play. This category of objects is conceptually critical to the model since it defines a feature integral to the visual model: the point of origin. It is difficult to illustrate the conceptualization of the category with specific objects, which may be due to the fact that by nature these objects are rather neutral, they evoke no value response and hence are present within the environment, but are camouflaged, in a sense, to our perception.

Placement of objects within the four quadrants depends on determining how a given individual most characteristically or most typically interacts with or responds to the object. The important question is whether this construct for object value is a meaningful way of talking about object value: whether the construct provides a terminology and set of relationships which have meaning across a significant number of people and thus permits communication. If

there is some consistency across individuals in the way they evaluate a given object's usefulness and its reliability as a source of satisfaction, its instrumentality and its inherentness, then there is evidence that there is a common meaning for those terms. There is no doubt that, if taken to the extreme, a painting can be considered useful--that it can be "used" to cover a hole in the wall; or that a set of highly polished industrial ball bearings can be set apart in a museum and called "sculpture." However, a painting is generally not valued as a patch for a wall, but rather as an appreciable object. Ball bearings are typically not valued as appreciable objects, but rather are more commonly valued as highly useful instruments designed to reduce friction. If the two previous examples seem correct, then there is evidence for a common meaning of the concepts of "inherent" and "instrumental" value.

In summary, this chapter has presented a conceptual framework, identified its theoretical source, and developed the individual concepts which it employs. However, a conceptual framework appropriate and helpful to only one individual has limited value. Only if others use it to structure the same world and the two find consistency in the way they use it can it be said that a path for communication has been identified. It becomes true communication because it is shared meaning, not similar terminology masking quite different underlying conceptual frameworks. There is a need to bring true communication, a sharing of meanings, into the area of object value. The following chapters will assess whether the

conceptual framework developed is capable of moving slightly closer toward that further goal of shared meaning with respect to the value assigned to objects.

CHAPTER IV

AN EMPIRICAL FORMULATION OF THE CONCEPTUAL MODEL

Statement of the Problem for Research Implementation

As stated above, a conceptualization of object value which had meaning and provided understanding for only one individual had a small role to play in furthering the understanding of object value generally. To determine whether the model presented in Chapter III had such a limited role or whether its formulation had a certain logic which others would find useful, an empirical model based on the conceptual model was developed. The intent was to determine whether the evaluations of objects by the author, a panel of design professionals, and a sample of college students in an introductory design course would provide evidence that all were using the conceptual model in a consistent manner; that all had a common understanding of the concepts of inherentness and instrumentality.

Research Hypotheses

To provide a standard with which to assess the persuasiveness of the conceptual framework as presented in the empirical model, the following hypotheses were identified and evidence proposed for each which the author felt would constitute agreement with each hypothesis if obtained under controlled conditions.

Hypothesis 1: The conceptual model was capable of consistently discriminating four categories of object value across several groups of individuals.

Evidence for agreement was to be similar classifications of a number of objects by the author, a panel of design professionals and a class of design students at the end of an introductory design course.

Evidence for agreement was to be consistent classifications across the three groups when a particular object was presented alone and when it was presented simultaneously with a similar, yet not identical object functioning as a distractor.

Hypothesis 2: The conceptual model was capable of detecting change in the perception of object value over time.

Evidence for agreement was to be change toward greater discriminatory ability from administration of the test at the beginning of a design course and at the posttest administration at the end of the course. Greater consistency of response among the three groups (author, professionals, students) was expected at the posttest than at the first administration.

Hypothesis 3: Individuals having high aesthetic interest in general would be expected to evidence greater consistency with the classifications of the panel of professionals and the author than those without a high aesthetic value orientation.

Evidence for agreement was to be higher performance on the empirical model at both the pretest and posttest situations for individuals who scored at or above the nationally normed

82 percentile on the aesthetic score of the Allport-Vernon-Lindzey Values Inventory than individuals with lower aesthetic value scores.

The three hypotheses provided a means for assessing the validity of the empirical test developed from the conceptual model. They provided a means for responding to the question: Given the theoretical model, what behaviors, conditions, or responses, when observed would provide evidence for the existence of the object value construct which the conceptual model proposes.

To as great a degree as possible validity was interpreted in accordance with the standards developed by a joint committee whose members represented the American Psychological Association, the American Educational Research Association, and the National Council on Measurements Used in Education. The committee defined validity on three dimensions: content, criterion-related, and construct validity.¹ Each of the three dimensions will be introduced as each becomes pertinent within the development of the empirical test.

Assumptions

The study was based on the following assumptions:

1. An individual's valuing behavior is not random but has some consistency over time and with respect to content.
2. An individual's predisposition toward broad interest orientations can be identified though not necessarily measured.

¹Standards for Educational and Psychological Tests and Manuals (Washington, D.C.: American Psychological Association, 1966), section on Validity.

3. Valuing behavior may be changed as a result of intervening educational experiences.
4. The aesthetic attitude assumes a positive appreciative approach to an object on the part of the observer.

Development of the Empirical Test

The Empirical Test-Version II (Appendix B) is the product of three trial runs and subsequent revisions. An initial presentation of the conceptual model itself was made to select an appropriate vocabulary with which to present the conceptual model in an empirical test which could be easily and quickly understood by individuals unfamiliar with design or value theory terms. The conceptualization of the model was presented verbally along with a graphic representation to a class of 50 undergraduate and graduate students. The class was then shown slides of two objects and asked to locate each within the conceptual model. Discussion immediately after this session provided the following insights which were incorporated into the first version of the empirical test (Appendix A).

It was evident that the test would first have to help the subject make a distinction between evaluations of intrinsic and extrinsic value. Although they occur simultaneously with respect to a given object, only the second was of concern in the present study. The intrinsic value response evidenced in a sense of satisfaction from an object, or preference felt for it, was outside of the scope of the present study. An evaluation of the actual intrinsic experience occasioned by an object cannot be externally evaluated or questioned by a second individual, it is an individual's emotional response in

the presence of the object ranging from satisfaction to displeasure. An individual may like Victorian design and dislike what is termed modern functional design. For the purposes of this study, intrinsic evaluation had to be kept distinct from the extrinsic evaluation of Victorian and functional design which identified the specific dimensions in each which were capable of producing or not producing for a given individual, the intrinsically valued experience. Extrinsic evaluation of an object is involved with the properties of the object which are capable of creating intrinsically valued experience.

The first question of the test asked the respondent to first characterize her immediate response to the object being presented: was it liked, disliked, or did it evoke a neutral response. The discrimination identified the individual's intrinsic response to the object. The second discrimination was the one of primary concern to the study and involved evaluation of extrinsic value for the same object. Discrimination II asked the respondent to locate the object in one of the four quadrants within the value field. The two questions, Discriminations I and II, therefore, separated the respondent's intrinsic and extrinsic evaluation of the same object.

Separation of intrinsic and extrinsic judgments also solved a conceptual problem brought up by the fourth assumption of the

study. By definition² an aesthetic evaluation assumes a positive, appreciative attitude on the part of the evaluator. The act of attributing positive aesthetic value to an object occurs simultaneously with enjoyment of that object. It is meaningless to say that aesthetic value should be appreciated, for aesthetic value does not exist except as it is recognized by an appreciative observer. An individual who responds negatively to an object may find it difficult if not impossible to make a positive aesthetic evaluation of it. In the context of the empirical test then, it was difficult to mark "I dislike it" in Discrimination I, and in Discrimination II to use the right half of the model Quadrants C and D, which rest on the positive end of the Inherent axis. To be located within these quadrants, the object must have provided intrinsic aesthetic experience for the observer. By strict definition that intrinsic experience would have been impossible to obtain without a positive attitude, identified by the response of "I like it" in Discrimination I. However, there are times when any sensitive observer will say something to the effect that "I think this object is very attractive or aesthetically pleasing though personally I don't like it." Strictly speaking, even though the observer professes not to like the object,

²George Santayana, The Sense of Beauty (New York: Scribner's Sons, 1886; Dover, 1955), p. 13. "There is no value apart from some appreciation of it," and Vernon Lee, The Beautiful (Cambridge: Cambridge Press, 1913) reprinted in Melvin Rader, ed., A Modern Book of Aesthetics (New York: Holt, Rinehart, and Winston, 1935), p. 359. Lee refers to the motivation of aesthetic experience as "empathetic"--as "feeling oneself into something." Bertram Morris, "An Analysis of the Aesthetic Experience and of the Aesthetic Judgment as Reflecting upon a General Theory of Value" (Ph.D. dissertation, Cornell University, (1934), p. 5. "The value situation first arises when an object is appreciated or enjoyed."

he has at least a minimally positive appreciative attitude toward the object. By separating Discrimination I into three possible responses, the test could distinguish between strong positive attitudes (I like it), and less positive attitudes (I am indifferent to it, or I dislike it).

As assumption of a positive attitude as prerequisite for the determination of value did not seem as essential a condition with respect to the instrumental axis as for the aesthetic axis. There is no reason to suggest that an individual must be positively inclined toward an object generally in order to determine whether it is useful or not. An evaluation of an object's instrumentality is not dependent upon having a positive attitude toward the object generally.

The first verbal presentation also identified a need to describe as precisely as possible, the value combinations within each of the four quadrants. The abstractness and unfamiliarity of the concepts of inherent value and instrumental value prevented these ideas from being internalized rapidly enough within the time constraints of experimental conditions to be used with facility when presented with an object. As a result a set of quite specific criteria for each axis (Appendix A, p. 1, criteria A and B) was developed which, when combined in four different ways, expressed a value combination unique to each quadrant. Criterion A stated simply, "It (the object) was designed to serve a useful purpose." The three statements in Criterion B were intended to reflect the three characteristics of an aesthetic object as described by Lewis; its

designation as something intrinsically good in itself, its ability to cause a "contemplative pause" when an individual comes into contact with it--an arrest in reaction to its higher order value, and its reliability as an object of inherent value of many people over an extended period of time.³ The subject would determine what combination of the two criteria described the object and would select the quadrant of the model which matched that combination; neither criteria A nor B, A only, both A and B, or B only.

After development of the test, a selection of objects in slide medium was assembled which met the following criteria. All objects were within the Western cultural tradition and extant in Twentieth century culture. The purpose of this requirement was to use only items which were potentially familiar to contemporary experience, whether in a museum, within ordinary households or as part of the outdoor public environment. In order to be able to interpret the results, an attempt was made to avoid objects which could have been interpreted as having several kinds of instrumental value. For example, clothing or housing may be "instrumental" in several senses: as protection for the body, as symbols for communication of messages such as power or social status, or as objects carrying sentimental associations. Forty slides of objects were assembled which satisfied the above criteria and which, according to the evaluation of the author, gave equal representation to each of the four quadrants.

Selection of the slides, therefore, responded to the requirements for content validity, the representativeness or sampling

³Lewis, op. cit., pp. 455-456.

adequacy of the content selected for an instrument. The selection of slides attempted to identify a group representative of the universe of content which the conceptual construct described.

At this point several actions were taken to eliminate any objects which were ambiguous from a technical standpoint. Independently, two graduate students in design fields classified each and discussed their classifications with the author. Objects were eliminated where there was a disagreement between the two reviewers' perception of a given object due to such technical considerations as the readability of the slide, or the influence of the photographic style itself on the perception of the object. For example, a simple spark plug can be made to appear an imposing piece of statuary when scale, color, and lighting are manipulated under studio photographic conditions. Eight slides which appeared to be susceptible to these kinds of problems but which for other reasons were desirable to include were then presented to a graduate seminar as part of a presentation on the conceptual framework. The slides continued to be ambiguous and all but one were eliminated from the empirical test. The winnowing process left 15 slides which were subsequently used.

A third Discrimination was developed which focused on the relationship between the two value dimensions. A number of statements were selected by writers who had expressed with some success the nature of the relationship between inherent and instrumental value: the form in relation to the function of an object. Respondents were to read the statements, and when shown simultaneously two objects of similar function but with forms which differed slightly,

were asked whether each object illustrated the kind of object the writers were describing. The decision to present objects in pairs in this section was an attempt to increase awareness of the potential range of different solutions to the same design problem and to help intensify differences between various solutions. When two chairs which differ only slightly in their outward appearance are displayed together, the observer almost immediately perceives the point at which they differ due to their close proximity and can easily identify the characteristics unique to each. If the two chairs are presented to an observer separately, their unique characteristics may be overlooked without the foil of the different solution to the same problem which brings the characteristics into prominence.

Use of a comparative technique for analyzing phenomena is sometimes questioned on the grounds that although it brings characteristics into prominence, it also sets up a forced choice situation in which the perceiver is unconsciously biased toward a predetermined response. However, in this situation the individual was asked to evaluate both objects and was given the same number of alternatives with which to evaluate both objects. The subject was not forced to choose only one or the other, but could select from the full range of possible evaluations for each object. To be sure that there was no forced choice effect, a check was built into the test to determine the effect of the comparison situation on the classification response the results of which will be discussed in Chapter V.

The three Discriminations in the first version of the test were ordered so that the respondent progressed toward increasingly

more subtle evaluations of the same object. Discrimination I made a distinction between intrinsic and extrinsic value, asking whether the object has intrinsic value for the individual. Discrimination II dealt with the four broad categories within extrinsic value asking the individual to evaluate the object by placing it in an appropriate quadrant. Discrimination III concentrated on the discrimination of the two dimensions of extrinsic value using a single statement which integrated the two dimensions rather than using two separate criteria.

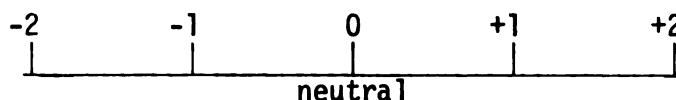
The first version was tested within a controlled situation to a sample of 28 female undergraduate students enrolled in an introductory design course of 35 students. Respondents were asked to describe briefly in writing why they placed each object in the quadrant that they did in order to check again for confounding factors within the slides. Two objects were eliminated at this point. One was eliminated because respondents were attending to objects secondary to the object which was intended to be evaluated, and one in which the slide was too dark to be clearly visible.

From the written comments of respondents and from the tabulated results of this first run, it became evident that the format of the two sets of criteria (A and B) forced the evaluator to view the model as four separate boxes, rather than as two intersecting dimensions each with a range extending between negative and positive poses and thus having degree of value, not simply inherent value either present or absent and instrumental value either present or absent.

Perhaps a more important inadequacy of the format of the first version was that it did not allow the respondent to designate a locus directly on either axis. The conceptual model described pure art objects as those resting directly on the Inherent axis between Quadrants C and D having neither positive nor negative instrumental value; and pure utilitarian objects as those resting directly on the Instrumental axis having neither positive nor negative inherent value. As Discrimination II was arranged it was impossible to locate a point directly on either of the axes, an object could only be located in the area between the axes and thus the empirical test did not reflect the sensitivity of the theoretical conceptualization of the model.

The second Discrimination was redesigned to resolve the two issues raised, creating a second version of the Empirical Test (Appendix B). Rather than presenting the model with a visual representation of the two perpendicular axes, the revised version asked the individual to respond to two statements: the object is designed to serve a useful purpose (a statement descriptive of the Instrumental axis of the conceptual model), and secondly, the object is enjoyable just to look at for its own sake (a statement descriptive of the Inherent axis). The individual's response was not restricted to only yes or no, an either-or forced choice response, but could vary along a five point continuum from strongly negative through neutral to strongly positive responses as illustrated in Figure 4.1.

The object is designed to serve a useful purpose.



The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.

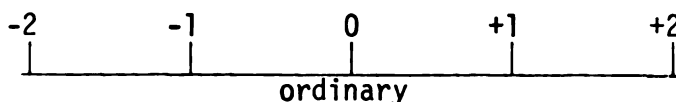


FIGURE 4.1.--Extrinsic Evaluation Continuums for Empirical Test--
Version II.

The neutral point in the center of each continuum provided a means for registering a response such as, "the statement does not seem appropriate in the case of this object," or "the object is not strongly enjoyable nor particularly unattractive, it simply exists." The two continuums which replaced the set of criteria and graphic model for Discrimination II in the first version of the test therefore provided a range of potential response and also provided a position for objects located directly on the axis as proposed in the conceptual model. This can be observed if the two continuums are placed perpendicular to one another at the neutral points on each (Figure 4.2). Evaluating an object as neutral on one of the continuums places it directly on the axis of the second dimension when the two scales are combined. For example, if the two evaluations of a painting are 0 on the instrumental continuum meaning neither

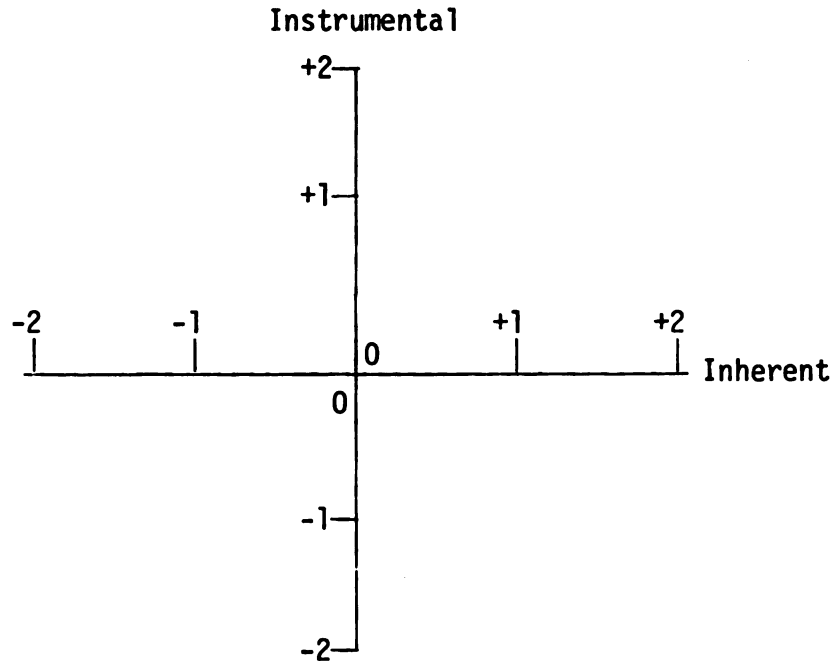


FIGURE 4.2.--Combination of the Two Extrinsic Evaluation Continuums of the Empirical Test--Version II.

positively nor negatively instrumental, and +2 on the inherent continuum, meaning very enjoyable visually, the locus of that object when the two scores were plotted would be directly on the Inherent axis (Figure 4.3) .

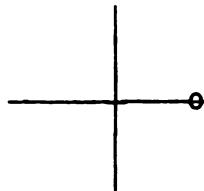


FIGURE 4.3.--Locus of a Painting on both the Empirical Test Continuums and as Described within the Conceptual Model.

The theoretical model identified this kind of object as a pure type having high value on one dimension only, with neutral value on the second. The locus resulting from the two independent continuums and the locus resulting from the conceptual model are at the same point on the graphic representation.

In the second version of the test then, the conceptual model evolved out of two independent evaluations of the object by the respondent, rather than by presenting the conceptual model directly to the individual. Discriminations I and III remained the same in the second version of the test with only minor changes in format and wording.

Validation of the Empirical Test

The revised Empirical Test was then used to gather the data necessary to respond to the three hypotheses posed.

A Sample of Professionals

In order to respond to Hypothesis 1, the test was given to four professionals representing four areas of design.⁴ It was felt necessary to have a sample of individuals professionally interested in and constantly involved with the kinds of issues being raised in the study for the following reason. Aesthetic theory⁵ suggested

⁴Individuals in the sample represented the fields of interior design, industrial design, clothing, and textile design. All were currently teaching within their area of specialization, and with the exception of the specialist in clothing, all were currently professionally active in their respective design areas.

⁵For example, see Susanne Langer, Feeling and Form (New York: Scribner's Sons, 1953), p. 406.

that a truly discerning evaluation of an object required not only an instinctive, intuitive response, but an informed understanding of how the effect was created; an analytical and critical ability which could only be acquired through continued appreciative experience with objects. Professionals in design could be assumed to have that informed appreciative approach to their particular kind of object. The rationale for inclusion of the group of professionals was to determine whether professionals with a relatively high degree of insight into these design issues, would similarly evaluate the same objects when asked to use the conceptual model. Similar responses would signify common usage of the two concepts basic to the conceptual model and a similar manner of applying them in a given situation. The purpose of the professional sample was not to create a "standard" of excellence or a "correct" evaluation for each object against which the author and the design students would be compared, but to determine whether their evaluation of the group of objects, an informed and appreciative evaluation would evidence any patterns as a group in common with both the author's evaluations and to those of the design students. Consistency of responses among the four professionals, the author, and the students would be considered evidence of support for Hypothesis 1.

A Sample of Students

Since their purpose was as a means for validating the test in several specific ways, rather than to permit the findings of the

study to be generalized from the samples to a larger population, both the professional and student groups were not statistically random samples.

The sample of 116 undergraduate female students was taken from a population of 224, a class enrolled in an introductory design course.⁶ This permitted the validation of the empirical model by a group which could be expected to consider the issues being dealt with in the conceptual model with more interest and involvement in the content of the research than might be found in a sample taken from a group without a design focus. The group might be expected to have a higher incidence of respondents with the positive attitude necessary for evaluating objects. Presumably students enrolled in a design course, either as part of a design major or interested enough to select it as an elective could be expected to have a more positive attitude toward design in general than other population subgroups. A second reason for taking the sample from a design course was because it could also be expected to contain a high number of individuals with high aesthetic interest, a subgroup required for responding to Hypothesis 3.

⁶Student sample was taken from the Fall Semester, 1975, class of the course Environment and Design 120, Fundamentals of Design, University of Wisconsin at Madison. Because there may be a significant difference in socialization practices between male and female children, it was felt prudent to control for sex in the sample since the results of socialization patterns may be influential to the way individuals attribute value to objects. The number of males in the class was not large enough to be able to compare evaluations between male-female subgroups.

A Pretest-Posttest Research Design

To validate the empirical test and by implication the conceptual model, the research design called for a pretest and posttest for the following reason. Based on the third assumption for the study, any design curriculum assumes that valuing behavior with respect to objects may change with the introduction of information and analytical training in design principles. The study assumed that during the interval of a design course, a change with respect to value classification of objects would occur. Therefore, if the empirical test was indeed sensitive to discriminating categories of object value, change in valuing behavior between pretest responses to the empirical test and posttest responses after the interval training period should be evident. Change in value discrimination ability could also be influenced by a number of other conditions such as the effect of the test itself on sensitizing the respondents to these kinds of distinctions, increased awareness and knowledge introduced by the course content, experiences of the subjects during the thirteen week interval between the pre- and posttests, or a general change in the subject because of the normal maturation during the interval. Whether because of the course itself or to these secondary causes, the study hypothesized that change in an individual's ability to distinguish object value would occur and that the empirical test would be capable of detecting the change. There was no reason to control for differing art or design backgrounds within the sample selected because the only concern was the fact that at whatever level

the individual entered some change upward in the score could be perceived on the posttest taken at the end of the course.

The second approach to validation, Construct validity, would be established by documenting change in a predictable direction from the pretest to the posttest situation. The validation of the test would be strengthened if change toward greater consistency occurred between the evaluations of the author, professionals, and the posttest after a thirteen week exposure to basic design concepts than occurred at the pretest before the design training.

Following the posttest administration of the test, individuals completed the Allport-Vernon-Lindzey Values Inventory (AVL) (Appendix C). The AVL inventory was used in order to respond to Hypothesis 2, to provide criterion-related or concurrent validation for the empirical test. Concurrent validity is generally understood to mean the comparison of results obtained with a new test with a known measure believed to measure similar attributes or characteristics.⁷ No instrument could be located which measured discriminatory ability with respect to object value. The AVL instrument measures aesthetic interest and was the only instrument with tested reliability and validity which measured in any way the concepts integral to the present study. The relationship suggested between the AVL instrument and the empirical test was that an individual with high aesthetic interest as defined by the AVL inventory might be expected to have greater aesthetic sensitivity, perhaps greater and

⁷ Standards for Educational and Psychological Tests and Manuals, op. cit., p. 13.

perhaps more experience in making aesthetic discriminations than individuals with little aesthetic interest. Individuals who scored high on the aesthetic score of the AVL inventory would therefore be expected to have a high score on the empirical test which discriminated among categories of object value, one of which was an aesthetic discrimination.

Based on Edward Spranger's Types of Men⁸ the AVL inventory purports to measure the relative prominence of Spranger's six basic interests or motives in personality: theoretical, economic, aesthetic, social, political, religious. Created in 1931, the inventory has been revised and renormed twice. Spearman-Brown product-moment correlation for reliability of the aesthetic value is presently .89, with mean reliability coefficient (Z transformation) for the test as a whole .90. Repeat reliability for a two-month interval is .87 for the aesthetic value. The aesthetic score estimates the degree to which the respondent shares the following outlook:

The aesthetic man sees his highest value in form and harmony. Each single experience is judged from the standpoint of grace, symmetry, or fitness. He regards life as a procession of events; each single impression is enjoyed for its own sake. He need not be a creative artist, nor need he be effete; he is aesthetic if he but finds his chief interest in the artistic episodes of life. . . . The aesthetic either chooses, with Keats, to consider truth as equivalent to beauty, or agrees with Menchen, that "to make a thing charming is a million times more important than to make it true."⁹

⁸Edward Spranger, Types of Men, trans. Paul J. W. Pigors from the 5th German edition of Lebensformen (Halle: Max Niemeyer Verlag, 1929).

⁹Gordon W. Allport, Phillip E. Vernon, and Gardner Lindzey, Manual: Study of Values (New York: Houghton Mifflin, 1970), p. 4.

Because of the unresolved questions concerning what personality inventory instruments actually measure,¹⁰ the aesthetic AVL score was interpreted very broadly to mean an identification not of a precisely defined aesthetic value as such, but rather of a relative predisposition toward, or interest in, aesthetic concerns as compared to the other five groups.

Individuals were asked to complete the inventory during the class period. It was prefaced only with the statement that the purpose of the values inventory was to identify the basic interest orientations present in the class, much like demographic information such as age, sex, and level of education is requested in other kinds of research.

In summary, this chapter presented the hypotheses necessary in order to establish validity for the conceptual model presented and developed in Chapter III, and the assumptions which were necessary in order to proceed with the validation. The three stages of the development of the empirical test were discussed and the specific behaviors were identified which, if observed, would be accepted as measures of validity for the empirical test and by implication, for the conceptual model.

¹⁰Rollo Handy's discussion of the AVL instrument; Chapter 4, sec. B. in Measurement of Values (St. Louis, Mo.: Warren Green, 1970) presents the central issues involved.

CHAPTER V

PRESENTATION AND DISCUSSION OF RESULTS

The previous Chapter presented an empirical model appropriate for analyzing the validity of the conceptual framework developed in Chapter III. The present Chapter will present the data obtained using the empirical model and will discuss the results.

The discussion of results will be presented in the following sections: descriptive characteristics of the sample, results of Discrimination 1, Discrimination 2, Discrimination 3, results for high aesthetic value subsample, and summary analyses on the empirical test as a whole.

Descriptive Characteristics of the Sample

Sample size of both pretest and posttest groups was 116 female students enrolled in an introductory design course. The sample was described as predominantly freshmen and sophomores, white, and between the ages of 18 and 20. The pretest was administered with the sample divided into five sections at the first discussion session of the course; and 13 weeks later at the end of the course, again in five groups. A brief explanation of the study and directions were read to each group in order to maintain consistency of the test situations across the 10 periods.

Description of the sample with respect to basic value orientations according to the six value or interest categories identified in the Allport-Vernon-Lindzey values inventory is presented in Table 5.1.

It had been anticipated that individuals, knowing they were involved in a research project concerning aesthetic choices, might consciously or unconsciously bias their scores on the AVL value inventory toward high interest in aesthetic value as compared to the five other groups. In order to correct for that situation, the cut for the upper group (High) was set in order to include only those individuals falling above the 82 percentile of all females (as normed by the AVL instrument, Appendix C, p. 12), or only those individuals with outstandingly high aesthetic scores. Comparison of the number of individuals scoring high for aesthetic value (N=11) with the number of individuals described as high in the other five value categories, N=10, 15, 10, 7, and 8 respectively shows that an artificial bias toward high aesthetic value because of the content of the research did not occur.

Results of Discrimination 1

Although not essential to answering the three hypotheses posed for the study, an observation on the responses to Discrimination 1 is indicated in relation to the fourth assumption underlying the validation of the conceptual model. Discussion in Chapter IV suggested that aesthetic evaluations cannot be made unless the attitude of the evaluator toward the object is positive. Appendix D

TABLE 5.1.--Distribution of Value Orientations from the Allport-Vernon-Lindzey Inventory.

Score	Aesthetic		Theoretical		Economic		Social		Political		Religious	
	N	%	N	%	N	%	N	%	N	%	N	%
High	11	9.5	10	8.6	15	12.9	10	8.6	7	6.0	8	6.9
Middle	97	83.6	96	82.8	90	77.6	93	80.2	96	82.8	86	74.1
Low	3	2.6	5	4.3	6	5.2	8	6.9	8	6.9	17	14.7
TOTAL	111*	100.0	111	100.0	111	100.0	111	100.0	111	100.0	111	100.0

*Five individuals did not take the AVL inventory.

breaks the classifications of objects into the three attitude categories of Discrimination I; whether the individual liked the object, was indifferent to it, or disliked it. Comparison of the three sets of data shows that there was a definite interaction between one's attitude toward an object, whether the object had intrinsic value for one, and the extrinsic evaluation of the object which occasioned that positive experience. Individuals who liked an object tended to evaluate objects higher on both Inherent and Instrumental axes than those who did not like it. Individuals who were neutral or indifferent toward the object tended to use the neutral point on the two axes more frequently than the other two attitude groups. Individuals who disliked the object tended to use the lower ends of the two axes more often than the other groups.

Results of Discrimination 2

Hypothesis 1 proposed consistent classifications among the three groups represented in the research design: author, panel of professionals, and class on the posttest. Hypothesis 2 proposed that the empirical model could detect change in perception of object value evidenced by change in the consistency of responses between pretest and posttest results in response to the intervening treatment. In order to measure change between pre- and posttests a norm classification was identified for each object. The norm was determined as the classification having the greatest frequency among the author and four professionals. Discussion of the results will be presented individually for each object used in the empirical test.

Table 5.20 summarizes agreement with the two hypotheses for the group of objects illustrated in Plates 5.3-5.15, and reported in Figures 5.1-5.18 and Tables 5.2-5.19.

Data (Figure 5.1 and Table 5.2) showed agreement with Hypotheses 1 and 2. Location of the quilt (Plate 5.3) within Quadrant C as an Economy of Value object having both utilitarian and aesthetic value, was supported by the author (Δ), three out of four of the professional panel (∇), and the class in both pretest (o) and posttest (*).

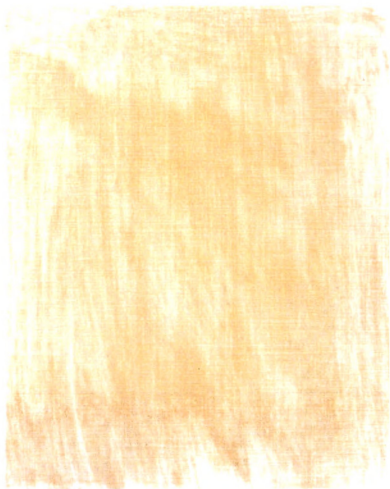
Using Quadrant C as the norm identified by author and panel, analysis was made to determine the degree of change from pretest to posttest responses selecting Quadrant C. Chi-square statistic showed significance at .01 in support of Hypothesis 2.

Consistency for location of the Balcony (Plate 5.4, Figure 5.2, Table 5.3) within Quadrant A as an object with negative utilitarian value and negative aesthetic value was obtained between author, panel, and pre- and posttest data. Chi-square statistic to detect change in response toward greater consistency at the posttest was not significant because of the high degree of consistency already existing at the pretest situation with 91 out of 116 respondents agreeing with author and panel.

The painting (Plate 5.5) represented the category of objects which, according to the conceptual model, would rest directly in the positive end of the Inherent axis and at the neutral point of the Instrumental axis. The norm was set at that location since three



PLATE 5.1.--Object 1: Quilt



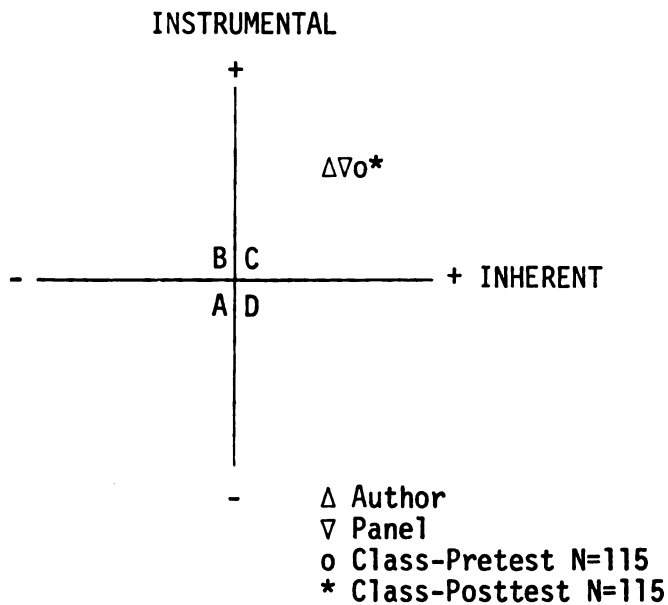


FIGURE 5.1.--Summary of Classification of Object Within Value Field: Quilt.

TABLE 5.2.--Distributions of Classifications of Four Evaluating Groups for Object: Quilt.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					2	1.7	1	.9
AB					5	4.3	1	.9
B					8	6.9	3	2.6
BC			1	25	10	8.6	10	8.6
C	1	100	3	75	79	68.1	98	84.5
CD					8	6.9	2	1.7
D					1	.9		
AD					1	.9		
Origin					1	.9		
N	1	100	4	100	115	99.1	115	99.1

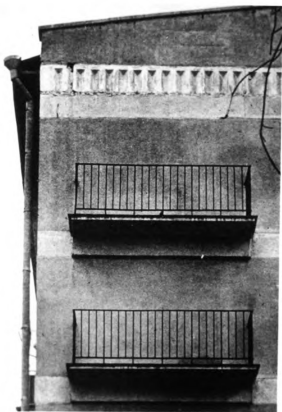


PLATE 5.2.--Object 2: Balcony

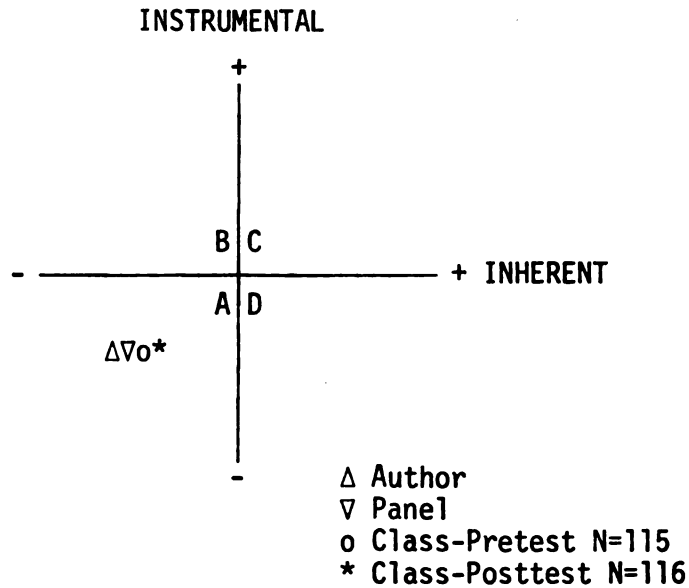


FIGURE 5.2.--Summary of Classification of Object Within Value
Field: Balcony.

TABLE 5.3.--Distributions of Classifications of Four Evaluating
Groups for Object: Balcony

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	100	4	100	91	78.4	89	76.7
AB					14	12.1	6	5.2
B					3	2.6	9	7.8
BC					2	1.7	3	2.6
C					1	.9	2	1.7
CD							1	.9
D							2	1.7
AD					3	2.6	3	2.6
Origin					2	1.7	1	.9
N	1	100	4	100	116	100	116	100



PLATE 5.3.--Object 3: Painting

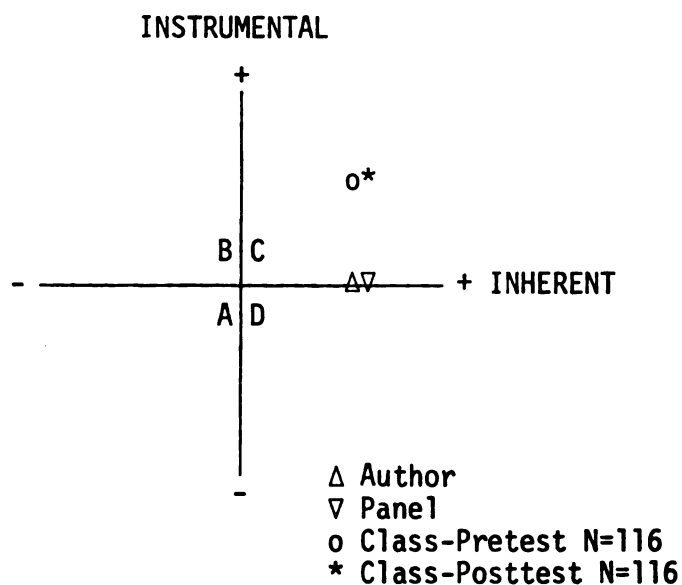


FIGURE 5.3.--Summary of Classification of Object Within Value Field: Painting.

TABLE 5.4.--Distributions of Classifications of Four Evaluating Groups for Object: Painting.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					1	.9	1	.9
AB							1	.9
B					2	1.7	1	.9
BC					2	1.7	1	.9
C					62	53.4	66	56.9
CD	1	100	3	75	33	28.4	36	31.0
D					4	3.4	7	6.0
AD			1	25	1	.9	1	.9
Origin					11	9.5	2	1.7
N	1	100	4	100	116	100.	116	100.

of the four panel members agreed with the classification of the author. This was thought to be one of the more difficult discriminations, a view which the data supported (Figure 5.3, Table 5.4). Both pretest and posttest data were not consistent with the norm location directly on the Inherent axis but rather gave the painting high utilitarian value, therefore placing it in Quadrant C. This might have been because of the fact that 28 percent of the sample were interior design majors, a profession which often "uses" art as part of the decoration of a room.

Support for Hypothesis 2 was not attained since the change between pre- and posttest responses was not significant. The response to the object did not support Hypothesis 1 as stated though the distribution of the responses was consistent between pre- and posttests, and consistency occurred between author and majority of the panel.

Results for the paper holder (Plate 5.6) supported both hypotheses (Figure 5.4, Table 5.5). Consistency was obtained between author, panel, and posttest for locating the object directly on the Instrumental axis as a very useful object with the Inherent axis neither positive nor negative. Pretest results weighted most heavily (41%) in Quadrant B, changed significantly in posttest results with the largest percent (46%) consistent with the norm location directly on the axis. Chi-square statistic for the change between pre- and posttests was significant at the .05 level supportive of Hypothesis 2.



PLATE 5.4. --Object 4: Paper Holder

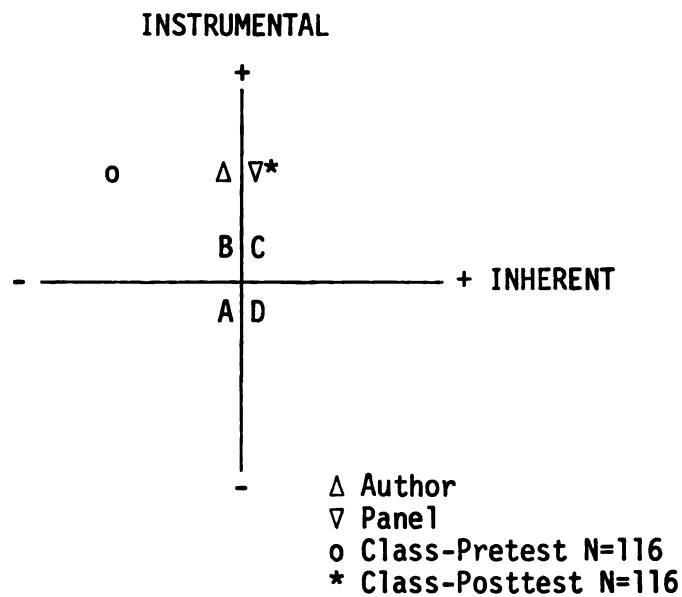


FIGURE 5.4.--Summary of Classification of Object Within Value Field: Paper Holder.

TABLE 5.5.--Distributions of Classifications of Four Evaluating Groups for Object: Paper Holder.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					9	7.8	5	4.3
AB					6	5.2	5	4.3
B					47	40.5	34	29.3
BC	1	100	4	100	36	31.0	53	45.7
C					10	8.6	10	8.6
CD								
D								
AD							1	.9
Origin					8	6.9	8	6.9
N	1	100	4	100	116	100.	116	100.

Support for both hypotheses was shown in the responses to Bridge 1 (Plate 5.7, Figure 5.5, Table 5.6). Complete consistency was obtained between author and panel identifying Quadrant C as the norm. Comparison of the degree of change between pre- and posttest against the norm gave a Chi-square significant at .01 level.

As stated in Chapter IV, to determine a measure of reliability for the empirical model, three of the objects were shown twice within the test and one object was shown three times. The four were shown alone the first time and the second time were shown simultaneously with a foil of a similar yet not identical object. The procedure was done to determine the reliability or strength of an individual's evaluations. Use of the comparison technique was intended to increase the observer's sensitivity to the characteristics of the object by presenting something with which to compare it. The technique was supported by the results. When the object, Bridge 1, was shown a second time with a similar, but not identical, object, Bridge 2, the classification of Bridge 1 remained in Quadrant C across the three evaluating groups; but the support for that classification increased. Comparison of Figures 5.6 and 5.7 demonstrates the change. The first showing of Bridge 1 in the pretest resulted in a frequency of 51 which increased to 61 when shown with the foil. Although not statistically significant, the same phenomenon occurred at posttest when the first showing frequency of 77 increased to 81 at the second showing. The results therefore give a very rough measurement of the reliability of evaluations made with the empirical test. The same classification of an object

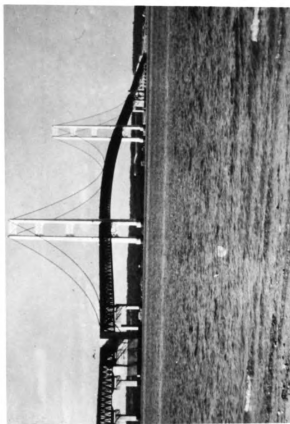


PLATE 5.5.--Object 5: Bridge 1

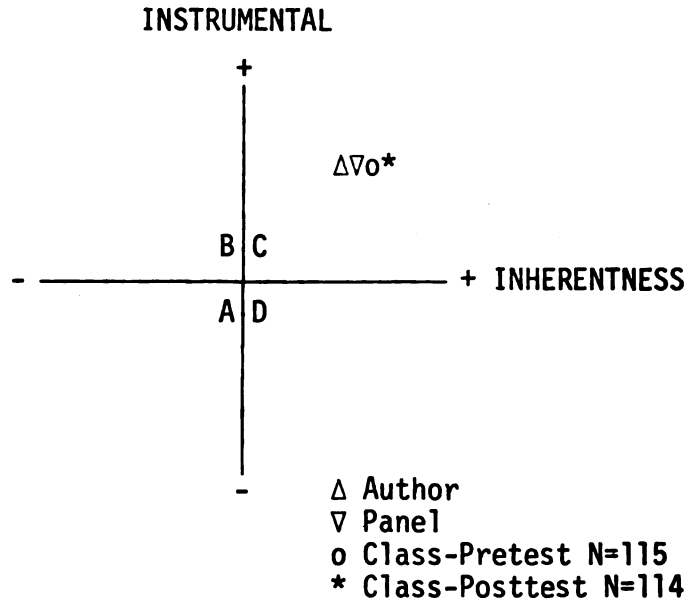


FIGURE 5.5.--Summary of Classification of Object Within Value Field: Bridge 1.

TABLE 5.6.--Distributions of Classifications of Four Evaluating Groups for Object: Bridge 1.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					2	1.7	2	1.7
AB					1	.9		
B					16	13.8	7	6.0
BC					40	34.5	26	22.4
C	1	100	4	100	51	44.0	77	66.4
CD					2	1.7		
D								
AD					1	.9	1	.9
Origin					2	1.7	1	.9
N	1	100	4	100	115	100	114	100

was repeated when the object was shown again within both a short period of time (during the same test) and over an extended period of time (the 13 week interval between pre- and posttests).

Analysis of the results of the second presentation of Bridge 1 alone (Figure 5.6, Table 5.7) again supported Hypotheses 1 and 2 with consistency among classifications of author, panel, pre-test and posttest and with respect to the degree of change between pretest and posttest significant at the .01 level.

When the results are arranged in order to assess classification of this object as familiarity with it increased, it is apparent from the following tabulation of frequencies that the greater the exposure to the object, the more consistent the classification became.

	Pretest First Showing	Pretest Second Showing	Posttest First Showing	Posttest Second Showing
Bridge 1	51	61	77	81

χ^2 is significant .001 level.

The second bridge (Plate 5.8) served as the foil for Bridge 1. Considering it as a separate object, results were supportive of Hypothesis 1 though not of Hypothesis 2 (Figure 5.7, Table 5.8). Consistency occurred across the four groups of author, panel, pre-test and posttest for location in Quadrant C. However, there was not significant change between pre- and posttests in order to support Hypothesis 2.

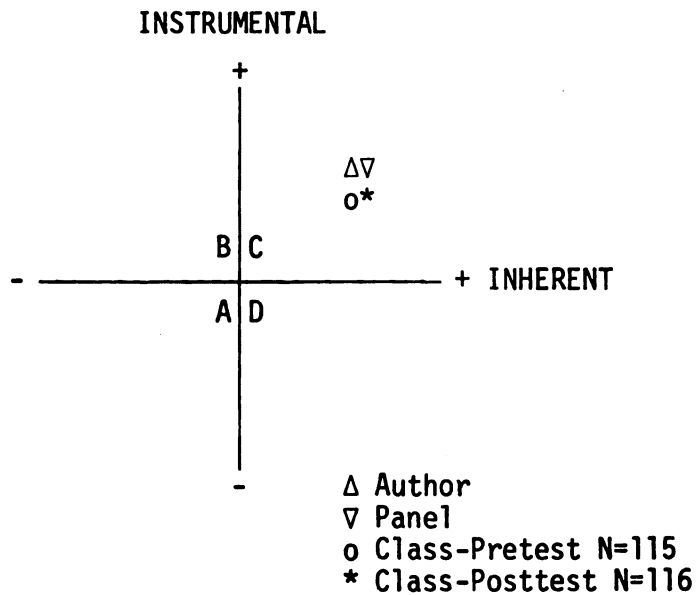


FIGURE 5.6.--Summary of Classification of Object Within Value
Field: Bridge 1--Second Presentation.

TABLE 5.7.--Distributions of Classifications of Four Evaluating
Groups for Object: Bridge 1--Second Presentation.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					3	2.6	2	1.7
AB							1	.9
B					11	9.5	12	10.3
BC					38	32.8	17	14.7
C	1	100	4	100	61	52.6	81	69.8
CD								
D								
A								
Origin					2	1.7	3	2.6
N	1	100	4	100	115	100	116	100



PLATE 5.6.--Object 6: Bridge 2

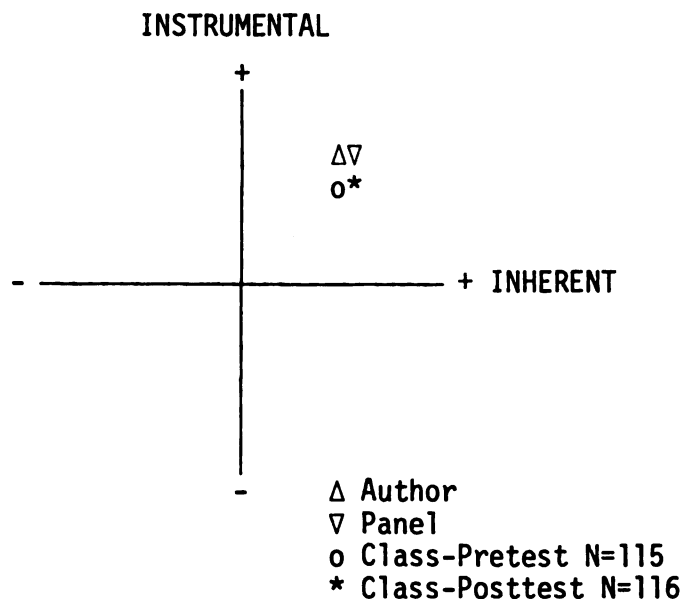


FIGURE 5.7.--Summary of Classification of Object Within Value Field: Bridge 2.

TABLE 5.8.--Distributions of Classifications of Four Evaluating Groups for Object: Bridge 2.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A								
AB							1	.9
B					11	9.5	19	16.4
BC					34	29.3	29	25.0
C	1	100	4	100	67	57.8	64	55.2
CD					1	.9		
D								
AD								
Origin					2	1.7	3	2.6
N	1	100	4	100	115	100	116	100

Results obtained for the first spoon (Plate 5.9) were supportive of both Hypothesis 1 and 2 (Figure 5.8, Table 5.9). Consistency was obtained between the author and panel for locating the object in Quadrant C as an Economy of Value object, establishing that quadrant as the norm. On the pretest the highest frequency (56) placed the object directly on the Instrumental axis having positive utilitarian but not positive aesthetic value. Classification of posttest shifted consistent with that of the author and panel in support of Hypothesis 1. As a result of the shift, Hypothesis 2 was also supported with a statistically significant change between pre- and posttests at .01 level.

The second presentation of Spoon 1 with a foil also produced positive results (Figure 5.9, Table 5.10) with consistency between the four groups for location within Quadrant C at both pre- and posttests. And change from pre- to posttest (Chi-square significant at .02) suggested again the influence of the foil on intensifying characteristics of the primary object.

The positive effect on consistency because of familiarity with the object was noted again as shown in the following tabulation of frequencies.

	Pretest First Showing	Pretest Second Showing	Posttest First Showing	Posttest Second Showing
Spoon 1	39	47	63	66

χ^2 significant .001 level.



PLATE 5.7.--Object 7: Spoon 1

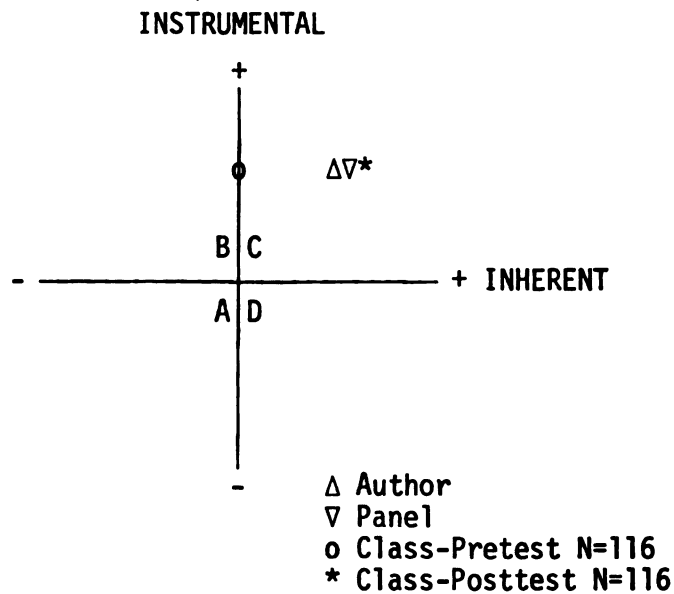


FIGURE 5.8.--Summary of Classification of Object Within Value
Field: Spoon 1.

TABLE 5.9.--Distributions of Classifications of Four Evaluating
Groups for Object: Spoon 1.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					2	1.7		
AB					3	2.6	2	1.7
B					14	12.1	10	8.6
BC					56	48.3	37	31.9
C	1	100	4	100	39	33.6	63	54.3
CD							1	.9
D							1	.9
AD								
Origin					2	1.7	2	1.7
N	1	100	4	100	116	100	116	100

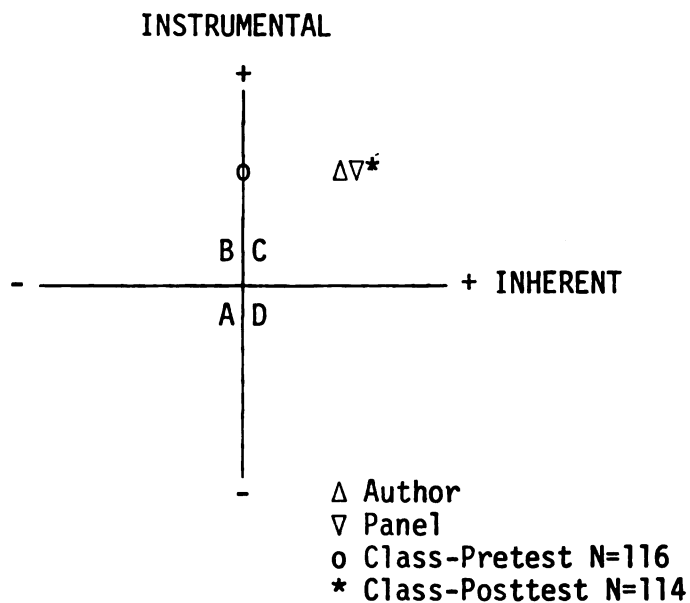


FIGURE 5.9.--Summary of Classification of Object Within Value
Field: Spoon 1--Second Presentation.

TABLE 5.10.--Distributions of Classifications of Four Evaluating
Groups for Object: Spoon 1--Second Presentation.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					2	1.7		
AB								
B					13	11.2	10	8.8
BC					52	44.8	37	32.5
C	1	100	4	100	47	40.5	66	57.9
CD								
D							1	.9
Ad								
Origin					2	1.7		
N	1	100	4	100	116	100	114	100

Results for the foil to Spoon 1 were not as clear. For Spoon 2 (Plate 5.10, Figure 5.10, Table 5.11) consistency among the panel and author was not complete with two members dissenting from the norm, Quadrant A. Class responses to the object were consistent with the norm at both pretest and posttest though the low percentages (39 and 41 respectively) reflected the basic ambiguity characteristic of the object. No change between pre- and posttest consistency was observed.

Complete consistency among the four groups was obtained for locating the first mailbox (Plate 11) directly on the Instrumental axis as an object valued highly for its usefulness rather than for its aesthetic qualities (Figure 5.11, Table 5.12). Therefore Hypothesis 1 was supported. Although change toward greater consistency occurred between pre- and posttests (frequencies of 55 and 62 respectively) the change was not statistically significant.

When shown a second time with a foil (Figure 5.12, Table 5.13) in order to determine reliability of the empirical model, consistency was maintained for all groups and the comparison technique again seemed to emphasize the object's characteristics since the frequency of the norm location response increased between the first and second showing (55 and 64 respectively). The positive effect on consistency of increased familiarity with the object over four showings was again evident as illustrated in the following tabulation.



PLATE 5.8.--Object 8: Spoon 2



Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	100	2	50	45	38.8	48	41.4
AB					5	4.3	7	6.0
B					10	8.6	13	11.2
BC								
C			1	25	14	12.1	10	8.6
CD					13	11.2	11	9.5
D			1	25	24	20.7	23	19.8
AD					3	2.6	1	.9
Origin					2	1.7	2	1.7
N	1	100	4	100	116	100	115	100



PLATE 5.9.--Object 9: Mailbox 1

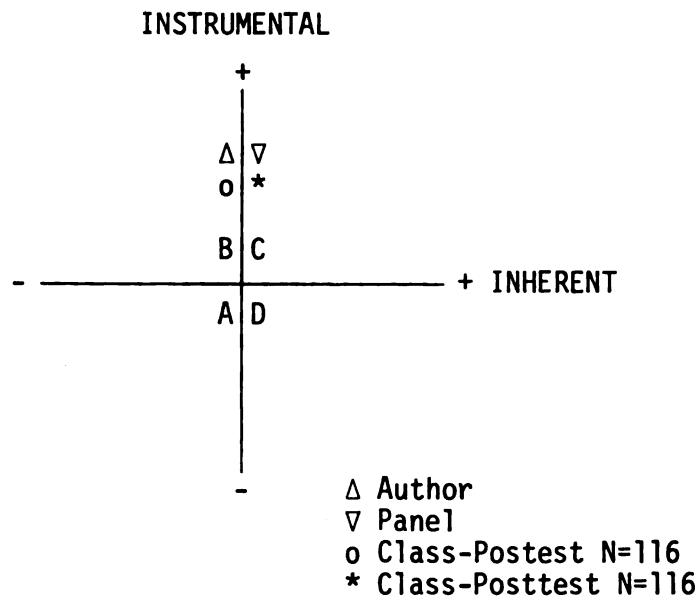


FIGURE 5.11.--Summary of Classification of Object Within Value Field: Mailbox 1.

TABLE 5.12.--Distributions of Classifications of Four Evaluating Groups for Object: Mailbox 1.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					2	1.7	2	1.7
AB					1	.9		
B					18	15.5	20	17.2
BC	1	100	4	100	55	47.4	62	53.4
C					36	31.0	27	23.3
CD					1	1.9		
D								
AD								
Origin					3	2.6	5	4.3
N	1	100	4	100	116	100	116	100

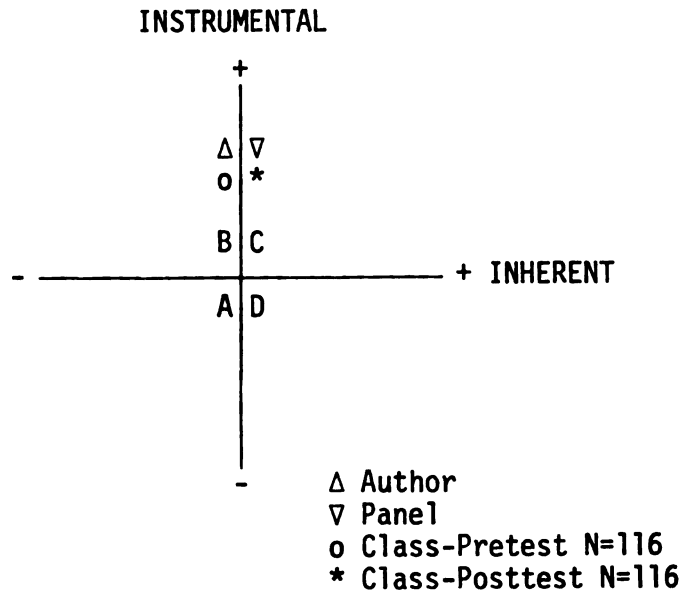


FIGURE 5.12.--Summary of Classification of Object Within Value
Field: Mailbox 1--Second Presentation.

TABLE 5.13.--Distributions of Classifications of Four Evaluating
Groups for Object: Mailbox 1--Second Presentation.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A							3	2.6
AB					1	.9	1	.9
B					14	12.1	8	6.9
BC	1	100	4	100	64	55.2	68	58.6
C					36	31.0	36	31.0
CD								
D								
AD								
Origin					1	.9		
N	1	100	4	100	116	100	116	100

	Pretest First Showing	Pretest Second Showing	Posttest First Showing	Posttest Second Showing
Mailbox 1	55	64	62	68

χ^2 significant at .04 level.

The second mailbox (Plate 5.12) served as the foil for Mailbox 1. Considering it as an object in its own right, it proved to be one of the ambiguous objects (Figure 5.13, Table 5.14). Low consistency was obtained among the evaluations of the panel, though there was some agreement for locating the norm for the object in Quadrant B as useful, but aesthetically negative. Both pretest and posttest placed the object within Quadrant C as having not only usefulness but a positive aesthetic dimension as well. This may be due as much to the current interest in antique American objects as much as it was a response to the object on formal aesthetic qualities. The object may therefore have had a confounding dimension which should have precluded its use in the empirical test at this time.

The chair (Plate 5.13) was selected because of the richness of its connotations including its statement as a gimmick, perhaps an erotic or sensual connotation, its witty play with the concept of "support," and its ambiguous nature as both sculpture and furniture. The complexity of the object was reflected in the responses to it. There was no consistency among the panel nor between the author and panel which precluded the setting of a norm for the object. And



PLATE 5.10.--Object 10: Mailbox 2

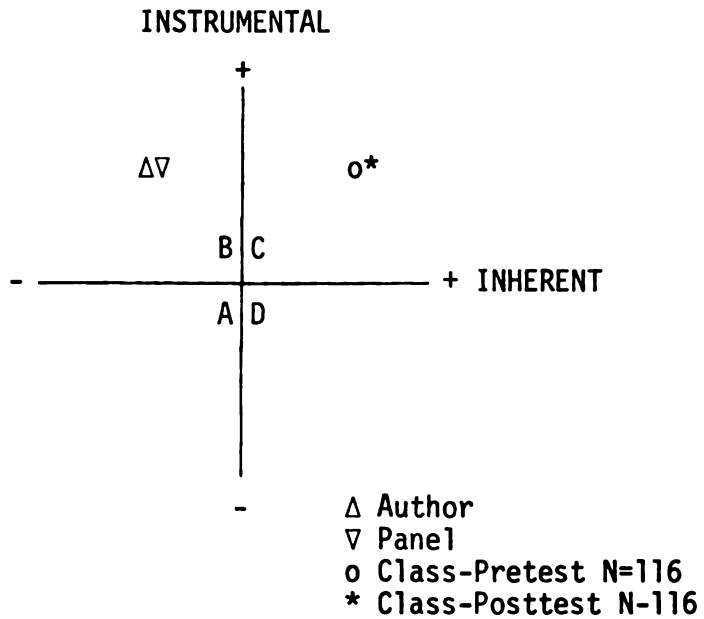


FIGURE 5.13.--Summary of Classification of Object Within Value Field: Mailbox 2.

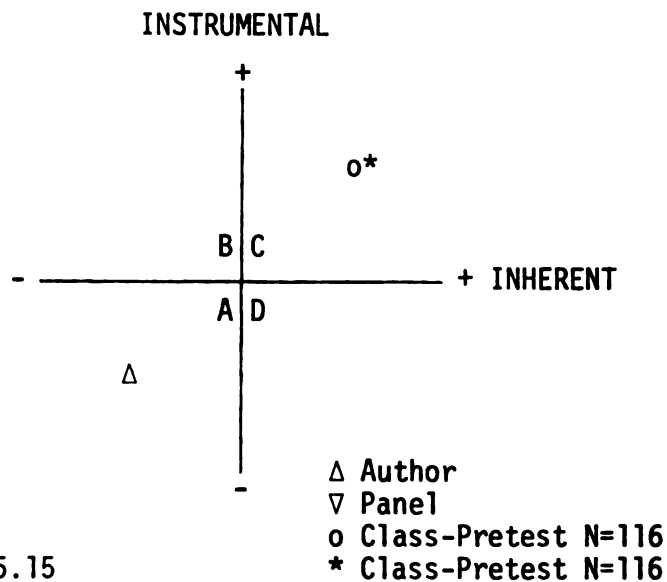
TABLE 5.14.--Distributions of Classifications of Four Evaluating Groups for Object: Mailbox 2.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					4	3.4	3	2.6
AB			1	25	2	1.7	1	.9
B	1	100	2	50	15	12.9	23	19.8
BC			1	25	23	19.8	20	17.2
C					69	59.5	67	57.8
CD					1	.9		
D								
AD							1	.9
Origin					2	1.7	1	.9
N	1	100	4	100	116	100	116	100



PLATE 5.11.--Object 11: Chair 1

there was no consistency between the two tests and the author. There was consistency between pre- and posttests for locating the object within Quadrant C though the percentages were not high in either case (50% and 49% respectively). For methodological purposes the object was shown three times: alone, and with two different foils. Again, the purpose was to determine whether the use of a foil served simply to emphasize and increase awareness of the original object's characteristics, or whether it forced a change in the classification. The chameleon-like quality of this object seemed to make it susceptible to outside influences when one tried to classify its value. The first foil was purposely selected to be an object which would be expected to consistently generate high classifications on both axes. In comparison with such a clearly and highly valued object, the evaluation of the original chair might have been expected to go down somewhat. The second foil was a third chair, ambiguous in nature like the first, particularly with respect to its instrumental value. In comparison with the original chair, little influence was expected to originate from this foil since both objects were quite similar with respect to the two value dimensions. Results presented in Figures 5.14, 5.15, 5.16, and Tables 5.15, 5.16, 5.17 showed that the foils did not change the classification of the first chair for either the panel or the class. As anticipated, the use of foils did not force a change in classification but only served to emphasize characteristics. The results therefore resolved a methodological concern though they did not

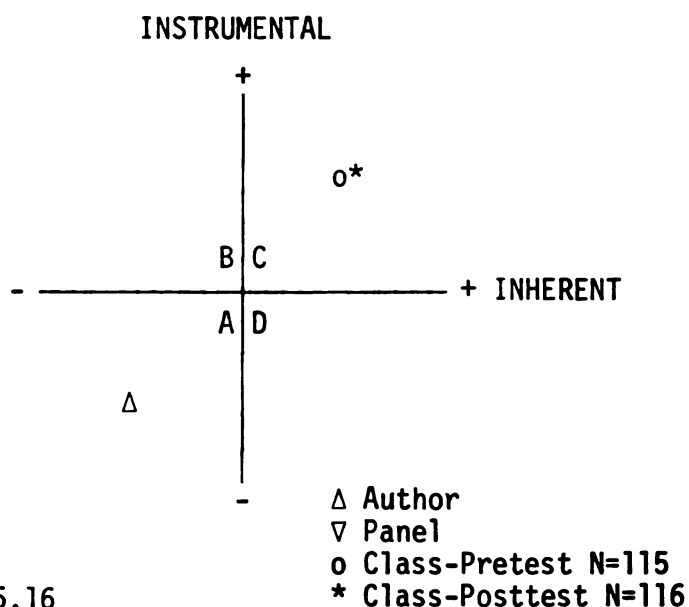


NOTE: ▽ See Table 5.15

FIGURE 5.14.--Summary of Classification of Object Within Value Field: Chair 1.

TABLE 5.15.--Distributions of Classifications of Four Evaluating Groups for Object: Chair 1.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	100			20	17.2	17	14.7
AB			1	25	11	9.5	7	6.0
B					12	10.3	11	9.5
BC			1	25				
C			1	25	58	50.0	57	49.1
CD					9	7.8	8	6.9
D			1	25	6	5.2	14	12.1
AD							1	.9
Origin							1	.9
N	1	100	4	100	116	100	116	100

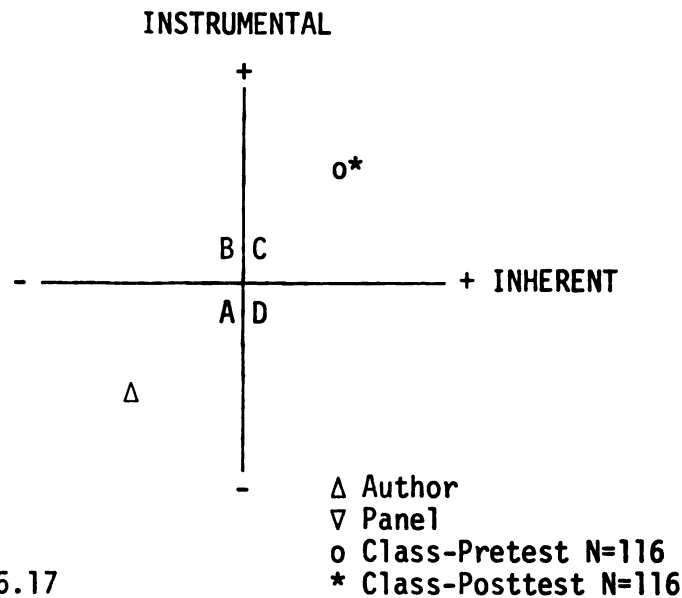


NOTE: ∇ See Table 5.16

FIGURE 5.15.--Summary of Classification of Object Within Value Field: Chair 1--Second Presentation.

TABLE 5.16.--Distributions of Classifications of Four Evaluating Groups for Object: Chair 1--Second Presentation.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	100			21	18.1	23	19.8
AB			1	25	7	6.0	2	1.7
B					12	10.3	13	11.2
BC			1	25	2	1.7	3	2.6
C			1	25	55	47.4	54	46.6
CD					7	6.0	7	6.0
D			1	25	9	7.8	12	10.3
AD					2	1.7	1	.9
Origin							1	.9
N	1	100	4	100	115	100	116	100



NOTE: ▽ See Table 5.17

FIGURE 5.16.--Summary of Classification of Object Within Value Field: Chair 1--Third Presentation.

TABLE 5.17.--Distributions of Classifications of Four Evaluating Groups for Object: Chair 1--Third Presentation.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	100			18	15.5	24	20.7
AB			1	25	4	3.4	6	5.2
B			1	25	15	12.9	5	4.3
BC			1	25	3	2.6	5	4.3
C					61	52.6	58	50.0
CD					6	5.2	2	1.7
D			1	25	7	6.0	12	10.3
AD					2	1.7	1	.9
Origin							3	2.6
N	1	100	4	100	116	100	116	100

support either of the two hypotheses since there was little consistency in the various responses (though in this case consistency was not anticipated) and there was no change between pre- and post-tests.

Support for both Hypotheses 1 and 2 was obtained from the results for the second chair (Plate 5.14, Figure 5.17, Table 5.18) which served as a foil for Chair 1. Consistency was obtained between the author and panel which established Quadrant C as the norm. Pretest consistency with the norm was low but increased considerably at the posttest. Change between pre- and posttests was statistically significant at the .001 level.

Like Chair 1, the ambiguity anticipated with respect to the third chair (Plate 5.15) object appeared in the results (Figure 5.18, Table 5.19). Consistency was not obtained either among members of the panel or between panel and author thus preventing a norm from being established. Distributions of classifications were widely spread across the Field at both pre- and posttest. Neither hypothesis was supported, though again, the object was selected for its ambiguity which was supported in the results.

Agreement with Hypotheses 1 and 2 for each of the objects is summarized in Table 5.20.

Results of Discrimination 3

The third discrimination was intended to test the evaluation of objects when the two value dimensions of instrumentality and inherentness were used simultaneously. Discrimination 2 had the

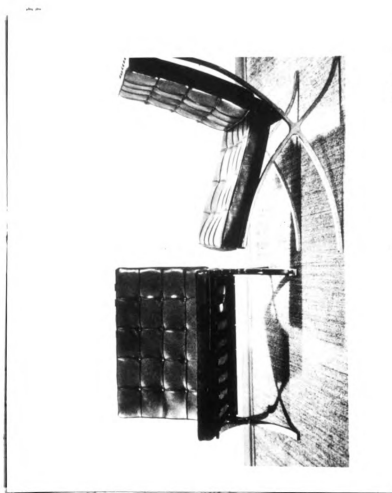


PLATE 5.12.--Object 12: Chair 2

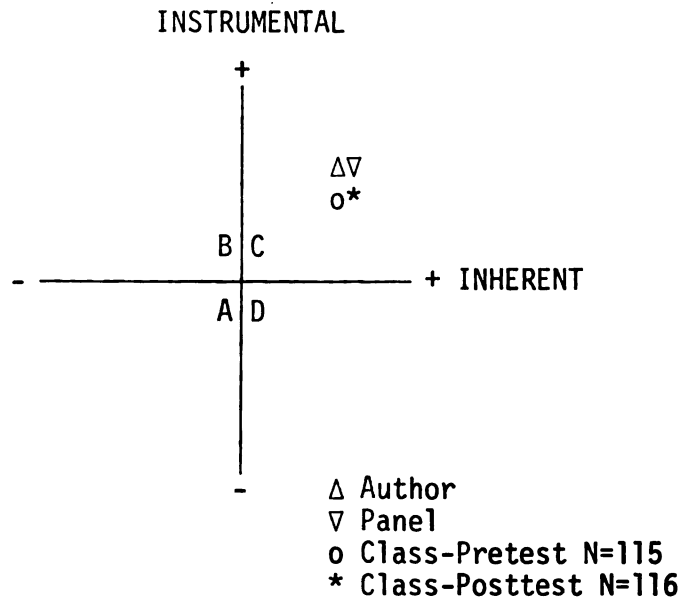


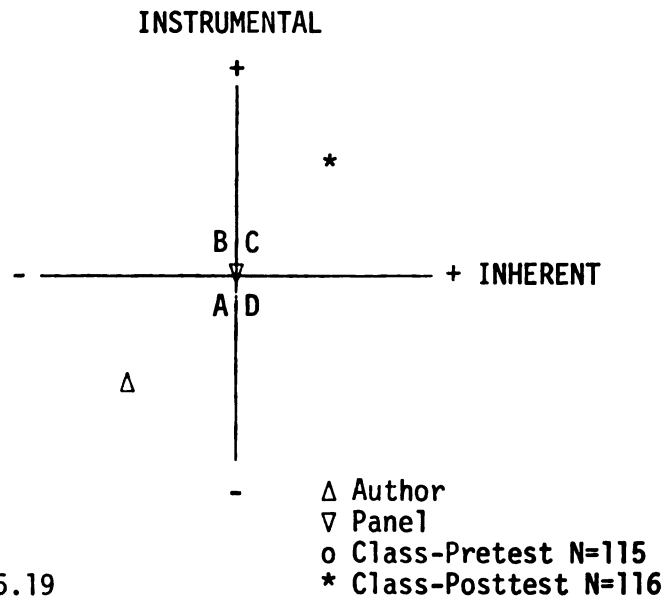
FIGURE 5.17.--Summary of Classification of Object Within Value
Field: Chair 2.

TABLE 5.18.--Distributions of Classifications of Four Evaluating
Groups for Object: Chair 2.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					9	7.8		
AB					5	4.3	1	.9
B					25	21.6	14	12.1
BC					35	30.2	31	26.7
C	1	100	4	100	37	31.9	66	56.9
CD							1	.9
D							1	.9
AD					2	1.7		
Origin					2	1.7	2	1.7
N					115	99.2	116	100



PLATE 5.13.--Object 13: Chair 3



NOTE: ○ See Table 5.19

FIGURE 5.18.--Summary of Classification of Object Within Value Field: Chair 3.

TABLE 5.19.--Distributions of Classifications of Four Evaluating Groups for Object: Chair 3.

Quadrant	Author		Panel		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	100			22	19.3	21	18.1
AB			1	25	17	14.9	13	11.2
B			1	25	22	19.3	21	18.1
BC					16	14.0	21	18.1
C					22	19.3	32	27.6
CD							2	1.7
D					7	6.1	5	4.3
AD					3	2.6		
Origin			2	50	5	4.4	1	.9
N	1	100	4	100	114	100	116	100

TABLE 5.20.--Summary of Agreement with Hypotheses 1 and 2 by Object.

Object	Agreement with Hypothesis 1	Agreement with Hypothesis 2
Quilt	Yes	Yes
Balcony	Yes	Not applicable
Painting	No	No
Paper holder	Yes	Yes
Bridge 1	Yes	Yes
Bridge 2	Yes	No
Spoon 1	Yes	Yes
Spoon 2	Yes	Yes
Mailbox 1	Yes	Yes
Mailbox 2	No	No
Chair 1	No	No
Chair 2	Yes	Yes
Chair 3	No	No

individual separate the two dimensions by providing two apparently independent continuums. However, the intent of the conceptual model was to look at the interaction of the two value dimensions within a given object. The Third Discrimination therefore asked the individual to simultaneously evaluate the presence or absence of positive inherent value--the object's visual form, and positive instrumental value--the object's function. Respondents were asked to read the statement, "The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution." When shown an object the respondent answered yes or no to whether the object illustrated the kind of

object described in the statement. Table 5.21 shows the high degree of agreement among pretest, posttest, panel, and author for this Discrimination which strongly supports the claim central to the study; that a consistent criterion was used to evaluate the relationship between an object's inherent and instrumental value, and that there were essentially similar interpretations of the concepts of inherent value and instrumental value across the group of respondents, the panel, and the author.

TABLE 5.21.--Crosstabulation of Results of Discrimination 3 by Evaluation Groups.

Object	Test Administration			
	Pretest	Posttest	Panel	Author
Bridge 1	Yes	Yes	Yes	Yes
Bridge 2	Yes	Yes	Yes	Yes
Spoon 1	Yes	Yes	Yes	Yes
Spoon 2	No	No	No	No
Mailbox 1	Yes	Yes	Yes	Yes
Mailbox 2	Yes	Yes	No	No
Chair 1	No	No	No	No
Chair 2	Yes	Yes	Yes	Yes
Chair 3	No	No	No	No

Results for Sample with High Aesthetic Value Score

Hypothesis 3 proposed that validity for the empirical model would be obtained if individuals who scored high on the aesthetic measure of the AVL values inventory showed greater consistency with

the norm responses than individuals with lower aesthetic value scores at both pretest and posttest. Tables 5.22-5.39 illustrate that the subsample with high aesthetic value did not display any greater consistency in classification on either the pre- or post-test than the remainder of the sample. Lack of evidence to support the hypothesis might have been because of the small number (11) in the subsample rather than to falseness of the hypothesis itself.

Summary Analyses on the Empirical Test

With a view toward developing at a future time the empirical model into a tested evaluation instrument for research purposes, several analyses were made.

A total score was developed for each individual from the total number of times the individual selected the norm response. Distributions of the total scores for pretest and posttest (Table 5.40) show an approximately normal character, slightly bimodal at the upper end in both cases. The definite shift in scores upward between pre- and posttests solidly supported Hypothesis 2, i.e., that the empirical model was capable of detecting change in performance after exposure to training in design analysis skills. The mean score moved upward from 7 to 9 points. A t-test for dependent samples¹ was applied and the difference between means from pretest to posttest was significant at the .001 level. The range of scores remained approximately the same (pretest = 10, posttest = 11) but the spread moved upward several points at

¹Glass and Stanley section 14.4 equation 14.5.

TABLE 5.22.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Quilt.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					2	1.9	1	1.0
AB					5	4.8	1	1.0
B	1	9.1			7	6.7	3	2.9
BC	1	9.1	1	9.1	9	8.7	9	8.7
C	8	72.7	10	90.0	71	68.3	88	84.6
CD	1	9.1			7	6.7	2	1.9
D					1	1.0		
AD					1	1.0		
Origin					1	1.0		
N	11	100	11	100	104	100	104	100

TABLE 5.23.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Balcony.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	8	72.7	9	81.8	83	79.0	80	76.2
AB	2	18.1	1	9.1	12	11.4	5	4.8
B					3	2.9	9	8.6
BC	1	9.1	1	9.1	1	1.0	2	1.9
C					1	1.0	2	1.9
CD							1	1.0
D							2	1.9
AD					3	2.9	3	2.9
Origin					2	1.9	1	1.0
N	11	100	11	100	105	100	105	100

TABLE 5.24.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Painting.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					1	.9	1	.9
AB							1	.9
B					2	1.9	1	.9
BC					2	1.9	1	.9
C	7	63.6	9	81.8	55	52.4	57	54.3
CD	3	27.3	2	18.1	30	28.6	34	32.4
D	1	9.1			3	2.9	7	6.7
AD					1	.9	1	.9
Origin					11	10.5	2	1.9
N	11	100	11	100	105	100	105	100

TABLE 5.25.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Paper Holder.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	9.1	1	9.1	8	7.6	4	3.8
AB	1	9.1	2	18.1	5	4.8	3	2.9
B	5	45.5	4	36.4	42	40	30	28.6
BC	3	27.3	3	27.3	33	31.4	50	47.6
C	1	9.1	1	9.1	9	8.6	9	8.6
CD								
D								
AD							1	.9
Origin					8	7.6	8	7.6
N	11	100	11	100	105	100	105	100

TABLE 5.26.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Bridge 1.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	9.1			1	1	2	1.9
AB					1	1		
B	1	9.1	1	9.1	15	14.4	6	5.8
BC	4	36.4	1	9.1	36	34.6	25	24.3
C	5	45.5	9	81.8	46	44.2	68	66.0
CD					2	1.9		
D								
AD					1	1	1	1
Origin					2	1.9	1	1
N	11	100	11	100	104	100	103	100

TABLE 5.27.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Bridge 1--Second Presentation.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	9.1			1	.9		
AB					3	2.9	2	1.9
B			1	9.1	14	13.3	9	8.6
BC	6	54.5	2	18.1	50	47.6	35	33.3
C	4	36.4	7	63.6	35	33.3	56	53.3
CD							1	.9
D							1	.9
AD								
Origin			1	9.1	2	1.9	1	.9
N	11	100	11	100	105	100	105	100

TABLE 5.28.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Bridge 2.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A								
AB							1	.9
B	1	9.1	2	18.1	10	9.6	17	16.2
BC	5	45.5	1	9.1	29	27.9	28	26.7
C	5	45.5	7	63.6	62	59.6	57	54.2
CD					1	1		
D								
AD								
Origin			1	9.1	2	1.9	2	1.9
N	11	100	11	100	104	100	105	100

TABLE 5.29.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Spoon 1.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					2	1.9		
AB					3	2.9	2	1.9
B			1	9.1	14	13.3	9	8.6
BC	2	27.3	2	18.1	53	50.5	35	33.3
C	8	72.7	8	72.7	31	29.5	55	52.3
CD							1	.9
D							1	.9
AD								
Origin					2	1.9	2	1.9
N	11	100	11	100	105	100	105	100

TABLE 5.30.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Spoon 1--Second Presentation.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					2	1.9		
AB								
B					13	12.4	10	9.7
BC	2	18.1	2	18.1	50	47.6	35	34.0
C	9	81.8	9	81.8	38	36.2	57	55.3
CD								
D							1	.9
AD					2	1.9		
Origin								
N	11	100	11	100	105	100	103	100

TABLE 5.31.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Spoon 2.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	2	18.1	2	18.1	43	41.0	46	44.2
AB	1	9.1	1	9.1	4	3.8	6	5.8
B	2	18.1	3	27.3	8	7.6	10	9.6
BC								
C	2	18.1	2	18.1	12	11.4	8	7.7
CD			1	9.1	13	12.4	10	9.6
D	3	27.3	2	18.1	21	20	21	20.2
AD	1	9.1			2	1.9	1	1.0
Origin					2	1.9	2	1.9
N	11	100	11	100	105	100	104	100

TABLE 5.32.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Mailbox 1.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A					2	1.9	2	1.9
AB	1	9.1						
B	1	9.1	1	9.1	17	16.2	19	18.1
BC	4	36.4	6	54.5	51	48.6	56	53.3
C	5	45.5	3	27.3	31	29.5	24	22.9
CD					1	1.0		1.0
D								
AD								
Origin			1	9.1	3	2.9	4	3.8
N	11	100	11	100	105	100	105	100

TABLE 5.33.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Mailbox 1--Second Presentation.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A							3	2.9
AB					1	1.0	1	1.0
B			1	1.9	14	13.3	7	6.7
BC	7	63.6	5	45.5	57	54.3	63	60.0
C	4	36.4	5	45.5	32	30.5	31	29.5
CD								
D								
AD								
Origin					1	1.0		
N	11	100	11	100	105	100	105	100

TABLE 5.34.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Mailbox 2.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	9.1	1	9.1	3	2.9	2	1.9
AB					2	1.9	1	1.0
B	2	18.1	2	18.1	13	12.4	21	20.0
BC			3	27.3	23	21.9	17	16.2
C	8	72.7	5	45.5	61	58.1	62	59.0
CD					1	1.0		
D								
AD							1	1.0
Origin					2	1.9	1	1.0
N	11	100	11	100	105	100	105	100

TABLE 5.35.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Chair 1.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	9.1	2	18.1	19	18.1	15	14.3
AB	1	9.1			10	9.5	7	6.6
B	2	18.1	2	18.1	10	9.5	9	8.6
BC								
C	6	54.5	6	54.5	52	49.5	51	48.6
CD	1	9.1	1	9.1	8	7.6	7	6.6
D					6	5.7	14	13.3
AD							1	1.0
Origin							1	1.0
N	11	100	11	100	105	100	105	100

TABLE 5.36.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Chair 1--Second Presentation.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	9.1	3	27.3	20	19.2	20	19.0
AB	1	9.1			6	5.8	2	1.9
B			2	18.1	12	11.5	11	10.5
BC	2	18.1					3	2.9
C	5	45.5	6	54.5	50	48.1	48	45.7
CD					7	6.7	7	6.7
D	2	18.1			7	6.7	12	11.4
AD					2	1.9	1	1.0
Origin							1	1.0
N	11	100	11	100	104	100	105	100

TABLE 5.37.--Crosstabulation of Classification by Aesthetic Value Orientation and Test Administration: Chair 1--Third Presentation.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	9.1	3	27.3	17	16.2	21	20.0
AB			1	9.1	4	3.8	5	4.8
B	2	18.1	1	9.1	13	12.4	4	3.8
BC	1	9.1			2	1.9	5	4.8
C	7	63.6	5	45.5	54	51.4	53	50.5
CD					6	5.7	2	1.9
D			1	9.1	7	6.7	11	10.5
AD					2	1.9	1	1.0
Origin							3	2.9
N	11	100	11	100	105	100	105	100

TABLE 5.38.--Crosstabulation of Classification by Aesthetic Value
Orientation and Test Administration: Chair 2.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	9.1			8	7.7		
AB					5	4.8	1	1.0
B	4	36.4	3	27.3	21	20.2	11	10.5
BC	3	27.3	3	27.3	32	30.8	28	26.7
C	3	27.3	5	45.5	34	32.7	61	58.1
CD							1	1.0
D							1	1.0
AD					2	1.9		
Origin					2	1.9	2	1.9
N	11	100	11	100	104	100	105	100

TABLE 5.39.--Crosstabulation of Classification by Aesthetic Value
Orientation and Test Administration: Chair 3.

Quadrant	High				Not High			
	Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%
A	1	9.1	1	9.1	21	20.4	20	19.0
AB	1	9.1	2	18.1	16	15.5	11	10.5
B	4	36.4	4	36.4	18	17.5	17	16.2
BC	2	18.1	2	18.1	14	13.6	19	18.1
C	1	9.1	1	9.1	21	20.4	31	29.5
CD							2	1.9
D	1	9.1	1	9.1	6	5.8	4	3.8
AD					3	2.9		
Origin	1	9.1			4	3.9	1	1.0
N	11	100	11	100	103	100	105	100

TABLE 5.40.--Frequency Distribution of Total Score at Pretest and Posttest.

Total Score	Pretest	Posttest
18		
17		
16		2
15		2
14		4
13	3	1
12	3	14
11	3	11
10	14	12
9	14	24*
8	18	18
7	20*	17
6	16	5
5	17	6
4	7	
3	1	
2		
1		

*Mean Score. T statistic for difference between mean scores was significant at .001 level ($t = 7.094$).

posttest (range at pretest = 3-13, range at posttest 5-16). This documented that as was expected, students performed better on the test after exposure to training. The approximately normal shape and consistency of the distributions across time also suggested that the construct presented in the conceptual model does exist. The results again suggested that the empirical test with its underlying conceptual framework elicited consistent responses which implied consistency of meaning for these concepts across at least these three groups of individuals.

The validity of the conceptual model was also investigated using an analysis of variance statistical technique. A two-way analysis of variance model was implemented with test items and subjects as the two factors. The F-value for between item variation was significant at the .001 level for both pretest and posttest scores meaning that the items (the objects) were discrete; that individual variation was noted across items. This appeared to suggest that changing the objects would significantly change the scores of respondents. The result showed that the items are not interchangeable but rather that each makes a unique contribution within the test. According to this finding, substitution of the Washington Bridge for the Mackinac Bridge would elicit different responses thus having an affect on the total score; a finding one would hope to obtain when the research involved aesthetic discriminations.

A second finding of the two-way analysis of variance test was particularly critical toward evaluating the power of the

empirical test. Variation because of potential interaction between certain objects and certain subgroups of respondents was not present. F-values for interaction effects were .22 for pretest and .18 for posttest. These nonsignificant F-statistics were interpreted to mean that there was no interaction between items and subjects. Rather, a consistency in the way all individuals responded to the items was evidenced. Such consistency or pattern to the responses implied that there was a definite construct or set of criteria which individuals used to assign value when confronted with an object. Responses were not at all random, nor were responses systematically different for subsets of subjects which would be the case if there had not been a common underlying construct or if the construct had been conceived quite differently by different individuals.

Summary of Results

Results obtained from empirical testing of the conceptual model were favorable. Agreement was found for two hypotheses: there was consistency among the classifications made by the four evaluating groups and the empirical test was capable of detecting change in valuing behavior across an interval of time. The third hypothesis that individuals with high aesthetic value would generally show greater consistency than others remained unanswered, because in part to an insufficient sample size.

It is important to note that for all measurements and at all decision points the most rigorous of the alternatives available was chosen in order to attain the greatest exactness possible in a

content area which is generally thought to have a high degree of ambiguity. It was felt that if the results could meet the most exacting criteria which could be identified as appropriate for evaluating the conceptual construct, then the conclusion that the conceptual model represented an existing construct would be more readily accepted. The results met the rigorous criteria suggesting that indeed there was an underlying construct with respect to object value which was used in a similar manner by this group of individuals. The results supported the formulation of that object value construct in accordance with the conceptual model presented in Chapter III.

CHAPTER VI

CONCLUSIONS, LIMITATIONS, AND IMPLICATIONS

The present chapter will look at the study in retrospect. A problem was identified, a conceptual model presented to respond to the problem, an attempt was made to validate the model, and now an evaluation of the undertaking will be made.

Conclusions of the Study

The underlying question throughout was whether the conceptual model developed actually represented an existing construct which is unconsciously used by individuals which the conceptual model identified on the conscious level. The results of the validation, in both a statistical sense and a logical sense, suggested that the conceptual model does reflect a conceptual construct held in common by at least the group of individuals sampled: a group which included individuals particularly sensitive to the issues under investigation. Statistical support for accepting the model as a representation of an existing construct was obtained by confirming that individuals did respond in a patterned predictable manner to the empirical model, suggesting that they had used some criteria in common in making their evaluations. Evidence that the dimensions described in the conceptual model were the criteria the individuals were using came with

the upward change in total scores after individuals were given training directly related to using the two criteria or dimensions of the conceptual model. Tangible support for the existence of the conceptual framework was also provided by the consistency of the responses across several different groups and across an interval of time.

Logical support for the existence of the conceptual framework came particularly from the fact that a quite diverse panel of professionals were also quite consistent in the manner in which they used the empirical model. They presumably use the conceptual construct under investigation in their professional work and presumably have thought through the issues involved.

Perhaps a more subtle kind of support for the logic of the proposed conceptual model was the fact that having presented the idea to many individuals informally and formally over the course of two years, the model itself was never seriously questioned once an individual understood how to interpret the graphic representation. The questions were raised a step beyond the model itself with respect to creating an empirical form which could adequately test the conceptual model. The model itself seemed to be something many individuals had thought about in much the same way but had not set forth precisely, another reason to believe the model represents an existing conceptual construct.

The most difficult problem encountered with respect to the model was to prevent it from being used as an arbitrator of object value: as a tool for judging object value. For example, when an

object is located consistently in a quadrant by many people that does not mean that any individual who does not locate the object in that quadrant is incorrect in his value assessment. Consistent location of an object in a quadrant means only that there is evidence that many individuals value it in the same way; that there is shared meaning with respect to the value of that object. Interpretation of the value of an object which does not generate a consistent location on the model means simply that the value of that object is very different for different individuals. Therefore, when we talk about the object it would be advantageous to identify for others how we value it, on what dimensions, because they may be valuing it quite differently for quite different reasons. The model only identifies whether there is or is not shared meaning with respect to the basis on which value is assigned to that object. Different people may perceive its value very differently. The advantage of the model is that it is capable of assessing when there is and when there is not shared meaning with respect to the value of an object.

Limitations of the Study

It must be stressed that the empirical model is not a tested evaluation instrument ready for value research. The empirical model was developed strictly in order to evaluate the validity of the conceptual model. Although it is evident from preliminary analyses on the empirical model itself that it does have potential for future development into an evaluation instrument for value research, it

would first need to be analyzed with respect to reliability, validity, and the sampling of items.

A second limitation results from the sample used in the study. The student sample was not a statistically random sample, but rather was selected because it had two characteristics necessary to the research design: it could be presumed to contain a subsample of individuals with a high aesthetic value orientation, and the introduction of that particular course content was necessary to the research design. As a result the findings cannot be generalized to a larger population. The results only establish validity for the conceptual model.

A third caution concerns value research generally, and research in aesthetic value in particular. Individuals often feel a strong reluctance to express an aesthetic evaluation if it differs markedly from that which is considered to be socially acceptable. ✓ The class was informed at both test administrations that the empirical model was not testing for correct or incorrect evaluations of the objects. However, the results may be biased to an unknown degree because of the problem of individuals responding what they assume to be the socially correct response rather than their own.

A fourth limitation may be due to the effect of the research situation itself on value decisions. Because the valuing process involves both cognitive and affective dimensions there is the possibility that under the scrutiny of controlled research conditions, ✓ the spontaneous affective, appreciative quality of the aesthetic

valuing process may turn into a mechanically performed and purely cognitive decision.

Implications for the Study

This study is only the most basic groundwork for a comprehensive understanding of object value. However, it does make a definite contribution to that goal.

Perhaps the most valuable outcome for applied research is that the empirical model provides the first step toward an instrument sensitive to dimensions of object value. With a tested evaluation instrument questions such as the relationship between valuing behavior with respect to objects and different personality characteristics or socialization differences, or environmental conditions and situations, could be investigated. ✓

The empirical model, as it is without further testing, can serve as a very useful discussion tool for value clarification and the teaching of value with respect to objects. It is particularly useful because it provides categories or criteria for evaluation of objects and a set of relationships among those criteria which are less subjective than the traditional like-dislike categorization. On the other hand, it is a more subjective categorization than purely formal design evaluation which uses categories or criteria such as proportion, balance, and unity.

The conceptual framework might be developed further in order to understand how value is assigned when objects are presented in groups. The objects used in the present study were presented to the

respondent alone or with only one other object which had several characteristics in common with it. When objects are perceived in the environment, however, they are generally only part of a total gestalt and there may be a definite effect on the valuing process as a function of an increase in the number of objects or the complexity of individual objects.

At the present time the conceptual model does not discriminate subtle variations existing within either the Instrumental or Inherent dimensions. However, as we begin to expect greater satisfaction from the objects within our immediate environment subtle distinctions such as these will have to be made and perhaps the present conceptual model can be refined to accommodate more sensitive distinctions. For example, given the same house, two families may both value it highly Instrumentally. However, for one family its Instrumentality is due to the house's ability to provide shelter. To the second family the Instrumental value of the house exists not simply for its ability to provide shelter, but also for its ability to communicate something of the family's social status and position within the community. At different times priority may be placed on one or the other dimensions within the broader dimension of Instrumentality. This suggests further development of the conceptual framework itself.

From an economic perspective the model provides a way of assessing the relationship between value and investment of materials. For example, the greatest amount of value per object is obtained

from Economy of Value objects because they are valued on two dimensions simultaneously. In contrast, Quadrant A objects provide the least amount of value per object since they are not valued on either dimension. If the value position taken for the study as a whole is correct--that with increasingly scarce resources those remaining will have to be used more efficiently--the model provides a way of analyzing where trade-offs among objects might be made in order to use resources more effectively. For example, it might be more efficient to redesign some of the Quadrant B objects to be not only useful, but also visually satisfying, thus permitting them to function on two levels as Economy of Value Objects. The shortage of resources would probably suggest eliminating Quadrant A objects as much as possible by recycling that material into objects with positive value on one or both of the dimensions identified. The model is particularly suited for such an analysis because it represents the total field of all objects in the environment from art to junk to industrial machinery.

The several implications suggested for the model are all attempts to better understand the interdependence between an individual and the things which surround and express the individual. The interface between man and his material environment is an integral aspect of daily life and yet we have few theories to understand it on a concrete basis. The primary contribution of this study is that it may help to move closer to a better understanding of that interface.

APPENDICES

APPENDIX A
EMPIRICAL TEST
VERSION 1

Booklet Number _____

You will be shown a series of slides of objects and will be asked to make several discriminations on each. The discriminations are independent of each other. They represent separate ways of evaluating a given object from different perspectives.

Part I

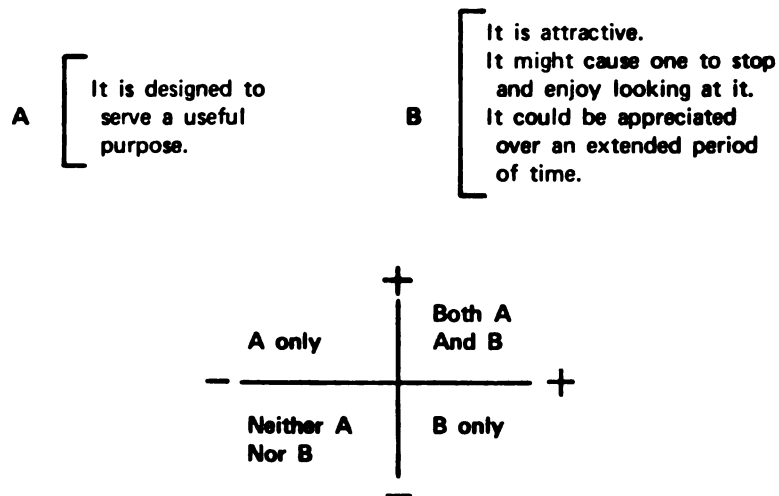
DISCRIMINATION I (Is concerned with the satisfaction of the observer produced by the object)

Directions: What is your immediate reaction to this object? Check the response which most closely matches your reaction.

I like it.	I am	I dislike it.
_____	indifferent to it.	_____
_____	_____	_____

DISCRIMINATION II (Is concerned with properties of the object)

Directions: With an X place this object in one of the four fields of the model below according to the following criteria:



To the right of your response describe briefly why you located the object in that particular field.

For the object shown in each slide make the following two discriminations:

1. EVALUATE THE BEDSPREAD

DISCRIMINATION I

I like it.

I am
indifferent to it.

I dislike it.

DISCRIMINATION II

A only _____	Both A and B _____
Neither A nor B _____	B only _____

Why? _____

2. EVALUATE THE RUG

DISCRIMINATION I

I like it.

I am
indifferent to it.

I dislike it.

DISCRIMINATION II

A only _____	Both A and B _____
Neither A nor B _____	B only _____

Why? _____

3. EVALUATE THE BRIDGE

DISCRIMINATION II like it.
_____I am
indifferent to it.
_____I dislike it.
_____**DISCRIMINATION II**

A only _____	Both A and B _____
Neither A nor B _____	B only _____

Why? _____

4. EVALUATE THE BALCONY

DISCRIMINATION II like it.
_____I am
indifferent to it.
_____I dislike it.
_____**DISCRIMINATION II**

A only _____	Both A and B _____
Neither A nor B _____	B only _____

Why? _____

5. EVALUATE THE CLOTHING OF THE HORSEMAN

DISCRIMINATION I I like it. I am indifferent to it. I dislike it.

_____ _____ _____

DISCRIMINATION II

A only _____	Both A and B _____	Why? _____ _____ _____ _____
Neither A nor B _____	B only _____	

6. EVALUATE THE URBAN ENVIRONMENT

DISCRIMINATION I I like it. I am indifferent to it. I dislike it.

_____ _____ _____

DISCRIMINATION II

A only _____	Both A and B _____	Why? _____ _____ _____ _____
Neither A nor B _____	B only _____	

7. EVALUATE THE MAILBOX

DISCRIMINATION II like it.
_____I am
indifferent to it.
_____I dislike it.
_____**DISCRIMINATION II**

A only _____	Both A and B _____
Neither A nor B _____	B only _____

Why? _____

8. EVALUATE THE TOILET PAPER HOLDER

DISCRIMINATION II like it.
_____I am
indifferent to it.
_____I dislike it.
_____**DISCRIMINATION II**

A only _____	Both A and B _____
Neither A nor B _____	B only _____

Why? _____

9. EVALUATE THE CHAIRS

DISCRIMINATION II like it.
_____I am
indifferent to it.
_____I dislike it.
_____**DISCRIMINATION II**A only

_____Both A
and B

_____Neither A
nor B

_____B only

Why? _____

10. EVALUATE THE PAINTING

DISCRIMINATION II like it.
_____I am
indifferent to it.
_____I dislike it.
_____**DISCRIMINATION II**A only

_____Both A
and B

_____Neither A
nor B

_____B only

Why? _____

11. EVALUATE THE SPOON

DISCRIMINATION II like it.
_____I am
indifferent to it.
_____I dislike it.
_____**DISCRIMINATION II**A only

_____Both A
and B

_____Neither A
nor B

_____B only

Why? _____

Part II

For both slides of each comparison make the following 3 discriminations:

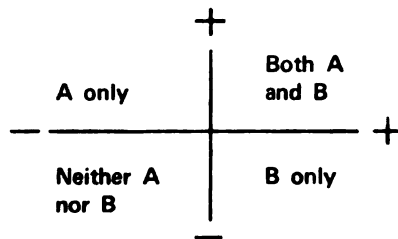
DISCRIMINATION I

Directions: What is your immediate reaction to this object?

I like it. I am I dislike it.
 _____ indifferent to it. _____

DISCRIMINATION II

Directions: With an X place this object in one of the four fields of the model below according to the same criteria used in Part I given on page 1.

**DISCRIMINATION III**

Directions: Read the group of statements on the following page. Does the object in each slide illustrate visually the kind of object the authors are describing? Circle

Yes it illustrates the kind of object being discussed.

or

No it does not illustrate the kind of object being discussed.

STATEMENTS

Author 1 The Balinese say: We like to do all things beautifully.

Author 2 Instead of camouflaging a building by a shell of sculpture, the endeavor of an architect and his clients must indeed start with a commitment to the purpose of the building—but not just as a useful object, nor just as an object whose usefulness deserves to be shown, but as an object whose function translated into a corresponding pattern of visible behavior will enhance the spirit of our existence and conduct as human beings.

Author 3 If you will trace the ship through its various stages of improvements, from the dugout canoe and the old galley to the later type of sloop-of-war, you will remark that every advance in performance has been an advance in expression, in grace, in beauty, or grandeur, according to the functions of the craft.

Author 4 The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to declare, to proclaim itself as a perfect solution.

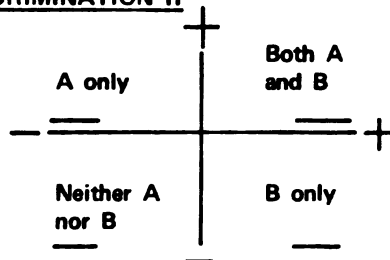
12. COMPARISON OF CHAIRS

Left Slide

DISCRIMINATION I

Like Indifferent Dislike

— — —

DISCRIMINATION II

Why? _____

DISCRIMINATION III

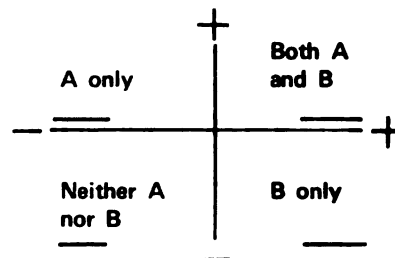
Yes it illustrates the kind of object discussed

No it does not illustrate the kind of object discussed

Right Slide

Like Indifferent Dislike

— — —



Why? _____

Yes it illustrates the kind of object discussed

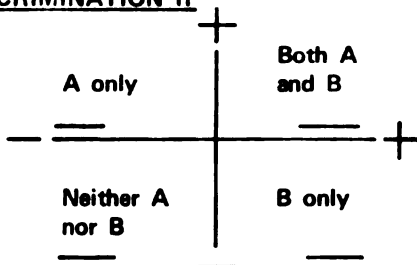
No it does not illustrate the kind of object discussed

13. COMPARISON OF BRIDGES

Left Slide

DISCRIMINATION I

Like	Indifferent	Dislike
—	—	—

DISCRIMINATION II

Why? _____

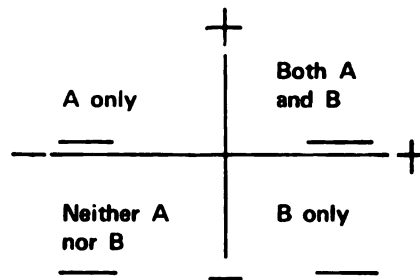
DISCRIMINATION III

Yes it illustrates the kind of object discussed

No it does not illustrate the kind of object discussed

Right Slide

Like	Indifferent	Dislike
—	—	—



Why? _____

Yes it illustrates the kind of object discussed

No it does not illustrate the kind of object discussed

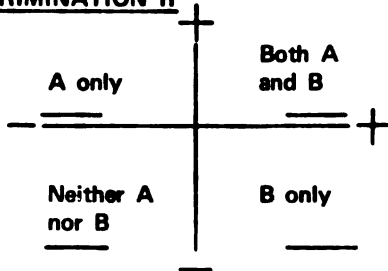
14. COMPARISON OF MAILBOXES

Left Slide

Right Slide

DISCRIMINATION I

Like	Indifferent	Dislike
—	—	—

DISCRIMINATION II

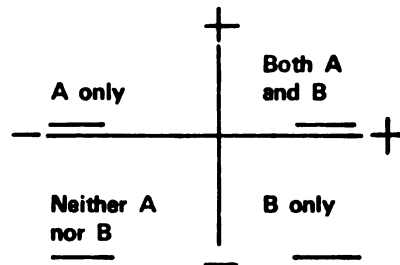
Why? _____

DISCRIMINATION III

Yes it illustrates the kind of object discussed

No it does not illustrate the kind of object discussed

Like	Indifferent	Dislike
—	—	—



Why? _____

Yes it illustrates the kind of object discussed

No it does not illustrate the kind of object discussed

15. COMPARISON OF CHAIRS

Left Slide

DISCRIMINATION I

Like	Indifferent	Dislike
—	—	—

DISCRIMINATION II

	+	
A only		Both A and B
—		+
Neither A nor B		B only
—		—

Why? _____

DISCRIMINATION III

Yes it illustrates the kind of object discussed

No it does not illustrate the kind of object discussed

Right Slide

Like	Indifferent	Dislike
—	—	—

	+	
A only		Both A and B
—		+
Neither A nor B		B only
—		—

Why? _____

Yes it illustrates the kind of object discussed

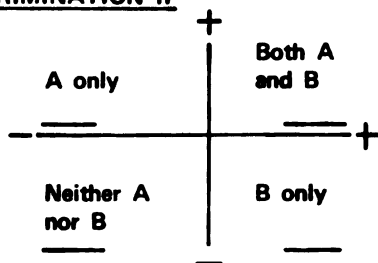
No it does not illustrate the kind of object discussed

16. COMPARISON OF URBAN ENVIRONMENTS

Left Slide

DISCRIMINATION I

Like	Indifferent	Dislike
—	—	—

DISCRIMINATION II

Why? _____

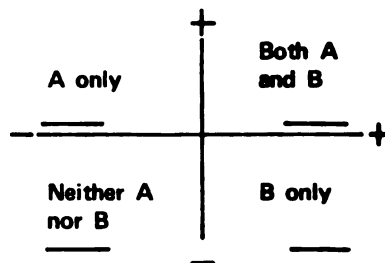
DISCRIMINATION III

Yes it illustrates the kind of object discussed

No it does not illustrate the kind of object discussed

Right Slide

Like	Indifferent	Dislike
—	—	—



Why? _____

Yes it illustrates the kind of object discussed

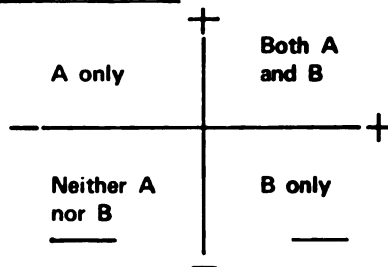
No it does not illustrate the kind of object discussed

17. COMPARISON OF BRIDGES

Left Slide

DISCRIMINATION I

Like	Indifferent	Dislike
—	—	—

DISCRIMINATION II

Why? _____

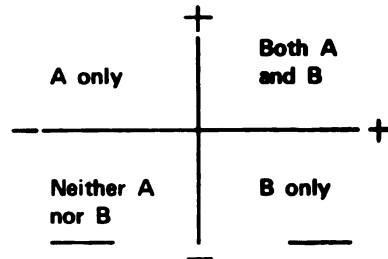
DISCRIMINATION III

Yes it illustrates the kind of object
 discussed

No it does not illustrate the kind
 of object discussed

Right Slide

Like	Indifferent	Dislike
—	—	—



Why? _____

Yes it illustrates the kind of object
 discussed

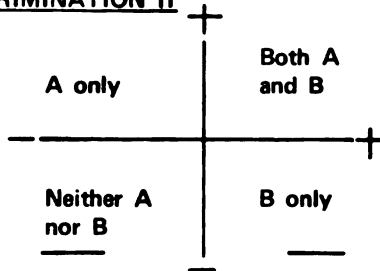
No it does not illustrate the kind
 of object discussed

18. COMPARISON OF SPOONS

Left Slide

DISCRIMINATION I

Like	Indifferent	Dislike
—	—	—

DISCRIMINATION II

Why? _____

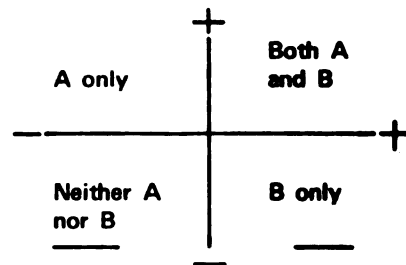
DISCRIMINATION III

Yes it illustrates the kind of object
discussed

No it does not illustrate the kind
of object discussed

Right Slide

Like	Indifferent	Dislike
—	—	—



Why? _____

Yes it illustrates the kind of object
discussed

No it does not illustrate the kind
of object discussed

APPENDIX B
EMPIRICAL TEST
VERSION 2

Name _____

Booklet Number _____

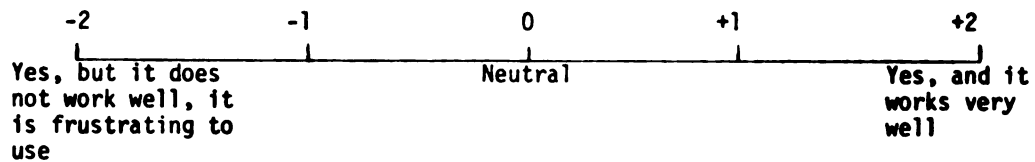
You will be shown a series of slides of objects and will be asked to make several evaluations on each. The evaluations are independent of each other. They represent separate ways of classifying a given object from different perspectives. Answer Item 1 with an X, and circle the number (+1) on Items 2 and 3.

EVALUATE THE QUILT

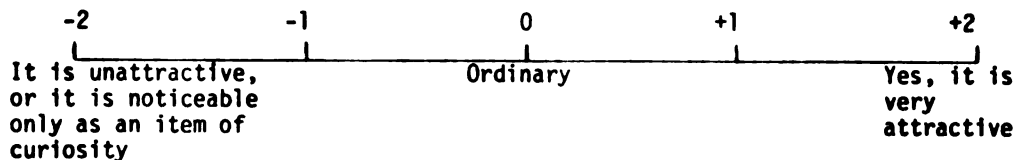
1. What is your immediate reaction to this object?

_____ I like it. _____ I am indifferent to it. _____ I dislike it.

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.

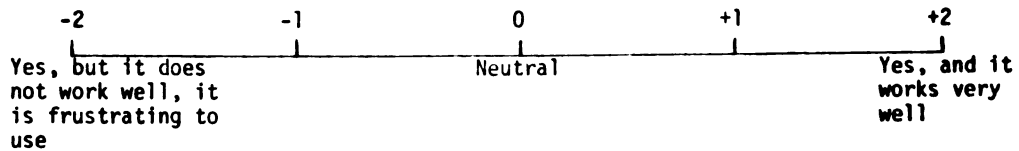


EVALUATE THE BRIDGE

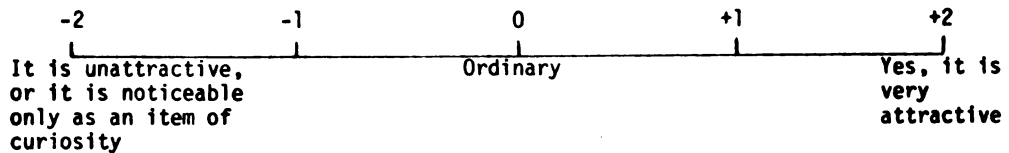
1. What is your immediate reaction to this object?

_____ I like it. _____ I am indifferent to it. _____ I dislike it.

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.

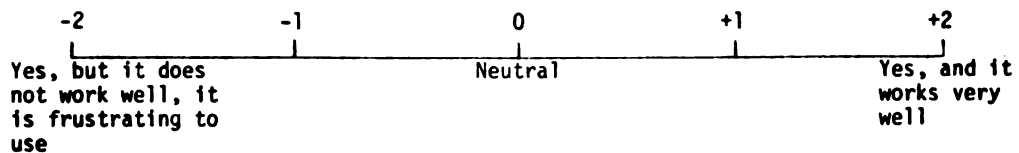


EVALUATE THE BALCONY

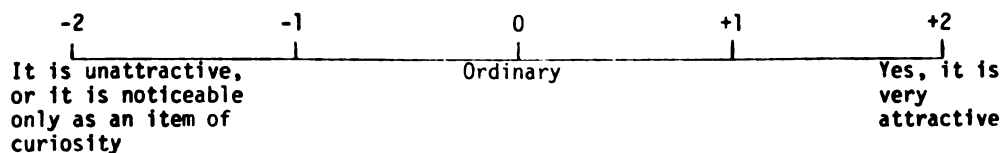
1. What is your immediate reaction to this object?

_____ I like it. _____ I am indifferent to it. _____ I dislike it.

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.

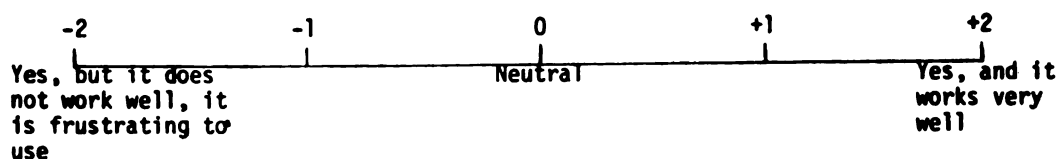


EVALUATE THE MAILBOX

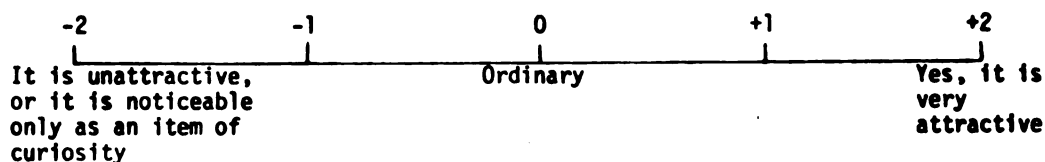
1. What is your immediate reaction to this object?

_____ I like it. _____ I am indifferent to it. _____ I dislike it.

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.

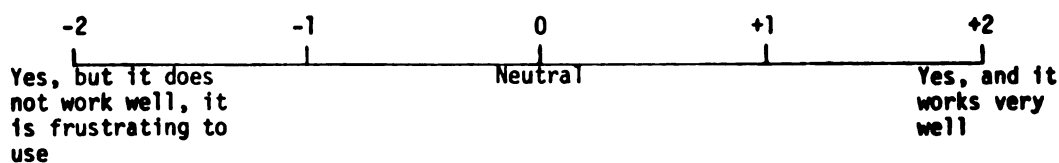


EVALUATE THE TOILET PAPER HOLDER

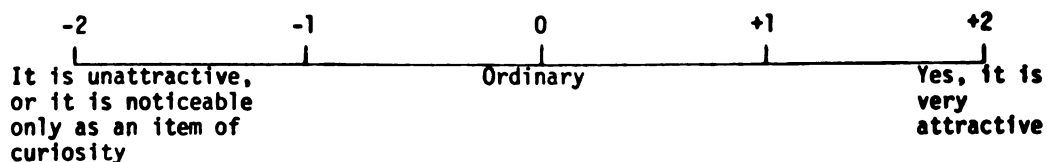
1. What is your immediate reaction to this object?

_____ I like it. _____ I am indifferent to it. _____ I dislike it.

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.

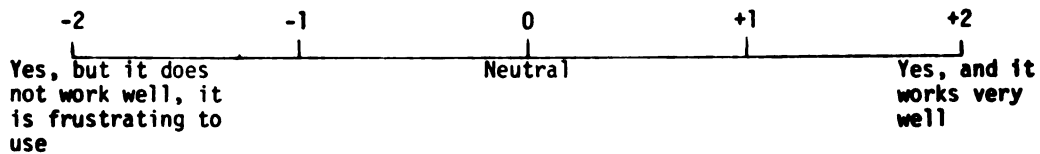


EVALUATE THE CHAIR

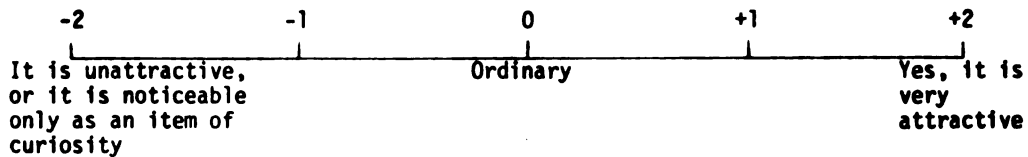
1. What is your immediate reaction to this object?

_____ I like it. _____ I am indifferent to it. _____ I dislike it.

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.

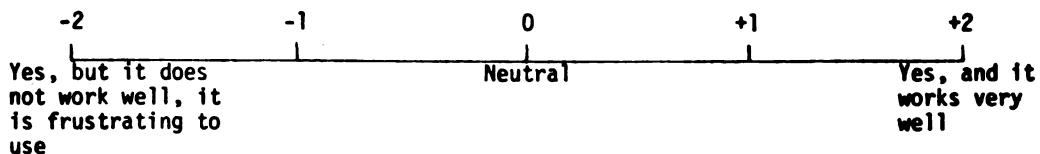


EVALUATE THE PAINTING

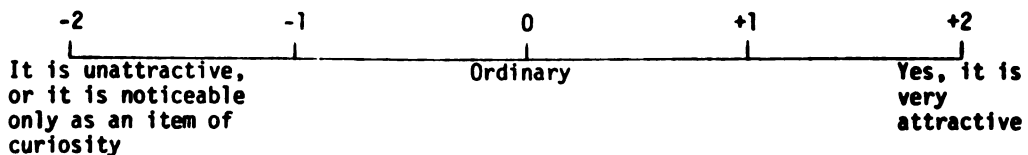
1. What is your immediate reaction to this object?

_____ I like it. _____ I am indifferent to it. _____ I dislike it.

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.

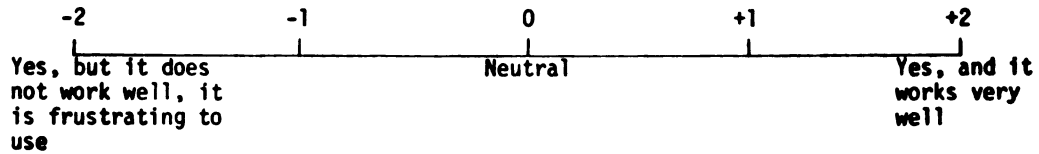


EVALUATE THE SPOON

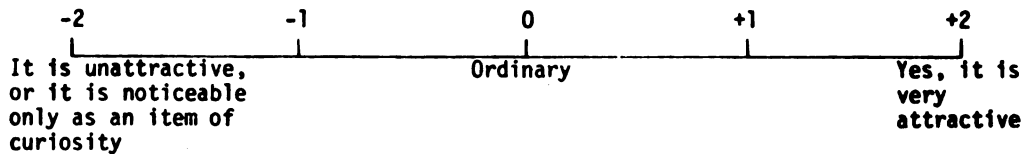
1. What is your immediate reaction to this object?

_____ I like it. _____ I am indifferent to it. _____ I dislike it.

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



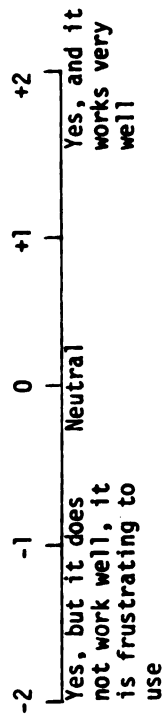
For both slides of each comparison make 4 evaluations.

EVALUATE THE CHAIRS

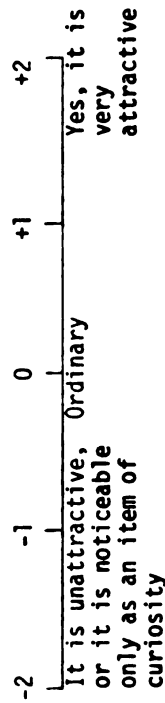
Left Slide

1. What is your immediate reaction to this object?
 _I like it _ I am indifferent to it _ I dislike it

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



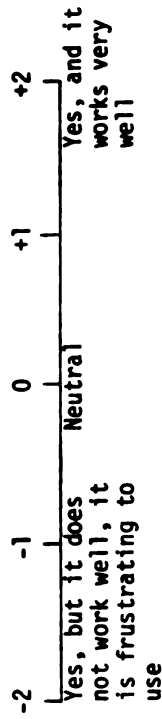
4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

Yes	it illustrates the kind of object described in the statement above
No	it does not illustrate the kind of object described above

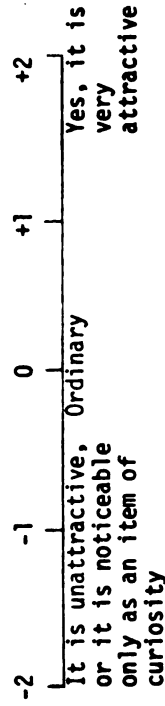
Right Slide

1. What is your immediate reaction to this object?
 _I like it _ I am indifferent to it _ I dislike it

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

Yes	it illustrates the kind of object described in the statement above
No	it does not illustrate the kind of object described above

For both slides of each comparison make 4 evaluations.

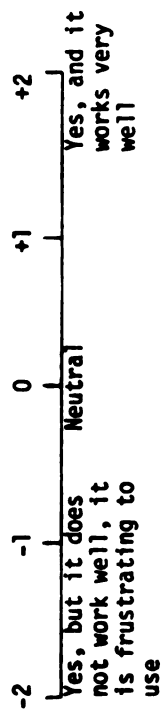
EVALUATE THE BRIDGES

Left Slide

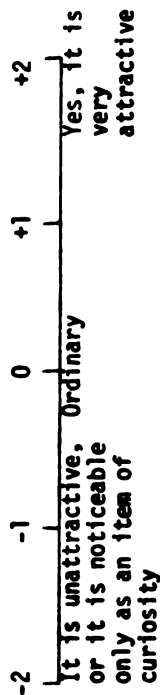
1. What is your immediate reaction to this object?

___ I like it ___ I am indifferent to it ___ I dislike it

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

Yes it illustrates the kind of object described in the statement above

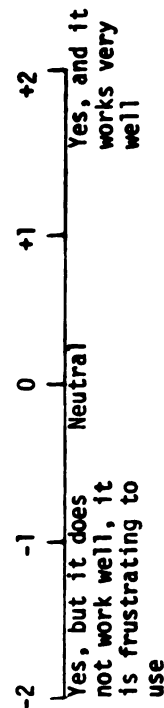
No it does not illustrate the kind of object described above

Right Slide

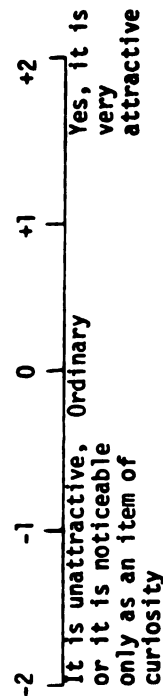
1. What is your immediate reaction to this object?

___ I like it ___ I am indifferent to it ___ I dislike it

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

Yes it illustrates the kind of object described in the statement above

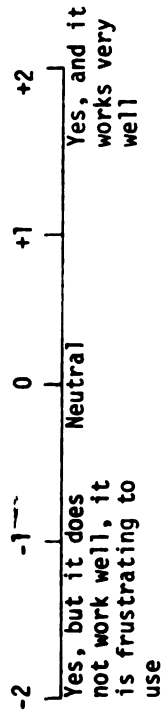
No it does not illustrate the kind of object described above

For both slides of each comparison make 4 evaluations.

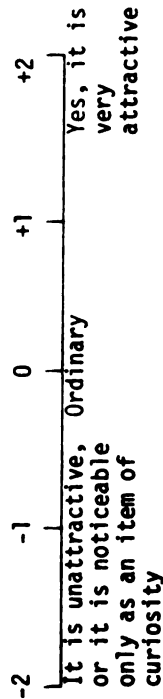
EVALUATE THE MAILBOXES

Left Slide

1. What is your immediate reaction to this object?
___ I like it ___ I am indifferent to it ___ I dislike it
2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



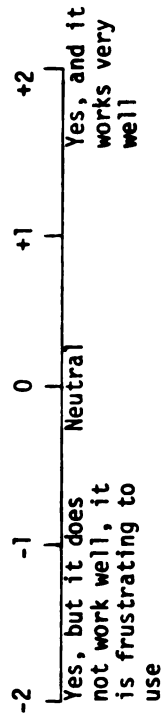
4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

Yes it illustrates the kind of object described in the statement above

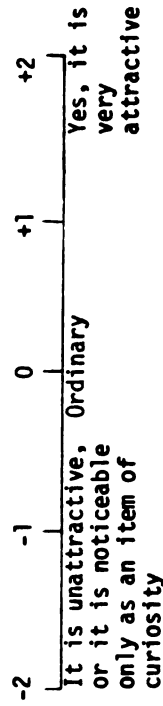
No It does not illustrate the kind of object described above

Right Slide

1. What is your immediate reaction to this object?
___ I like it ___ I am indifferent to it ___ I dislike it
2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

Yes it illustrates the kind of object described in the statement above

No It does not illustrate the kind of object described above

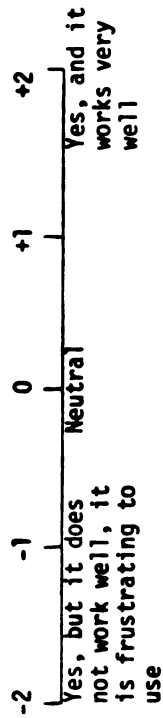
For both slides of each comparison make 4 evaluations.

EVALUATE THE CHAIRS

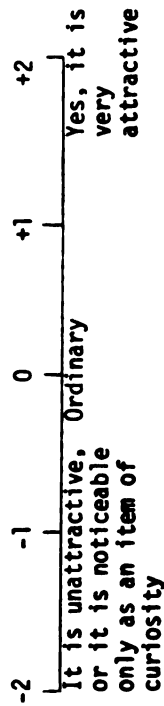
Left Slide

1. What is your immediate reaction to this object?
 ___ I like it ___ I am indifferent to it ___ I dislike it

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

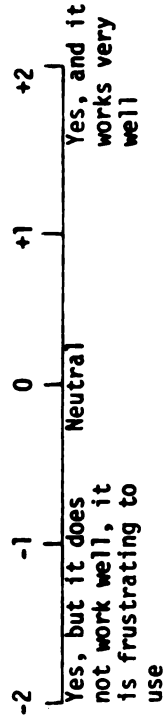
Yes it illustrates the kind of object described in the statement above

No it does not illustrate the kind of object described above

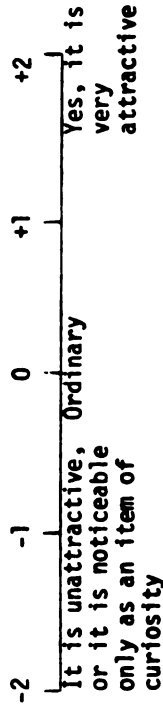
Right Slide

1. What is your immediate reaction to this object?
 ___ I like it ___ I am indifferent to it ___ I dislike it

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

Yes it illustrates the kind of object described in the statement above

No it does not illustrate the kind of object described above

For both slides of each comparison make 4 evaluations.

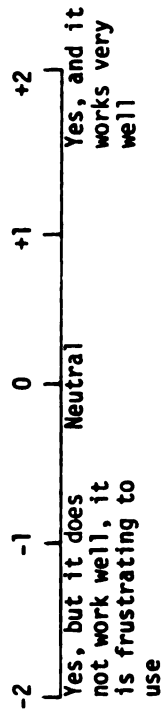
EVALUATE THE SPOONS

Left Slide

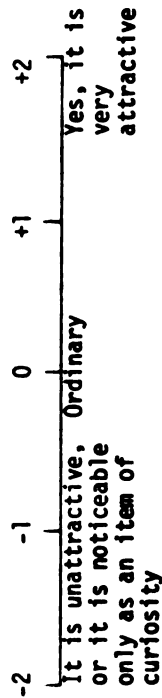
1. What is your immediate reaction to this object?

___ I like it ___ I am indifferent to it ___ I dislike it

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

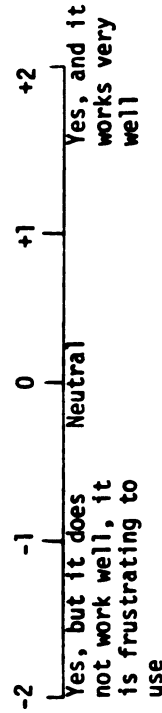
Yes	it illustrates the kind of object described in the statement above
No	it does not illustrate the kind of object described above

Right Slide

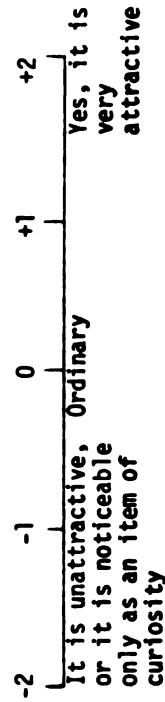
1. What is your immediate reaction to this object?

___ I like it ___ I am indifferent to it ___ I dislike it

2. The object is designed to serve a useful purpose.



3. The object is enjoyable just to look at for its own sake and one would not tire of it for a long time.



4. The form of some objects is so perfectly fitted to the function which the object performs that it seems almost to proclaim itself as a perfect solution.

Yes	it illustrates the kind of object described in the statement above
No	it does not illustrate the kind of object described above

APPENDIX C

ALLPORT-VERNON-LINDZEY

VALUES INVENTORY

TEST BOOKLET



ALLPORT • VERNON • LINDZEY

Study of Values

THIRD EDITION

HOUGHTON MIFFLIN COMPANY • BOSTON

NEW YORK • ATLANTA • GENEVA, ILL. • DALLAS • PALO ALTO

COPYRIGHT ©, 1960, BY GORDON W. ALLPORT, PHILIP E. VERNON, AND GARDNER LINDZEY

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PRINTED IN THE U.S.A.

UVWXYZ-II-73

Part I

DIRECTIONS: A number of controversial statements or questions with two alternative answers are given below. Indicate your personal preferences by writing appropriate figures in the boxes to the right of each question. Some of the alternatives may appear equally attractive or unattractive to you. Nevertheless, please attempt to choose the alternative that is *relatively* more acceptable to you. For each question you have three points that you may distribute in any of the following combinations.

1. If you agree with alternative (a) and disagree with (b), write 3 in the first box and 0 in the second box, thus
2. If you agree with (b); disagree with (a), write
3. If you have a slight preference for (a) over (b), write
4. If you have a slight preference for (b) over (a), write

	a	a	b	b
	0	3	3	0
	a	a	b	b
	1	2	2	1

Do not write any combination of numbers except one of these four. There is no time limit, but do not linger over any one question or statement, and do not leave out any of the questions unless you find it really impossible to make a decision.

1. The main object of scientific research should be the discovery of truth rather than its practical applications. (a) Yes; (b) No.

2. Taking the Bible as a whole, one should regard it from the point of view of its beautiful mythology and literary style rather than as a spiritual revelation. (a) Yes; (b) No.

3. Which of the following men do you think should be judged as contributing more to the progress of mankind? (a) Aristotle; (b) Abraham Lincoln.

4. Assuming that you have sufficient ability, would you prefer to be: (a) a banker; (b) a politician?

5. Do you think it is justifiable for great artists, such as Beethoven, Wagner and Byron to be selfish and negligent of the feelings of others? (a) Yes; (b) No.

6. Which of the following branches of study do you expect ultimately will prove more important for mankind? (a) mathematics; (b) theology.

7. Which would you consider the more important function of modern leaders? (a) to bring about the accomplishment of practical goals; (b) to encourage followers to take a greater interest in the rights of others.

8. When witnessing a gorgeous ceremony (ecclesiastical or academic, induction into office, etc.), are you more impressed: (a) by the color and pageantry of the occasion itself; (b) by the influence and strength of the group?

a	b				
<input type="checkbox"/>	<input type="checkbox"/>				
		a		b	
		<input type="checkbox"/>		<input type="checkbox"/>	
a			b		
<input type="checkbox"/>			<input type="checkbox"/>		
	a			b	
	<input type="checkbox"/>			<input type="checkbox"/>	
		a	b		
		<input type="checkbox"/>	<input type="checkbox"/>		
a				b	
<input type="checkbox"/>				<input type="checkbox"/>	
	a		b		
	<input type="checkbox"/>		<input type="checkbox"/>		
		a		b	
		<input type="checkbox"/>		<input type="checkbox"/>	
Total					
R	S	T	X	Y	Z

9. Which of these character traits do you consider the more desirable? (a) high ideals and reverence; (b) unselfishness and sympathy.
10. If you were a university professor and had the necessary ability, would you prefer to teach: (a) poetry; (b) chemistry and physics?
11. If you should see the following news items with headlines of equal size in your morning paper, which would you read more attentively? (a) PROTESTANT LEADERS TO CONSULT ON RECONCILIATION; (b) GREAT IMPROVEMENTS IN MARKET CONDITIONS.
12. Under circumstances similar to those of Question 11? (a) SUPREME COURT RENDERS DECISION; (b) NEW SCIENTIFIC THEORY ANNOUNCED.
13. When you visit a cathedral are you more impressed by a pervading sense of reverence and worship than by the architectural features and stained glass? (a) Yes; (b) No.
14. Assuming that you have sufficient leisure time, would you prefer to use it: (a) developing your mastery of a favorite skill; (b) doing volunteer social or public service work?
15. At an exposition, do you chiefly like to go to the buildings where you can see: (a) new manufactured products; (b) scientific (e.g., chemical) apparatus?
16. If you had the opportunity, and if nothing of the kind existed in the community where you live, would you prefer to found: (a) a debating society or forum; (b) a classical orchestra?

a	b				
<input type="checkbox"/>	<input type="checkbox"/>				
		a	b		
		<input type="checkbox"/>	<input type="checkbox"/>		
a			b		
<input type="checkbox"/>			<input type="checkbox"/>		
	a			b	
	<input type="checkbox"/>			<input type="checkbox"/>	
a		b			
<input type="checkbox"/>		<input type="checkbox"/>			
	a	b			
	<input type="checkbox"/>	<input type="checkbox"/>			
			a	b	
			<input type="checkbox"/>	<input type="checkbox"/>	
	a	b			
	<input type="checkbox"/>	<input type="checkbox"/>			
Total					
	R	S	T	X	Y
					Z

-

Total

24. Given your choice between two books to read, are you more likely to select: (a) THE STORY OF RELIGION IN AMERICA; (b) THE STORY OF INDUSTRY IN AMERICA?

25. Would modern society benefit more from: (a) more concern for the rights and welfare of citizens; (b) greater knowledge of the fundamental laws of human behavior?

26. Suppose you were in a position to help raise standards of living, or to mould public opinion. Would you prefer to influence: (a) standards of living; (b) public opinion?

27. Would you prefer to hear a series of popular lectures on: (a) the progress of social service work in your part of the country; (b) contemporary painters?

28. All the evidence that has been impartially accumulated goes to show that the universe has evolved to its present state in accordance with natural principles, so that there is no necessity to assume a first cause, cosmic purpose, or God behind it. (a) I agree with this statement; (b) I disagree.

29. In a paper, such as the New York Sunday Times, are you more likely to read: (a) the real estate sections and the account of the stock market; (b) the section on picture galleries and exhibitions?

30. Would you consider it more important for your child to secure training in: (a) religion; (b) athletics?

		a	b		
a	b				
			a		b
a				b	
		a	b		
				a	b
			a		b
Total					
R	S	T	X	Y	Z

Part II

DIRECTIONS: Each of the following situations or questions is followed by four possible attitudes or answers. Arrange these answers in the order of your personal preference by writing, in the appropriate box at the right, a score of 4, 3, 2, or 1. To the statement you prefer most give 4, to the statement that is second most attractive 3, and so on.

Example: If this were a question and the following statements were alternative choices you would place:

4 in the box if this statement appeals to you most.

3 in the box if this statement appeals to you second best.

2 in the box if this statement appeals to you third best.

1 in the box if this statement represents your interest or preference least of all.

		4		
3				
				2
			1	

You may think of answers which would be preferable from your point of view to any of those listed. It is necessary, however, that you make your selection from the alternatives presented, and arrange all four in order of their desirability, guessing when your preferences are not distinct. If you find it really impossible to state your preference, you may omit the question. Be sure not to assign more than *one* 4, *one* 3, etc., for each question.

-

R	S	T	X	Y	Z

-

R	S	T	X	Y	Z

12. Should one guide one's conduct according to, or develop one's chief loyalties toward —
 - a. one's religious faith
 - b. ideals of beauty
 - c. one's occupational organization and associates
 - d. ideals of charity
13. To what extent do the following famous persons interest you —
 - a. Florence Nightingale
 - b. Napoleon
 - c. Henry Ford
 - d. Galileo
14. In choosing a wife would you prefer a woman who — (*Women answer the alternative form below*)
 - a. can achieve social prestige, commanding admiration from others
 - b. likes to help people
 - c. is fundamentally spiritual in her attitudes toward life
 - d. is gifted along artistic lines
- (*For women*) Would you prefer a husband who —
 - a. is successful in his profession, commanding admiration from others
 - b. likes to help people
 - c. is fundamentally spiritual in his attitudes toward life
 - d. is gifted along artistic lines
15. Viewing Leonardo da Vinci's picture, "The Last Supper," would you tend to think of it —
 - a. as expressing the highest spiritual aspirations and emotions
 - b. as one of the most priceless and irreplaceable pictures ever painted
 - c. in relation to Leonardo's versatility and its place in history
 - d. the quintessence of harmony and design

The diagram shows a 6x6 grid. The first row contains the letters R, S, T, X, Y, Z. The subsequent rows contain a sequence of boxes, each with a letter above it. The letters are arranged in a specific pattern across the rows:

- Row 2: Box with 'd' above it.
- Row 3: Box with 'c' above it.
- Row 4: Box with 'b' above it.
- Row 5: Box with 'a' above it.
- Row 6: Box with 'a' above it.

The boxes are arranged in a way that suggests a sequence of operations or a path through the grid.

SCORE SHEET FOR THE STUDY OF VALUES

DIRECTIONS:

1. First make sure that every question has been answered.

Note: If you have found it impossible to answer all the questions, you may give equal scores to the alternative answers under each question that has been omitted; thus,

Part I. 1½ for each alternative. The sum of the scores for (a) and (b) must always equal 3.

Part II. 2½ for each alternative. The sum of the scores for the four alternatives under each question must always equal 10.

2. Add the vertical columns of scores on each page and enter the total in the boxes at the bottom of the page.
3. Transcribe the totals from each of the foregoing pages to the columns below. For each page enter the total for each column (R, S, T, etc.) in the space that is labeled with the same letter. **Note that the order in which the letters are inserted in the columns below differs for the various pages.**

Page Totals	Theoretical	Economic	Aesthetic	Social	Political	Religious	The sum of the scores for each row must equal the figure given below.
Part I							
Page 3	(R)	(S)	(T)	(X)	(Y)	(Z)	24
Page 4	(Z)	(Y)	(X)	(T)	(S)	(R)	24
Page 5	(X)	(R)	(Z)	(S)	(T)	(Y)	21
Page 6	(S)	(X)	(Y)	(R)	(Z)	(T)	21
Part II							
Page 8	(Y)	(T)	(S)	(Z)	(R)	(X)	60
Page 9	(T)	(Z)	(R)	(Y)	(X)	(S)	50
Page 10	(R)	(S)	(T)	(X)	(Y)	(Z)	40
Total							240
Correction Figures	+ 2*	- 1	+ 4	- 2*	+ 2	- 5	
Final Total							240

4. Add the totals for the six columns. Add or subtract the correction figures as indicated.
5. Check your work by making sure that the total score for all six columns equals 240. (Use the margins for your additions, if you wish.)
6. Plot the scores by marking points on the *vertical lines* in the graph on the next page. Draw lines to connect these six points.

*In the 1951 Edition these figures were: *Theoretical* +3, *Social* -3. These new correction figures have been employed in determining the norms in the 1960 manual.

NAME

Last

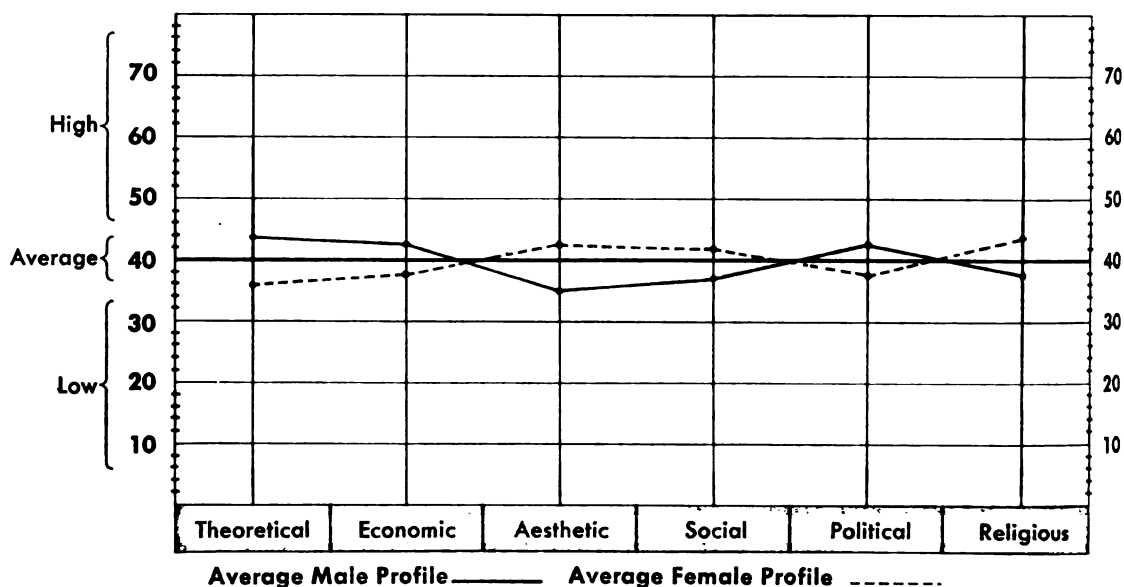
First

Middle Initial

DATE

SEX (M or F):

PROFILE OF VALUES



INTERPRETATION

The profile can be best interpreted if the scores obtained are compared with the following ranges. (Detailed norms for college students and for certain occupations will be found in the *Manual of Directions*.)

Men

High and low scores. A score on one of the values may be considered definitely high or low if it falls outside the following limits. Such scores exceed the range of 50% of all *male* scores on that value.

<i>Theoretical</i>	39-49	<i>Social</i>	32-42
<i>Economic</i>	37-48	<i>Political</i>	38-47
<i>Aesthetic</i>	29-41	<i>Religious</i>	32-44

Outstandingly high and low scores. A score on one of the values may be considered very distinctive if it is higher or lower than the following limits. Such scores fall outside the range of 82% of all *male* scores for that value.

<i>Theoretical</i>	34-54	<i>Social</i>	28-47
<i>Economic</i>	32-53	<i>Political</i>	34-52
<i>Aesthetic</i>	24-47	<i>Religious</i>	26-51

Women

High and low scores. A score on one of the values may be considered definitely high or low if it falls outside the following limits. Such scores exceed the range of 50% of all *female* scores on that value.

<i>Theoretical</i>	31-41	<i>Social</i>	37-47
<i>Economic</i>	33-43	<i>Political</i>	34-42
<i>Aesthetic</i>	37-48	<i>Religious</i>	37-50

Outstandingly high and low scores. A score on one of the values may be considered very distinctive if it is higher or lower than the following limits. Such scores fall outside the range of 82% of all *female* scores for that value.

<i>Theoretical</i>	26-45	<i>Social</i>	33-51
<i>Economic</i>	28-48	<i>Political</i>	29-46
<i>Aesthetic</i>	31-54	<i>Religious</i>	31-56

APPENDIX D

TEST ADMINISTRATION

TABLE D-1.---Crosstabulation of Attitude Toward the Object and Test Administration: Quilt.

Quadrant	Positive (I like it)			Neutral (I am indifferent)			Dislike (I dislike it)		
	Pretest		Posttest	Pretest		Posttest	Pretest		Posttest
	N	%	N %	N	%	N %	N	%	N %
A				2	7.7	1 11.0			
AB	1	1.2	1 1.0	1	3.8		3	60	
B	2	2.4	2 1.9	4	15.4	1 11.0	2	40	
BC	2	2.4	4 3.8	8	30.8	5 55.5			1 100
C	71	85.5	96 91.4	8	30.8	2 22.2			
CD	5	6.0	2 1.9						
D	1	1.2		2	7.7				
AD				1	3.8				
Origin	1	1.2							
N	83	100	105 100	26	100	9 100	5	100	1 100

TABLE D-2.--Crosstabulation of Attitude Toward the Object and Test Administration: Balcony.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A	2	40.0	1	20.0	16	72.7	13	54.2	73	82.0	75	86.2
AB					3	13.6	2	8.3	11	12.4	4	4.6
B							2	8.3	3	3.4	7	8.0
BC					1	4.5	3	12.5				
C	1	20.0	2	40.0								
CD	1	20.0	1	20.0								
D			1	20.0			1	4.2				
AD					2	9.0	3	12.5	1	1.1		
Origin	1	20.0							1	1.1	1	1.1
N	5	100	5	100	22	100	24	100	89	100	87	100

TABLE D-3.--Crosstabulation of Attitude Toward the Object and Test Administration: Painting.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A									1	33.3	1	50
AB					1	5.0	1	7.7				
B			1	1.0	2	10.0						
BC			1	1.0	2	10.0						
C	60	64.5	62	61.4	1	5.0	3	23.0	1	33.3	1	50
CD	27	29.0	30	29.7	5	25.0	6	46.2	1	33.3		
D	3	3.2	7	6.9	1	5.0						
AD							1	7.7				
Origin	3	3.2			8	40	2	15.4				
N	93	100	101	100	20	100	13	100	3	100	2	100

TABLE D-4.--Crosstabulation of Attitude Toward the Object and Test Administration: Paper Holder.

Quadrant	Positive (I like it)			Neutral (I am indifferent)			Dislike (I dislike it)		
	Pretest		Posttest	Pretest		Posttest	Pretest		Posttest
	N	%	N	%	N	%	N	%	N
A					9	20.5	5	12.5	
AB				4	6.3	2	2.8	4.5	3
B	2	22.2		20	31.7	11	15.5	56.8	23
BC	1	11.1	1	30	47.6	45	63.4	11.4	7
C	5	55.5	4	4	6.3	4	5.6	2.3	2
CD									5.0
D									
AD						1	1.4		
Origin	1	11.1		5	7.9	8	11.3	2	4.5
N	9	100	5	63	100	71	100	44	100

TABLE D-5.--Crosstabulation of Attitude Toward the Object and Test Administration: Bridge 1.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A							1	2.4	2	22.2	1	33.3
AB					1	2.3						
B	2	3.2	1	1.4	9	20.9	4	9.6	5	55.6	2	66.7
BC	18	28.6	9	12.9	21	48.9	17	41.5	1	11.1		
C	42	66.7	60	85.7	9	20.8	17	41.5				
CD	1	1.6			1	2.3						
D												
AD							1	2.4	1	11.1		
Origin					2	4.7	1	2.4				
N	63	100	70	100	43	100	41	100	9	100	3	100

TABLE D-6.--Crosstabulation of Attitude Toward the Object and Test Administration: Bridge 1--
Second Presentation.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A							1	3.0	3	27.3	1	16.7
AB							1	3.0				
B	1	1.6	2	2.6	6	14.6	6	18.2	4	36.4	4	66.7
BC	9	14.3	7	9.1	26	63.4	10	30.3	3	27.3		
C	53	84.1	68	88.3	8	19.5	12	36.4			1	16.7
CD												
D												
AD												
Origin					1	2.4	3	9.1	1	9.1		
N	63	100	77	100	41	100	33	100	11	100	6	100

TABLE D-7.--Crosstabulation of Attitude Toward the Object and Test Administration: Bridge 2.

Quadrant	Positive (I like it)			Neutral (I am indifferent)			Dislike (I dislike it)		
	Pretest		Posttest	Pretest		Posttest	Pretest		Posttest
	N	%	N %	N	%	N %	N	%	N %
A							1	9.1	
AB									1 10.0
B			3 4.5	3	8.3	8 20.0	8	72.7	8 80.0
BC	9 13.4	9 13.6		23 63.9	19 47.5		2 18.2	1 10.0	
C	57 85.1	54 81.8		8 22.2	10 25.0				
CD	1 1.5								
D									
AD									
Origin				2 5.6	3 7.5				
N	67 100	66 100		36 100	40 100		11 100	10 100	

TABLE D-8.--Crosstabulation of Attitude Toward the Object and Test Administration: Spoon 1.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A					1	2.0			1	9.1		
AB			1	1.5	2	3.9	1	2.2	1	9.1		
B	1	1.9	1	1.5	6	11.8	7	15.2	7	63.6	2	66.7
BC	18	33.3	8	11.9	36	70.6	29	63.0	2	18.2		
C	34	63.0	55	82.1	5	9.8	8	17.4				
CD			1	1.5								
D			1	1.5								
AD												
Origin	1	1.9			1	2.0	1	2.2			1	33.3
N	54	100	67	100	51	100	46	100	11	100	3	100

TABLE D-9.--Crosstabulation of Attitude Toward the Object and Test Administration: Spoon 1--
Second Presentation.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A	1	1.7			1	2.0						
AB												
B	2	3.4			6	12.0	6	17.1	5	62.5	4	100
BC	18	31.0	11	14.7	31	62.0	26	74.3	3	37.5		
C	37	63.8	63	84.0	10	20.0	3	8.6				
CD												
D			1	1.3								
AD												
Origin					2	4.0						
N	58	100	75	100	50	100	35	100	8	100	4	100

TABLE D-10.--Crosstabulation of Attitude Toward the Object and Test Administration: Spoon 2.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A	4	11.1	1	2.9	5	38.5	5	29.4	36	53.7	41	64.1
AB			1	2.9	2	15.4	1	5.9	3	4.5	5	7.8
B			1	2.9			3	17.6	10	14.9	9	14.1
BC												
C	11	30.6	6	17.6	1	7.7	1	5.9	2	3.0	3	4.7
CD	9	25.0	7	20.6	3	23.1	4	23.5	1	1.5		
D	12	33.3	18	52.9	1	7.7			11	16.4	4	6.3
AD							2	11.8	3	4.5	1	1.6
Origin					1	7.7	1	5.9	1	1.5	1	1.6
N	36	100	34	100	13	100	17	100	67	100	64	100

TABLE D-11.--Crosstabulation of Attitude Toward the Object and Test Administration: Mailbox 1.

Quadrant	Positive (I like it)			Neutral (I am indifferent)			Dislike (I dislike it)				
	Pretest		Posttest	Pretest		Posttest	Pretest		Posttest		
	N	%	N %	N	%	N %	N	%	N %		
A				1	1.6	1	1.2	1	7.7	1	11.1
AB				1	1.6						
B	1	2.4		8	13.1	15	18.5	9	69.2	5	55.6
BC	11	26.2	10 38.5	42	68.9	50 61.7	2	15.4	2	22.2	
C	29	69.4	16 61.5	7	11.5	11 13.6					
CD	1	2.4									
D											
AD											
Origin				2	3.3	4	4.9	1	7.7	1	11.1
N	42	100	26 100	61	100	81 100	13	100	9	100	

TABLE D-12.--Crosstabulation of Attitude Toward the Object and Test Administration: Mailbox--
Second Presentation.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A					3	4.5						
AB									1	8.3	1	11.1
B	1	2.0			7	13.2	3	4.5	6	50.0	5	55.6
BC	19	38.0	15	37.5	39	73.6	50	74.6	5	41.6	3	33.3
C	30	60.0	25	62.5	6	11.3	11	16.4				
CD												
D												
AD												
Origin					1	1.9						
N	50	100	40	100	53	100	67	100	12	100	9	100

TABLE D-13.--Crosstabulation of Attitude Toward the Object and Test Administration: Mailbox 2.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A					1	4.2	1	2.6	3	12.0	2	9.5
AB									2	8.0	1	4.8
B	1	1.5			1	4.2	7	18.4	13	52.0	16	76.2
BC	8	11.9	2	3.5	11	45.8	16	42.1	4	16.0	2	9.5
C	57	85.1	55	96.5	10	41.7	12	31.6	2	8.0		
CD	1	1.5										
D												
AD							1	2.6				
Origin					1	4.2	1	2.6	1	4.0		
N	67	100	57	100	24	100	38	100	25	100	21	100

TABLE D-14.--Crosstabulation of Attitude Toward the Object and Test Administration: Chair 1.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A	3	3.9	2	2.7	2	14.3	1	6.3	15	60.0	14	51.9
AB	2	2.6	1	1.4	8	57.1	1	6.3	1	4.0	5	18.5
B	3	3.9			2	14.3	4	25.0	7	28.0	7	25.9
BC												
C	55	71.4	50	68.5	2	14.3	6	37.5	1	4.0	1	3.7
CD	8	10.4	8	11.0					1	4.0		
D	6	7.8	12	16.4			2	12.5				
AD							1	6.3				
Origin							1	6.3				
N	77	100	73	100	14	100	16	100	25	100	27	100

TABLE D-15.--Crosstabulation of Attitude Toward the Object and Test Administration: Chair--
Second Presentation.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A	4	5.2	2	2.9	1	9.1			16	59.3	18	54.5
AB	2	2.6			2	18.2	3	20.0	3	11.1	2	6.1
B	3	3.9	1	1.5	3	27.3	3	20.0	6	22.2	9	27.3
BC	2	2.6					3	20.0				
C	54	70.1	46	67.6			4	26.7	1	3.7	4	12.1
CD	6	7.8	7	10.3					1	3.7		
D	6	7.8	11	16.2	3	27.3	1	6.7				
AD					2	18.2	1	6.7				
Origin			1	1.5								
N	77	100	68	100	11	100	15	100	27	100	33	100

TABLE D-16.--Crosstabulation of Attitude Toward the Object and Test Administration: Chair 1--
Third Presentation.

Quadrant	Positive (I like it)				Neutral (I am indifferent)				Dislike (I dislike it)			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%	N	%
A	2	2.7	2	2.9	3	21.4	4	22.2	12	46.2	18	64.3
AB			2	2.9	2	14.3	2	11.1	2	7.7	2	7.1
B	3	4.1			2	14.3			10	38.5	5	17.9
BC	3	4.1	1	1.4			4	22.2				
C	56	75.7	50	71.4	3	21.4	6	33.3	1	3.8	2	7.1
CD	5	6.8	2	2.9					1	3.8		
D	5	6.8	12	17.1	2	14.3						
AD					2	14.3	1	5.6				
Origin			1	1.4			1	5.6			1	3.6
N	74	100	70	100	4	100	18	100	26	100	28	100

TABLE D-17.--Crosstabulation of Attitude Toward the Object and Test Administration: Chair 2.

Quadrant	Positive (I like it)			Neutral (I am indifferent)			Dislike (I dislike it)		
	Pretest		Posttest	Pretest		Posttest	Pretest		Posttest
	N	%	N %	N	%	N %	N	%	N %
A							9	30.0	
AB				4	9.8	1	1	3.3	
B			2	9	22.0	5	16	53.3	7
BC	9	20.5	12	24	58.5	16	2	6.7	3
C	35	79.5	53	2	4.9	13			30.0
CD			1						
D			1						
AD				1	2.4		1	3.3	
Origin			1	1	2.4	1	1	3.3	
N	44	100	70	41	100	36	30	100	10

TABLE D-18.--Crosstabulation of Attitude Toward the Object and Test Administration: Chair 3.

Quadrant	Positive (I like it)			Neutral (I am indifferent)			Dislike (I dislike it)			
	Pretest		Posttest	Pretest		Posttest	Pretest		Posttest	
	N	%	N	%	N	%	N	%	N	%
A	2	5.1	2	4.7	6	18.2	14	29.2	13	32.5
AB	2	5.1	2	4.7	3	9.1	12	25.0	8	20.0
B	3	7.7	2	4.7	3	12.1	16	33.3	15	37.5
BC	6	15.4	6	14.0	8	33.3	2	4.2	4	10.0
C	19	48.7	25	58.1	2	21.2	1	2.1		
CD			1	2.3		3.0				
D	5	12.8	4	9.3	2	3.0				
AD					1		2	4.2		
Origin	2	5.1	1	2.3	2		1	2.1		
N	39	100	43	100	27	100	48	100	40	100

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